



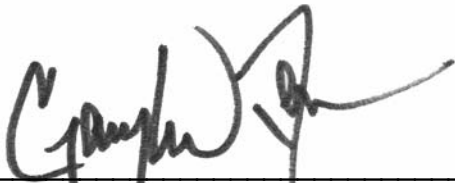
181 WEST HIGH STREET
SOMERVILLE, NJ 08876

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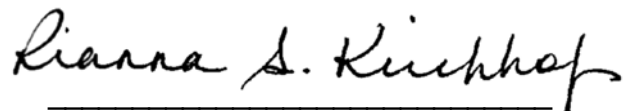
TRAFFIC IMPACT STATEMENT
FOR
PROPOSED WAREHOUSE EXPANSION

BLOCK 359, LOT 4.03
101 EAST 2ND STREET
CITY OF BAYONNE
HUDSON COUNTY, NEW JERSEY

OCTOBER 17, 2022



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RSK/RLK/lrc
Hudson/Bayonne/InSite-AmericanStone/Documents/2022-10-17 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 a proposed warehouse expansion on a site designated as Lot 4.03 in Block 359 in the City of Bayonne, Hudson County. The site is developed with an approximately 47,970 square foot warehouse operated by Mango USA. Access is provided via two garage door access on the westerly portion of the existing building along with head-in, covered parking on the eastern side of the building.

Under the development program, the building will be expanded to provide an additional 50,396 square feet of warehouse space for a total of 98,366 square feet. The existing garage door access will be eliminated and replaced with a full-movement driveway along the westerly property line to East Second Street.

D&D has been retained by the applicant to prepare a Traffic Impact Statement to address trip generation characteristics of the proposed expansion and to review access, on site circulation, parking, and loading.



EXISTING CONDITIONS

The site is designated as Lot 4.03 in Block 359 in the Heavy Industrial District (I-H Zone), where warehouses are a permitted use. The property is developed currently with a 47,970 square foot warehouse operated by Mango USA. Site access is provided via garage door access for trucks with passenger vehicle parking provided along the front of the building. The operation often requires the backing of trucks into the building from East Second Street. Surrounding land uses in the area include other industrial and warehouse developments, as shown in appended Figure 1.

East 2nd Street is a local roadway with a general east/west orientation and provides one travel lane each direction. The speed limit is not posted within the site vicinity and is assumed to operate under the statutory 25 MPH speed limit. Sidewalk with full height curb is provided both east and west of the subject property.

Along the site frontage, the concrete sidewalk is flush with the roadway with signage prohibiting parking along the northerly portion of the site frontage. Private on-street parking is posted on the southern side of East 2nd Street and on-street loading and trailer storage commonly occurs near the site.



TRAFFIC CHARACTERISTICS OF THE WAREHOUSE

Data compiled by the Institute of Transportation Engineers (ITE) is typically used to forecast trip generation for new development. Based on review of the 11th Edition of the ITE Trip Generation Manual, Land Use 150 – “Warehousing” is applicable to the development proposal. By ITE definition of small, ancillary office space is typically provided to support the warehouse operations, therefore, the ITE rates are applied to the total building area. Trip generation calculations are appended and summarized below.

TABLE I
TRIP GENERATION PROJECTIONS
98,366 SF WAREHOUSE

Vehicle Type	Morning Peak Hour			Evening Peak Hour			24-Hour Weekday		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Cars	26	7	33	8	27	35	67	66	133
Trucks	1	1	2	2	1	3	30	31	61
Total	27	8	35	10	28	38	97	97	194

As previously mentioned, the site is currently occupied by a 47,970 square foot building. Table II shows the overall traffic comparison between the existing building, the expanded building area, and the net traffic increases.

TABLE II
TRIP GENERATION COMPARISON

Warehouse Use	Size	Morning Peak Hour	Evening Peak Hour	Daily Traffic
Existing	47,970 SF	29	32	114
Proposed	98,366 SF	35	38	194
Traffic Increase		+6	+6	+80

As shown, the proposed expansion will generate minimal additional peak hour traffic with approximately one trip added to the roadway network every 10 minutes. Based on ITE data,



warehouse trip generation is steady throughout the day, with a lower concentration of trucks during the morning and evening peak hours. More truck trips are generated throughout the balance of the day when overall roadway and warehouse driveway volumes are lower.

In the ITE Manual of Transportation Engineering Studies, guidelines are provided for the preparation of traffic impact studies for new developments. The ITE recommends that traffic studies be performed when a development generates 100 or more trips during an hour. Similarly, the NJDOT State Highway Access Management Code defines “significant” traffic as 100 or more trips in an hour. The proposed development will generate fewer than 100 trips in any hour, and therefore the volume of traffic generated will produce a minimal impact on the adjacent roadway system.

As such, a detailed impact study is not needed to reach a reasonable conclusion that the proposed building expansion will not have a significant or measurable impact on roadway operations or traffic conditions near the site.



SITE PLAN REVIEW

The Site Plan prepared by Insite Engineering, LLC was reviewed with regard to site access, on-site circulation, parking, and loading.

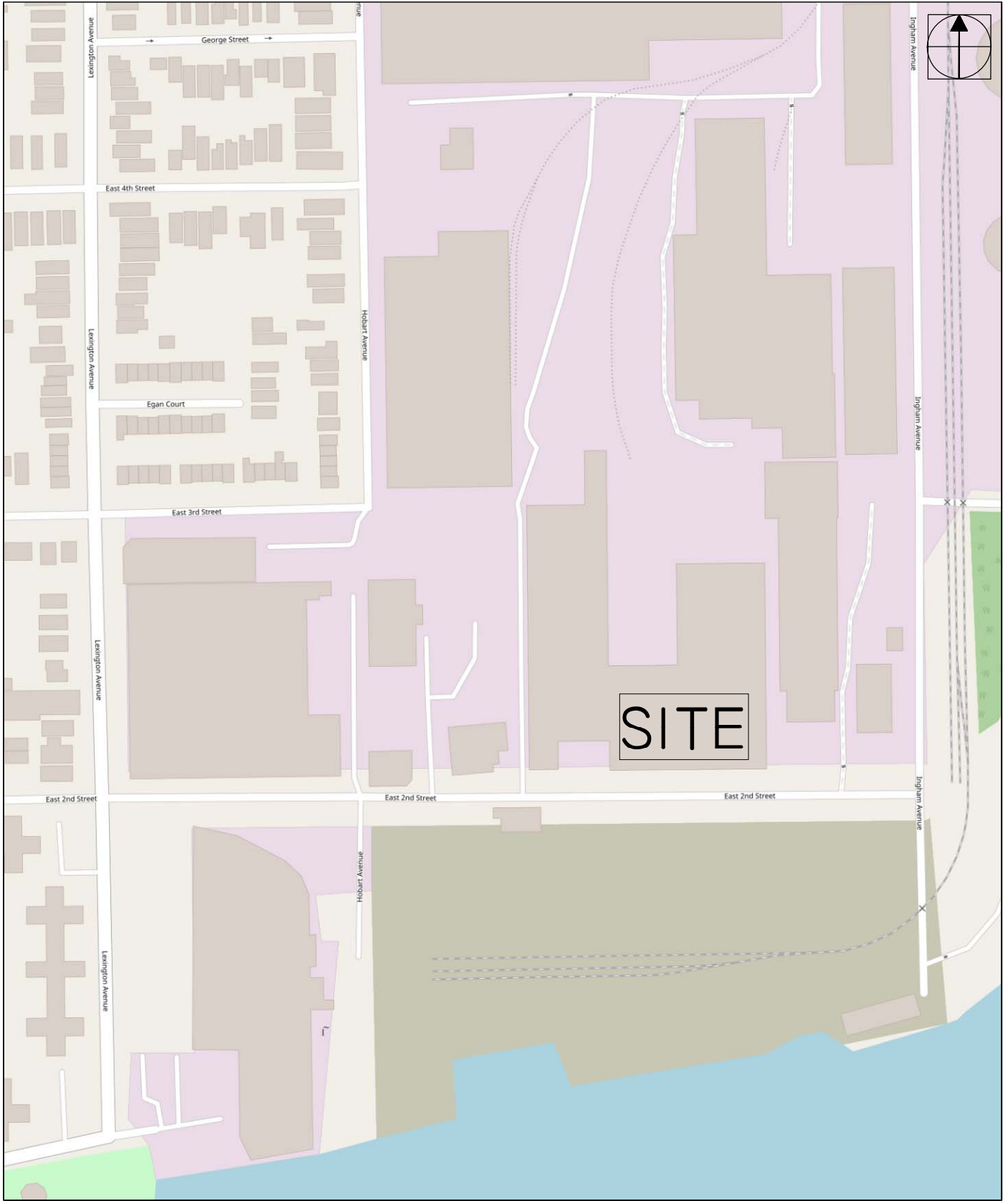
- Existing access is provided via two garage door along the westerly frontage of the building. The garage door access will be eliminated and replaced with a 33-foot-wide driveway along the westerly property line, allowing direct access to the parking fields, and loading docks at the rear of the site.
- The City requires 1 parking stall per 1,000 square feet of space for a total of 99 required parking stalls. With the application of the electric vehicle parking credit, the requirement is reduced to 89 parking stalls.
- Parking for 25 passenger vehicles is proposed on-site: 16 spaces are proposed at the front of the building and 9 spaces are proposed at the rear property line. Additionally, on-street parking is permitted and available along East 2nd Street.
- The site currently operates with a parking supply of 11 parking spaces (23% of the City Ordinance of 48). The proposal of an additional 14 spaces to serve the expansion is deemed sufficient and is proportional to the increase in building area. As the owner/applicant has established operations and procedures and the building expansion and on-site parking and circulation have been designed to align with Mango USA needs at this location.
- 7 loading docks are proposed on north side of the warehouse to accommodate tractor trailer activity.
- The site plan has been designed in accordance with recognized design guidelines, to promote safe and efficient ingress, egress and on-site circulation for passenger vehicles and tractor trailers.



- 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 and will have no detrimental impact on traffic conditions on the roads surrounding the site.



TECHNICAL APPENDIX



PROPOSED WAREHOUSE EXPANSION
 CITY OF BAYONNE
 HUDSON COUNTY, NEW JERSEY

FIGURE I



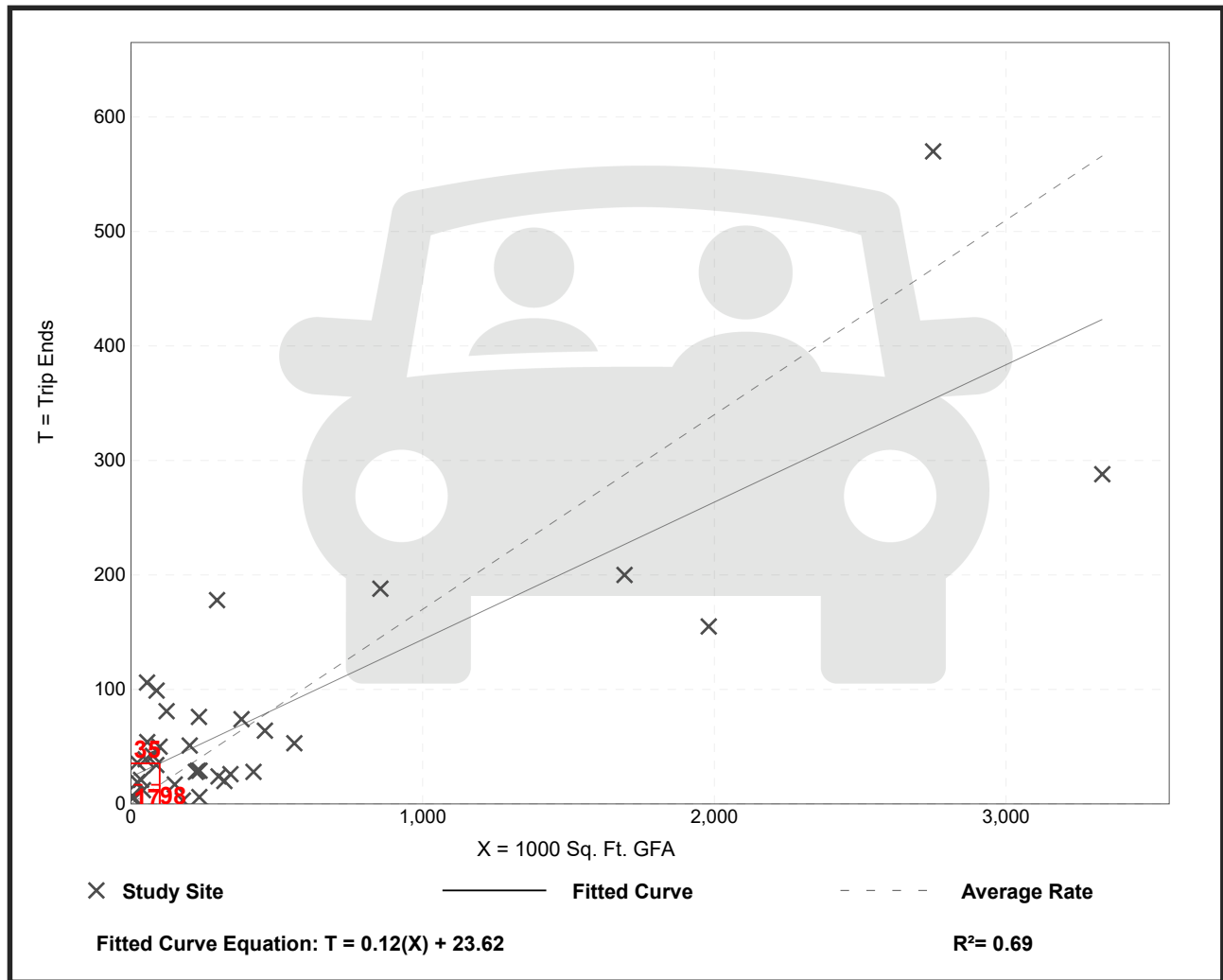
Warehousing (150)

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



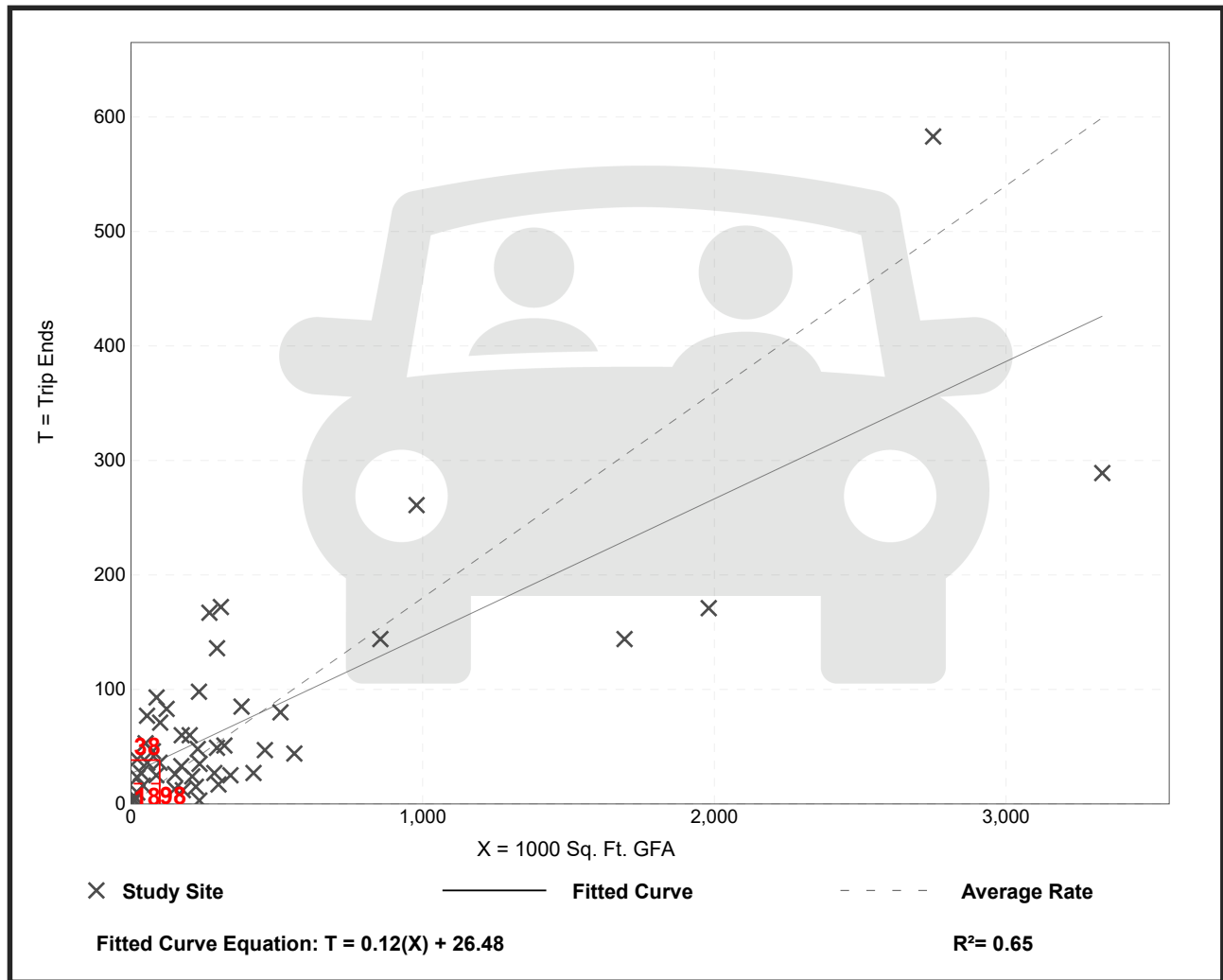
Warehousing (150)

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: 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



Warehousing (150)

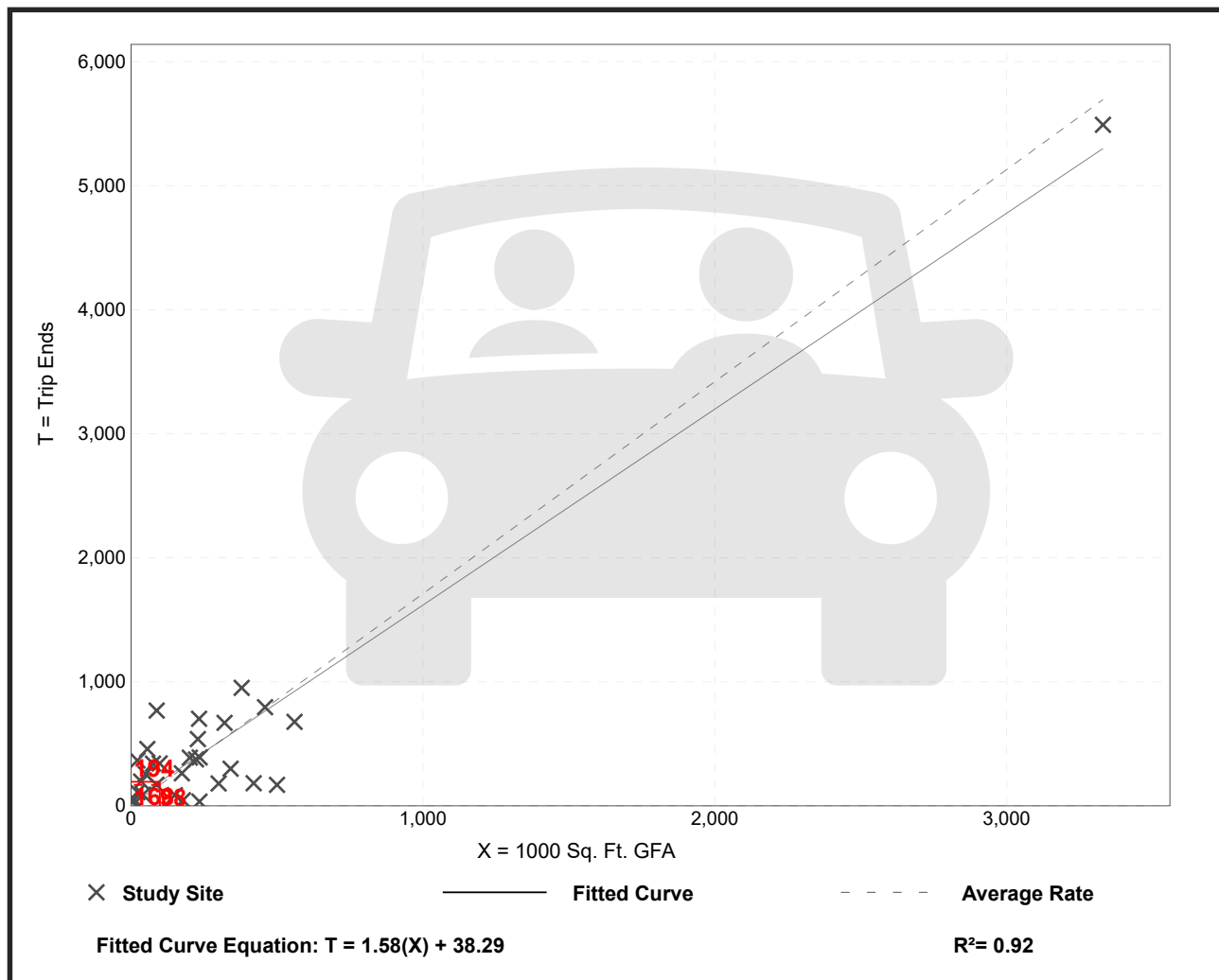
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. 1000 Sq. Ft. GFA: 292
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.71	0.15 - 16.93	1.48

Data Plot and Equation



Warehousing (150)

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

Setting/Location: General Urban/Suburban
Number of Studies: 12
Avg. 1000 Sq. Ft. GFA: 115
Directional Distribution: 50% entering, 50% exiting

Truck Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.60	0.00 - 6.66	0.86

Data Plot and Equation

