




181 WEST HIGH STREET  
SOMERVILLE, NJ 08876

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TRAFFIC IMPACT STATEMENT  
FOR  
7 LOWER HOOK ROAD, LLC  
PROPOSED WAREHOUSE

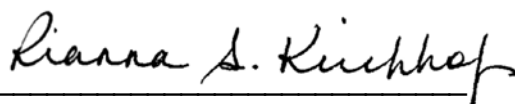
BLOCK 479, LOT 1  
CITY OF BAYONNE  
HUDSON COUNTY, NEW JERSEY

NOVEMBER 2, 2021



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GARY W. DEAN, P.E., P.P.  
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RSK\lrc  
Hudson/Bayonne/Alcsl/LowerHook/2021-11-02 TIS

TRAFFIC ENGINEERING  
PARKING STUDIES  
HIGHWAY DESIGN  
DOT ACCESS PERMITS  
MUNICIPAL CONSULTING

## INTRODUCTION

Dolan & Dean Consulting Engineers, LLC (D&D) has prepared this Traffic Impact Statement in support of an application for the redevelopment of the property located at the 7 Lower Hook Road in Bayonne. The site is currently occupied by an approximately 37,000 square foot warehouse and a light industrial use comprised of multiple buildings totaling approximately 18,000 square feet. Access to the property is provided via a curb cut on the southerly property line. Gated entry is provided along the northerly property line.

Under the development program, the site will be razed, and a 70,350 square foot warehouse (inclusive of 1,689 square feet of office space and a 4,960 square foot interior dock) will be constructed in its place. Access is proposed via a gated access at the southeast portion of the property where Lower Hook Road bends. A secondary access is provided along the northerly property line via a slide gate. A railroad siding is proposed along the westerly property line to serve the new building. A ten-foot-wide truck staging area is proposed on the easterly side of the building.

D&D has been retained by the applicant to prepare a Traffic Impact Statement to address trip generation characteristics and potential resultant traffic impacts of the proposed warehouse.



## EXISTING CONDITIONS

The site is a 2.29-acre parcel and is designated as Lot 1 in Block 479 located at 7 Lower Hook Road in the City of Bayonne. As noted, the site is currently occupied by a 37,000 square foot warehouse and a light industrial use comprised of multiple buildings totaling approximately 18,000 square feet. Access to the property is provided via a curb cut on the southerly property line. Gated entry is provided along the northerly property line.

Lower Hook Road is classified as a local roadway under municipal jurisdiction. The roadway has a meandering alignment through the adjacent heavy industrial area varying between a north-south orientation and an east-west orientation. The roadway transitions from Hook Road to Avenue J along its length.

Both roadways lead to intersections with Route 440, the main arterial through this industrial/terminal area. Due to the industrial nature of the surrounding area, the roadway typically experiences a high volume of trucks and tractor trailers. A speed limit is not posted in the site vicinity, thus a statutory 25MPH speed limit would be in effect. Curbing and sidewalk are not provided along the roadway and on-street parking is prohibited. Railroad tracks are present within the subject property as well as neighboring properties.



## TRAFFIC CHARACTERISTICS OF THE PROPOSED WAREHOUSE

Traffic projections for both the existing industrial/warehouse facility and proposed warehouse were prepared to evaluate potential increases in peak hour trip generation. Trip estimates were derived using research data of comparable facilities as published by the Institute of Transportation Engineers (ITE) within the 11<sup>th</sup> Edition of the ITE Trip Generation Manual.

To generate traffic projections, Land Use 110 – “Light Industrial” and Land Use 150 – “Warehousing” were used for the existing use. Land Use 150 – “Warehousing” was also used for the proposed use. By ITE’s definition, small, ancillary office area is typically provided at warehouses and therefore the total building area is the appropriate metric used when estimating warehouse trip generation. The ITE trip generation data summary estimates are appended.

Using the ITE warehousing rates, the following trip projections are calculated for the proposed warehouse:

TABLE I  
TRIP GENERATION PROJECTIONS  
PROPOSED 65,390 SF WAREHOUSE

PEAK HOUR	ENTER	EXIT	TOTAL
Morning	24	7	31
Evening	9	25	34

As previously mentioned, the site is currently developed by a 37,000 square foot warehouse and 18,000 square feet of light industrial uses each of which could generate traffic if operational. It can be reasonably assumed that the proposed warehousing use will operate with traffic characteristics similar to those that currently exist given the industrial nature of both uses. Table II shows the overall trip comparison between the existing and proposed uses and the net traffic increases.



TABLE II  
TRIP GENERATION COMPARISON  
EXISTING VS. PROPOSED

Land Use	Size	AM Peak	SAT Peak
Existing	55,000 SF	44	43
Proposed	65,390 SF	31	34
Traffic Increase		-13	-9

As noted, the elimination of the former light industrial use (which presumably would have been more employee-traffic intensive) will reduce the net site traffic. As such, the proposal for a single warehouse building will result in a positive traffic impact through an overall reduction. Even considering the existing use as entirely warehouse, the net traffic increase with a modestly larger building would at most increase traffic by only 5 additional peak hour trips – one vehicle every 12 minutes, on average.

The ITE Manual of Transportation Engineering Studies offers objective guidelines with a specific minimum traffic volume threshold to determine when traffic impact studies would be appropriate for new developments. It is accepted professional practice that minimal traffic increase will not negatively affect a given roadway system and therefore do not require a detailed study to quantify such a conclusion.

The ITE recommends that traffic studies are performed when a development generates 100 or more new trips during an hour. Similarly, NJDOT defines a “significant” traffic increase that warrants a study as 100 or more additional trips in an hour. As noted in Table I and Table II, the proposed redevelopment of the site will generate less than 100 trips during the critical peak hours and less traffic than the existing use.

The projected volume of traffic is too small to have a significant or measurable impact on the adjacent roadway network. Site traffic falls well below this threshold and generates less traffic than the existing use. Consequently, the proposed development will not create a negative traffic impact on the adjacent roadway network.



## **SITE PLAN REVIEW**

An evaluation was conducted on the Site Plan prepared by SR3 Engineers dated August 9, 2021. The following comments address site access and parking as shown on the Site Plan.

The Ordinance requires that parking be calculated for the office area separately from the overall building area. Accordingly, the 1,689 square feet of proposed office space requires 6 spaces, based on a ratio of 1 space for every 300 square feet. The balance of the building, 68,661 square feet, will be warehouse space. Using the applicable ratio of 1 parking space for every 5,000 square feet, 14 spaces are required. The total required parking is 20 spaces.

The Site Plan proposes fourteen (14) 9-foot-wide by 18-foot-deep car parking spaces (inclusive of 1 ADA accessible stall) on the north and south sides of the building. The interior dock bay accommodates 6 loading positions.

The parking areas are served by a 25-foot drive aisle, which meets the City requirements. These dimensions will provide efficient two-way flow and parking maneuvers, especially for large trucks that would frequent the site.

Based on this review, it is concluded that safe and efficient access and circulation can be provided to the site with reasonable and prudent driver behavior. Consequently, from a traffic engineering perspective, the site is particularly well suited for the proposed development, which will be similar in character to the existing development and will have no detrimental impact on traffic conditions on the roads surrounding the site.



# TECHNICAL APPENDIX

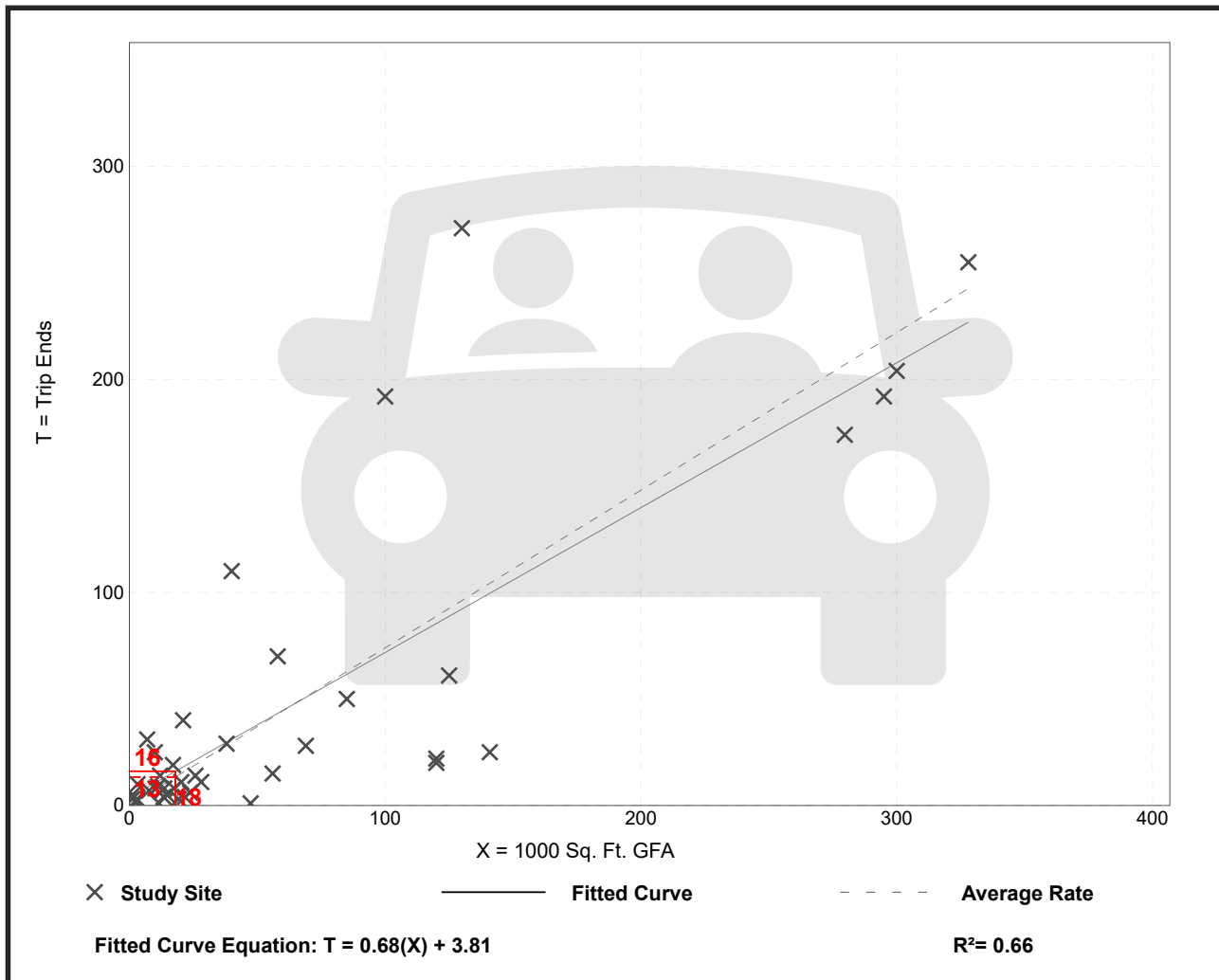
# General Light Industrial (110)

**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: 41  
 Avg. 1000 Sq. Ft. GFA: 65  
 Directional Distribution: 88% entering, 12% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.74	0.02 - 4.46	0.61

## Data Plot and Equation





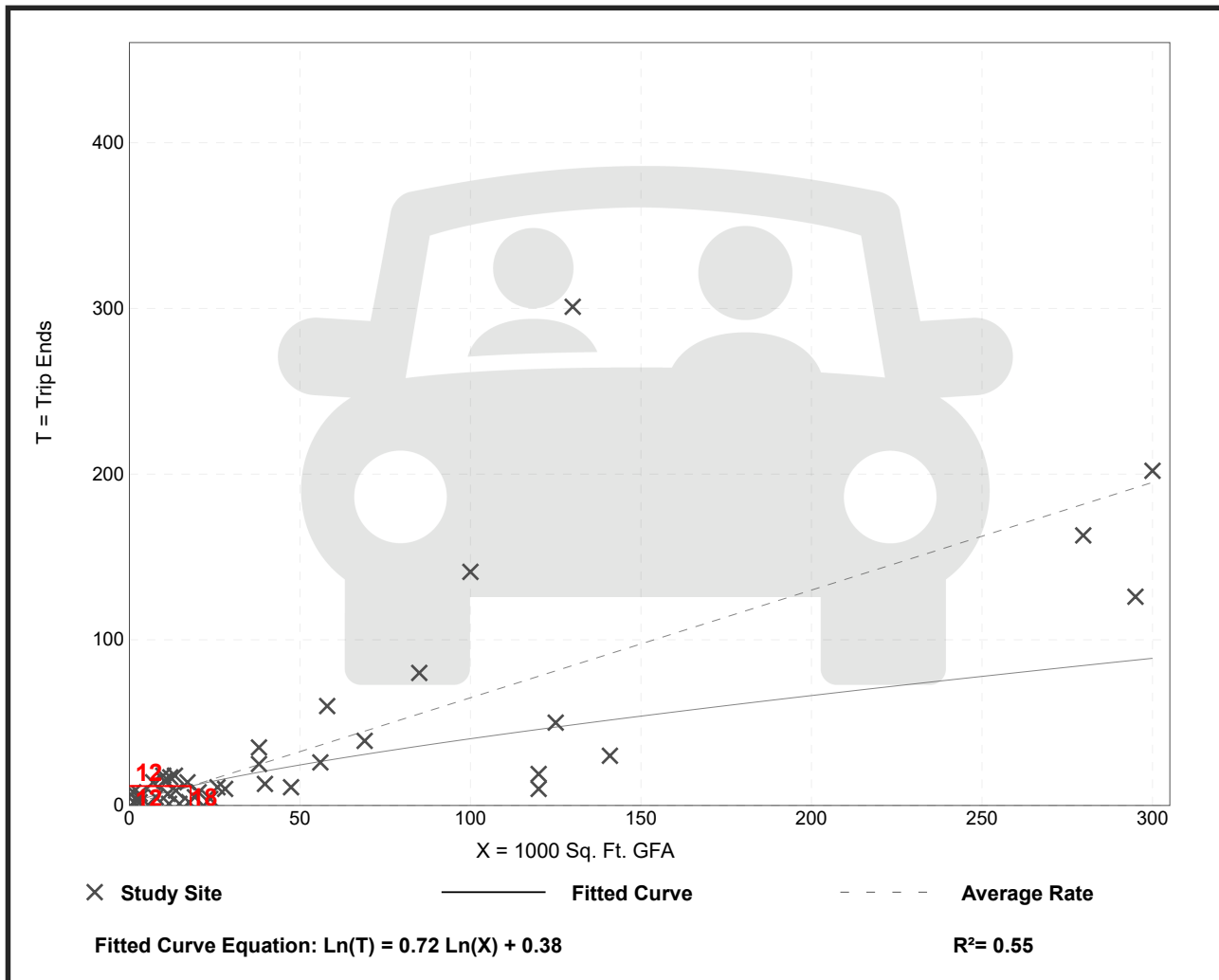
# General Light Industrial (110)

**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: 40  
 Avg. 1000 Sq. Ft. GFA: 58  
 Directional Distribution: 14% entering, 86% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.65	0.07 - 7.02	0.56

## Data Plot and Equation



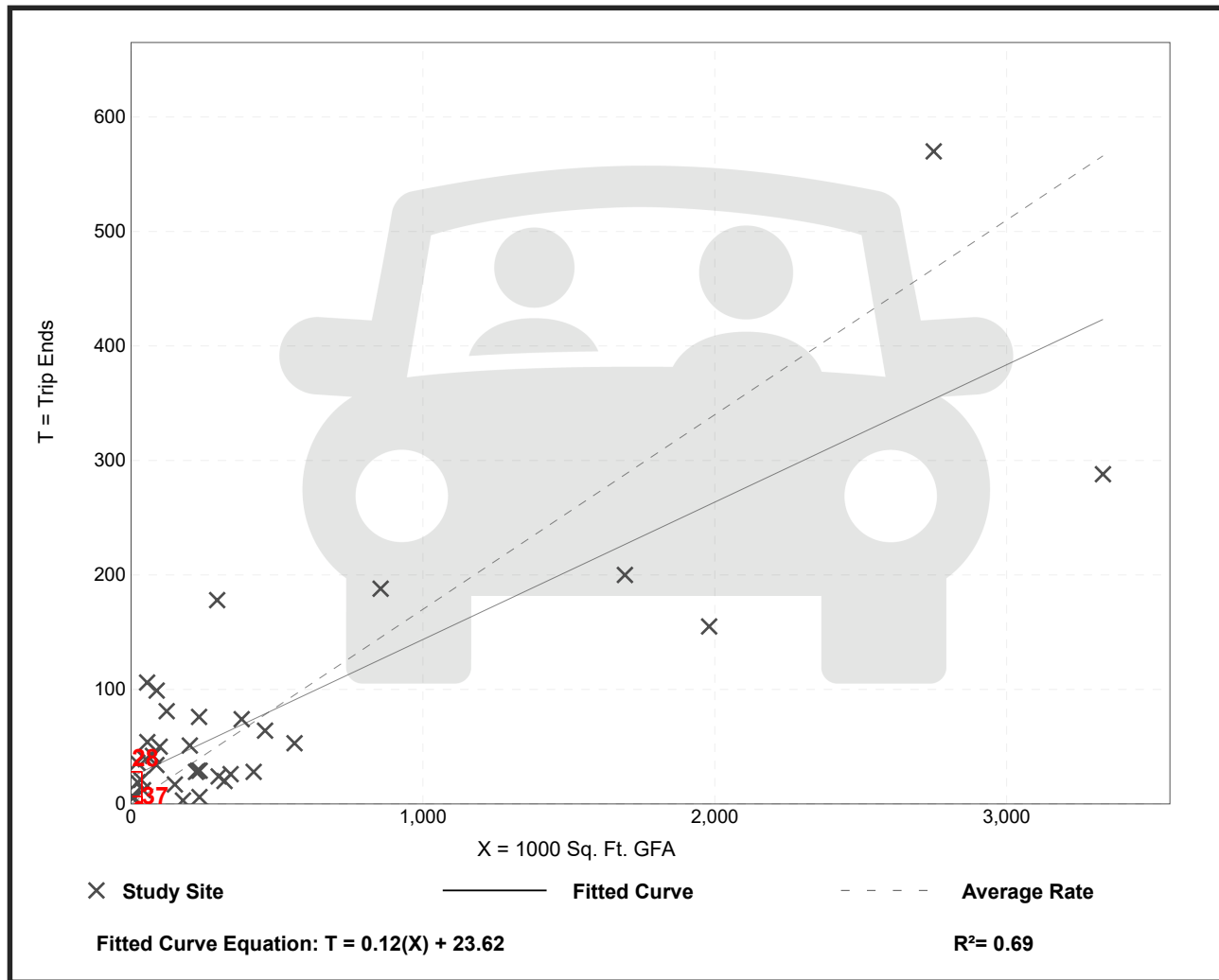
# Warehousing (150)

**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: 36  
 Avg. 1000 Sq. Ft. GFA: 448  
 Directional Distribution: 77% entering, 23% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.19

## Data Plot and Equation



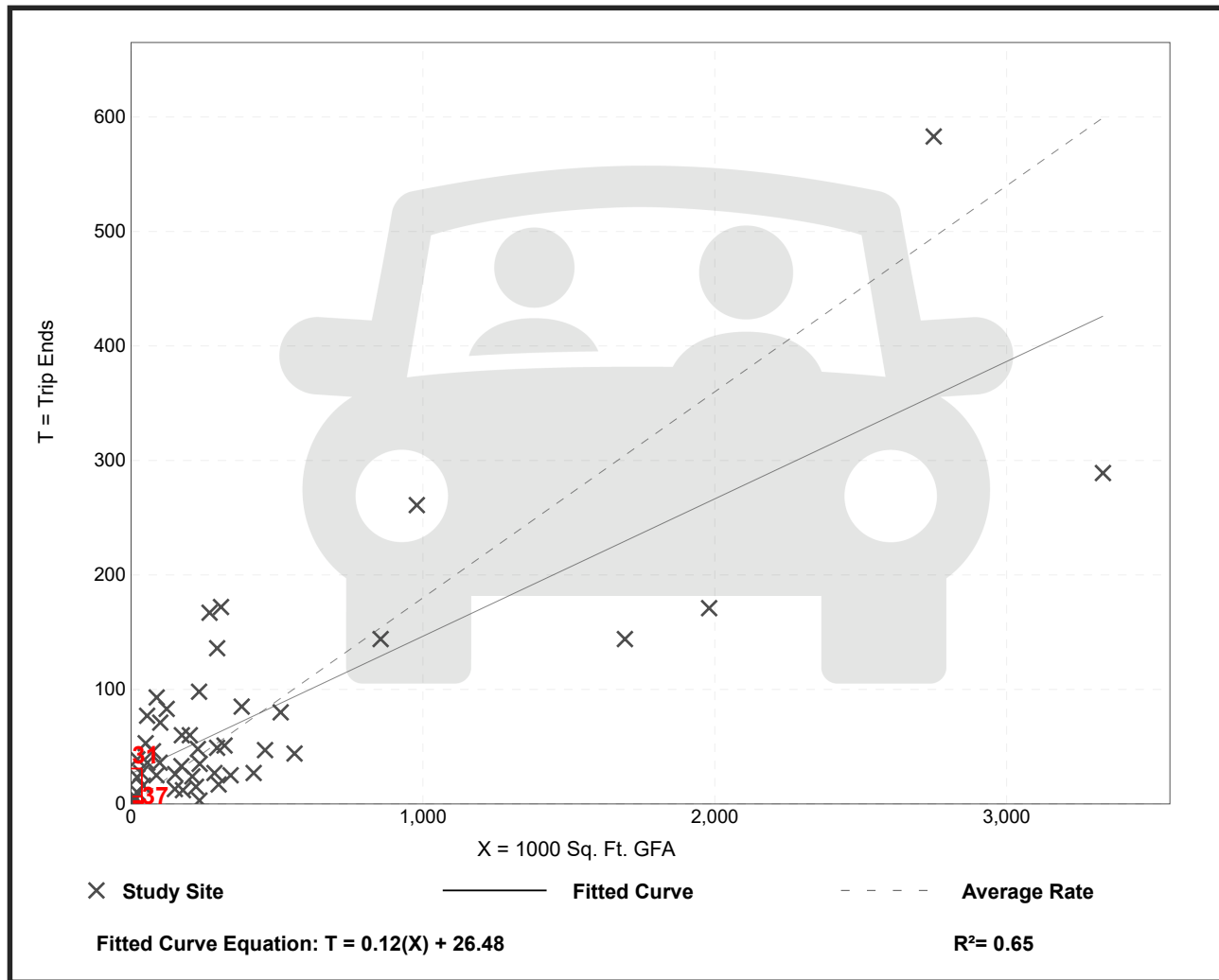
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**On a: Weekday,**  
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**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 49  
 Avg. 1000 Sq. Ft. GFA: 400  
 Directional Distribution: 28% entering, 72% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.18	0.01 - 1.80	0.18

## Data Plot and Equation



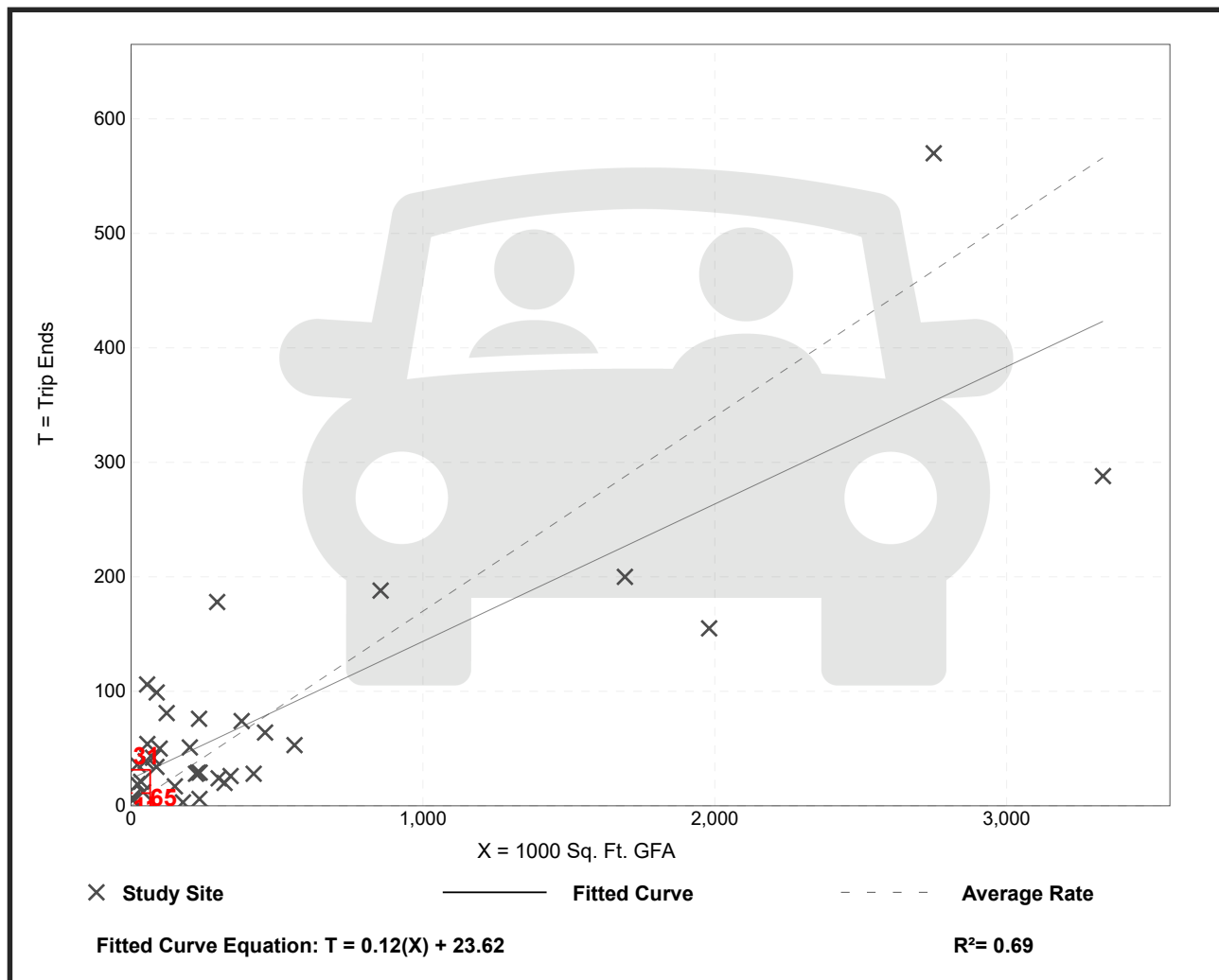
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