MEMORANDUM

To:	Matthew J. Schlicht Engineering Solutions
From:	Jeff Wilke, PE, PTOE Kimley-Horn and Associates, Inc.
Date:	November 21, 2024
Subject:	3rd Street and View High Drive Traffic Impact Study Update Lee's Summit, Missouri
Project No.:	268132010

INTRODUCTION

Kimley-Horn has prepared the following memorandum for the proposed changes to the 3rd Street and View High Drive development, generally located in the northeast corner of the 3rd Street and View High Drive intersection in Lee's Summit, Missouri. The purpose of this memorandum is to document changes in trip generation between the approved development plan and the proposed development site plan. The original traffic impact study for this development was completed in July of 2016 and was titled 3rd Street and View High Traffic Impact Study.

APPROVED DEVELOPMENT

The 3rd Street and View High development includes pad sites for commercial uses, multifamily apartment buildings and a senior adult housing facility. Since the original traffic impact study was completed in 2016, the multifamily apartment buildings located in the northern portion of the site have been constructed. Both Drive A (Kessler Drive) and Drive B (Village Park Drive) from the previously approved plan have also been constructed. Village Park Drive was built approximately 165 feet to the north of where Drive B was shown on the previously approved plan. Village Park Drive aligns with the east/west street that was proposed to provide access to the senior adult housing facility and extend east to connect to Thoreau Drive.

The traffic study for the approved development included a discussion of development phasing and timing of the improvements identified. The study stated that Drives A and B were to be constructed with the initial phases of the development. The initial phases were to include the apartments, senior adult housing, and the commercial area to the north of Drive B. Turn lane improvements were identified for the View High Drive intersections with Drives A and B. These improvements were found to be necessary to support the portion of the development that is north of Drive B. All of the turn lane improvements identified in the study for these intersections have been constructed at the time of this study.

PROPOSED DEVELOPMENT

The proposed development plan includes a gas station with convenience store to be located in the northeast corner of the View High Drive and Village Park Drive intersection. The proposed development site is part of an area that was planned to be commercial development in the previously approved plan. The site will be accessed from a full-access driveway located along Village Park Drive, approximately 315 feet east of the right-in/right-out intersection at View High Drive and Village Park Drive. The 5,300 square foot

convenience store is located in the northern portion of the site. There is a gas station canopy with 12 fueling positions to the south of the proposed building. Surface parking is provided in the front of the building and along the east, west, and south sides of the site.

TRIP GENERATION

The expected trips generated by the previously approved plan for the commercial portion of the site north of Drive B and the currently proposed development plan are compared in **Table 1**. For the purposes of this study, the approved trip generation includes the portion of the commercial development located north of Drive B on the previously approved plan, which is equal to approximately 25% of the total commercial area. Thus, **Table 1** shows 25% of the trip generation for the total commercial portion of the previously approved plan. Trip generation estimates for the proposed plan were prepared using the *ITE Trip Generation Manual*, 11th Edition. **Appendix B** provides the data from the *ITE Trip Generation Manual* that were used to determine the trip generation.

TABLE 1: TRIP GENERATION

Land Use Description	ITE LUC	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Approved Trip Generation – From July 2016 Traffic Impact Study									
Shopping Center (north of Drive B)	820	64,192 Square Feet	3,134	43	27	70	135	147	282
Proposed Trip Generation									
Gas Station with Convenience Store	945	12 Fueling Positions	3,086	162	162	324	137	136	273
Net Difference in Development Trips			-48	119	135	254	2	-11	-9

The proposed plan is expected to generate 254 more trips during the AM peak hour than the full build out of the commercial development north of Drive B on the previously approved plan. The proposed plan is expected to generate 9 fewer PM peak hour trips and 48 fewer daily trips than the full build out of the commercial development north of Drive B on the previously approved plan.

It is worth noting that the gas station land use has a high rate of pass-by traffic, where as much as 50 percent of the site generated trips may be drivers already traveling on the adjacent streets. Pass-by traffic stops at a land use while in route to another destination. These drivers would not be new trips to the street network, but they would represent new turning movements in and out of the site to access these land use.

SUMMARY

A gas station with convenience store is proposed to be located in the northeast corner of the View High Drive and Village Park Drive intersection. The proposed development plan replaces a portion of the commercial development between Drive A and Drive B on the previously approved plan. For the purposes of this study, the proposed development trips are compared to the portion of the commercial development located between Drive A and Drive B on the previously approved plan, which is equal to approximately 25% of the total commercial area. The proposed development plan is expected to generate 254 more AM peak hour trips and 9 less PM peak hour trips than the full build out of the commercial development north of Drive B on the previously approved plan. As much as 50 percent of the trips generated by the proposed development may be pass-by traffic which is already traveling on the adjacent streets and would not be new trips to the street network.

APPENDIX

Appendix A: SITE PLAN

Appendix B: ITE TRIP GENERATION MANUAL DATA

Appendix A: Site Plan

3394 NW VILLAGE PARK DR

Preliminary Development Plan

Section 3, Township 47 North, Range 32 West

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

PROPERTY DESCRIPTION

All of Lot 2B of, Minor Plat of Village at View High-Lots 2A & 2B, in Lee's Summit, Jackson County, Missouri, Recorded as Document Number 2017E0113945.

ALL PAVING ON THE PARKING LOT WILL COMPLY WITH THE UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8 IN TERMS OF PAVING THICKNESS AND BASE

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

SURVEY AND PLAT NOTES:
THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 29095C0412G **EFFECTIVE DATE: JANUARY 20, 2017.**

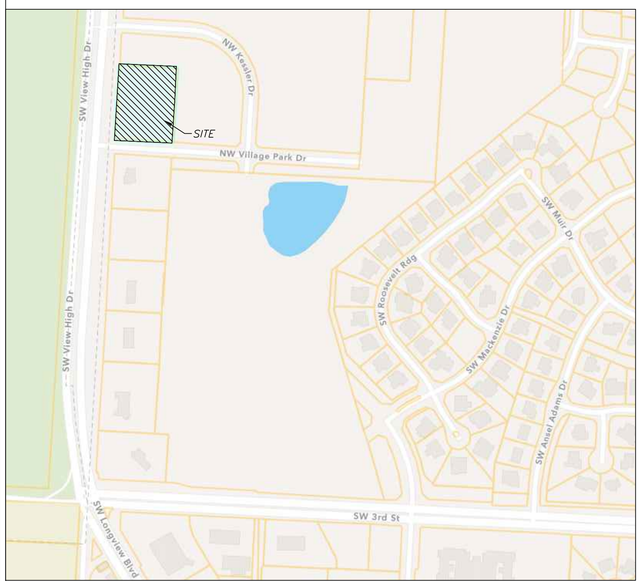
UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

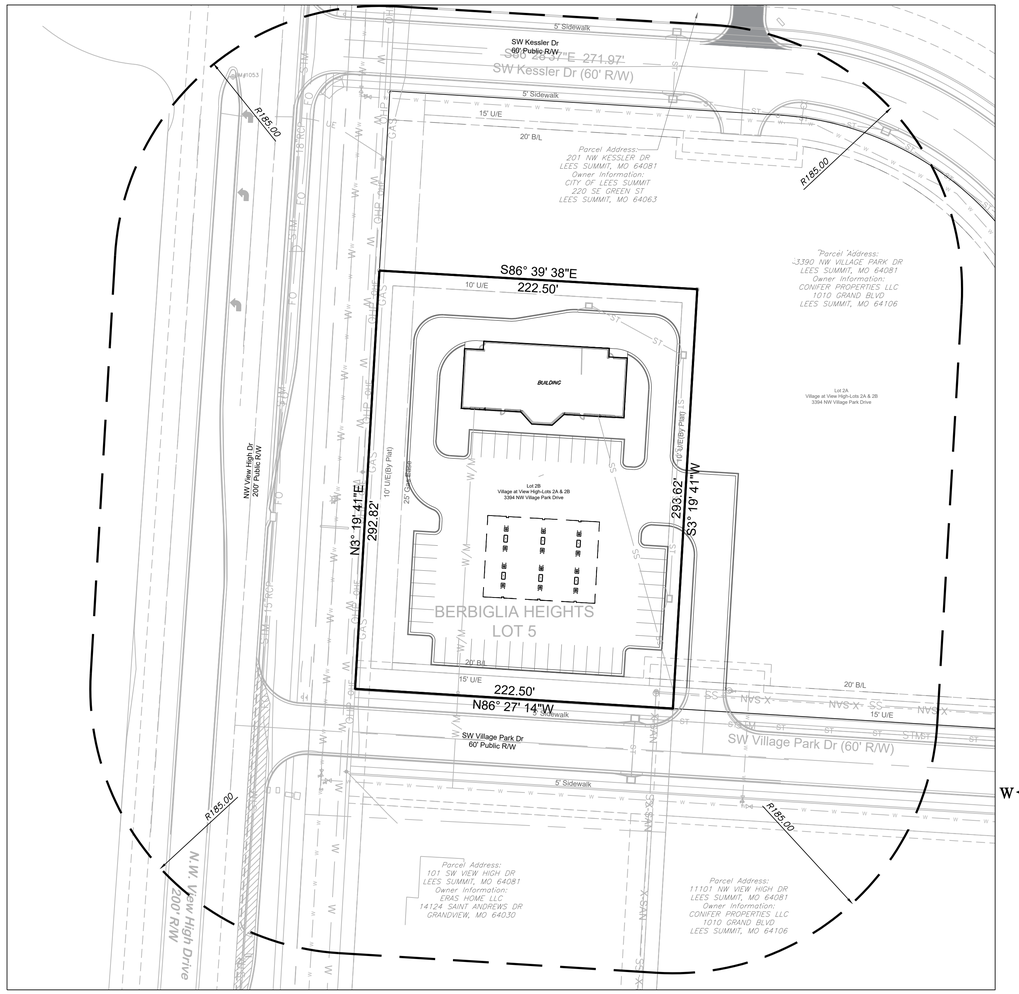
EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTIONS ~ 969-1800
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED BY SEPARATE DOCUMENT
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTORS 48 HOURS PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.



Vicinity Map



SITE LOCATION MAP

SCALE: 1"=50'

INDEX OF SHEETS:

Site Impervious Area

Total Area	*1.50 acres (65,241.23 sq. ft.)*
Commercial Office Site	
Site Area	*1.50 Acres*
Building	*6,668 sq. ft.*
Parking	*38,254 sq. ft*
Sidewalk	*0 sq. ft*
Impervious Area	*44,922 sq. ft (68.9% of Site)*
Floor-Area-Ratio	*10.2%*

Parking:
Provided
43 Standard (0 ADA Accessible)

Required
43 Standard (0 ADA Accessible)

Total Parking Spaces 43

Current Zoning: PMIX
Proposed Zoning: PMIX

Site Improvement Notes

Sanitary Sewer Improvements
-The site will utilize the existing sanitary sewer on the north side of SW Village Park Dr.

Water Main Improvements
-The site will utilize the existing water on the south side of SW Village Park Dr.

Storm Sewer
-Enclosed pipe systems and inlets will collect and convey the onsite storm water runoff and direct it toward the existing public storm sewer system.

Storm Water Detention
-N/A

LEGEND:

Existing Underground Power	UGP UGP
Existing Conc. Curb & Gutter	
Existing Wood Fence	X X
Existing Gas Main	GAS
Existing Water Main	X-W/M- X-W/M-
Existing Storm Sewer	X-STM- X-STM-
Existing Sanitary Sewer	X-SAN- X-SAN-
Existing Underground Telephone	UGT UGT
Existing Overhead Power	OHE
Proposed Storm Sewer	ST ST ST
Proposed Sanitary Sewer	SS SS
Proposed Underground Power	UGT UGT
Proposed Gas Service	GAS
Proposed 8" D.I.P. Water	W
Proposed Electrical Service	UGP UGP

ENGINEERING SOLUTIONS
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Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

3394 NW Village Park Dr
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

Project: 3394 NW VILLAGE PARK
Issue Date: October 9, 2024

OVERALL SITE PLAN
Construction Plans for:
3394 NW VILLAGE PARK DR
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

C.100

Appendix B: ITE Trip Generation Manual Data

Land Use: 945
Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and pre-made sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

Convenience store (Land Use 851), gasoline/service station (Land Use 944), and truck stop (Land Use 950) are related uses.

Land Use Subcategory

Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

When analyzing the convenience store/gas station land use with each combination of GFA and VFP values as described above, the two sets of data plots will produce two estimates of site-generated trips. Both values can be considered when determining a site trip generation estimate.

Data plots are also provided for three additional independent variables: AM peak hour traffic on adjacent street, PM peak hour traffic on adjacent street, and employees. These independent variables are intended to be analyzed as single independent variables and do not have sub-categories associated with them. Within the data plots and within the ITETripGen web app, these plots are found under the land use subcategory "none."

Additional Data

ITE recognizes there are existing convenience store/gas station sites throughout North America that are larger than the sites presented in the data plots. However, the ITE database does not include any site with more than 24 VFP or any site with gross floor area greater than 10,000 square feet. Submission of trip generation data for larger sites is encouraged.

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/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Arkansas, California, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wisconsin.

Source Numbers

221, 245, 274, 288, 300, 340, 350, 351, 352, 355, 359, 385, 440, 617, 718, 810, 813, 844, 850, 853, 864, 865, 867, 869, 882, 883, 888, 904, 926, 927, 936, 938, 954, 960, 962, 977, 1004, 1024, 1025, 1027, 1052

Convenience Store/Gas Station - GFA (4-5.5k)
(945)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday**

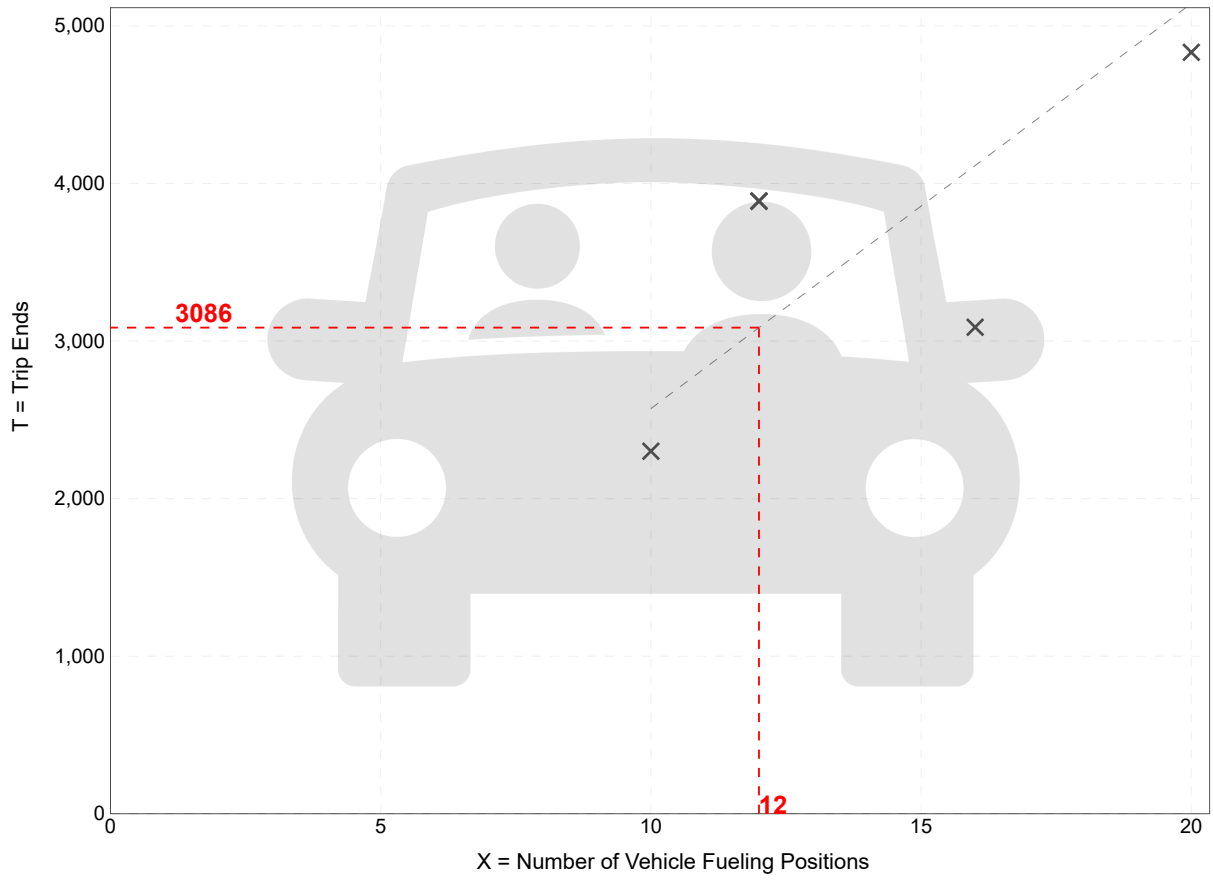
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
257.13	193.00 - 324.17	57.53

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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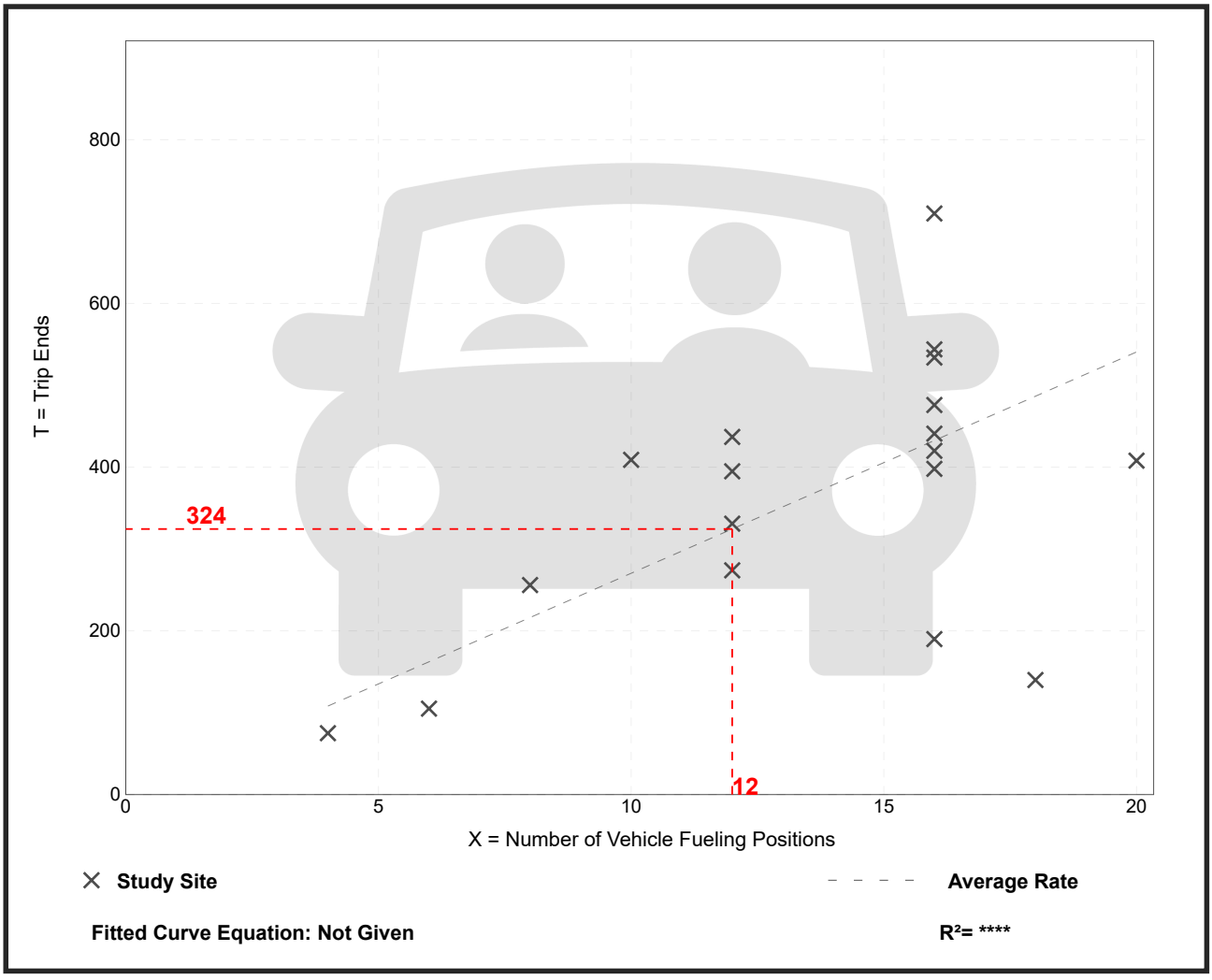
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
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:	18
Avg. Num. of Vehicle Fueling Positions:	13
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
27.04	7.78 - 44.38	9.88

Data Plot and Equation



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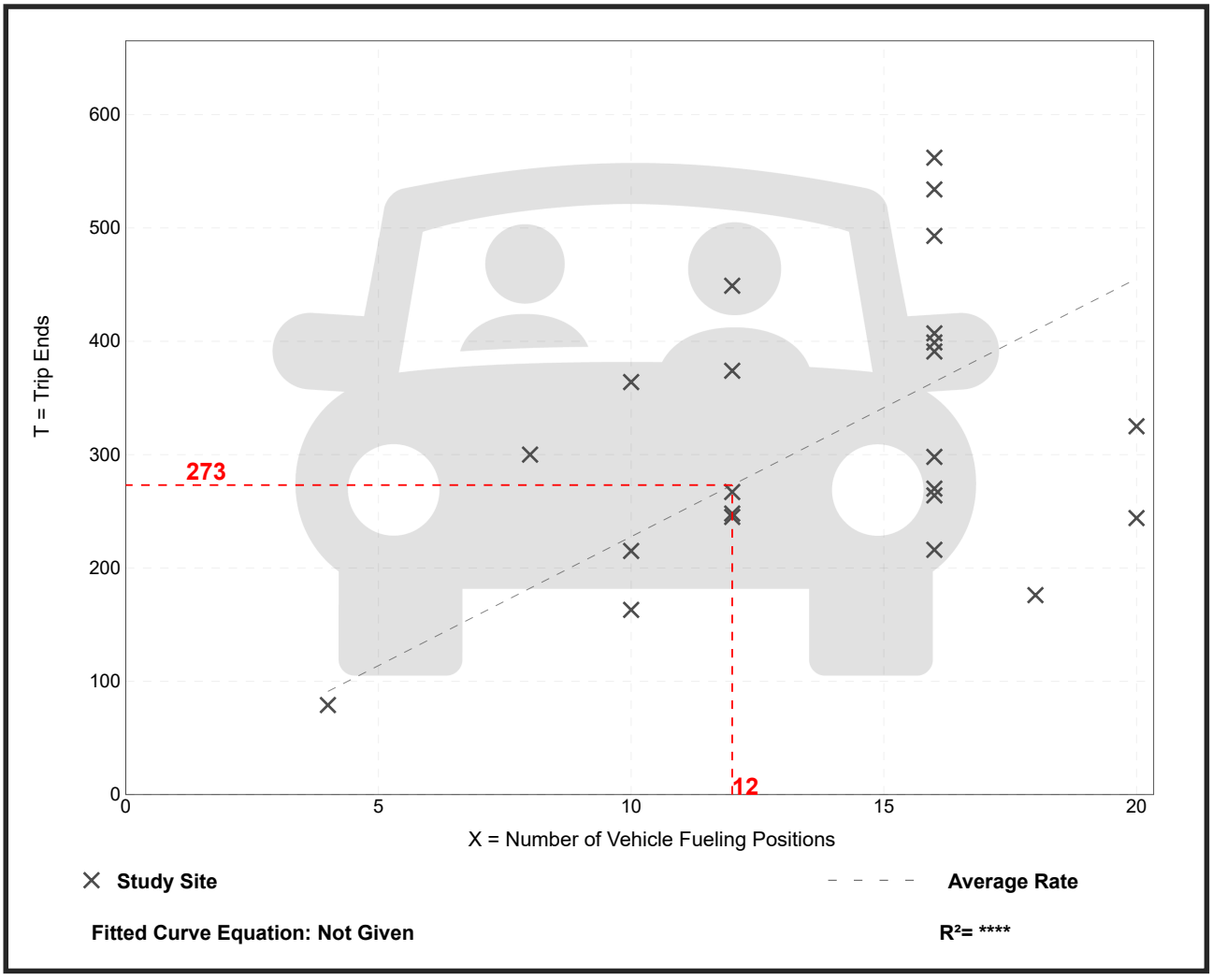
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
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: 23
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
22.76	9.78 - 37.50	8.49

Data Plot and Equation



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