Shropshire Associates LLC

SBE Certified

Traffic Engineering, Transportation Planning & Design

277 White Horse Pike, Suite 203, Atco, NJ 08004
P: 609-714-0400 F: 609-714-9944 www.sallc.org

David R. Shropshire, PE, PP
A Andrew Feranda, PE, PTOE, CME
Randal C. Barranger, PE
Nathan B. Mosley, PE, CME

February 19, 2025

Mr. Michael Pagnotta (via email: mpagnotta@gmail.com)
Fortuna Park, LLC & Sole Member Nautilus
Custom Construction, LLC
342 West 9th Street
Ship Bottom, NJ 08008

Re: **Trip Generation Analysis Letter**
Fortuna Park
Ship Bottom, Ocean County, NJ
SA Project No. 24033-B

Dear Mr. Pagnotta:

In response to your request, Shropshire Associates, LLC prepared this Trip Generation Analysis Letter to evaluate the above residential development along eastbound 19th Street in the Borough of Ship Bottom, Ocean County, New Jersey. This letter is to supplement the previous Traffic Engineering Assessment dated April 25, 2024, which was for the construction of 27 single-family homes.

The current proposal is for the construction of 21 new single-family homes along eastbound 19th Street, northbound E. Bay Terrace, and westbound 20th Street. Access to each home will be provided via individual driveways and curb cuts along these roadways.

Existing Conditions

Along the site's frontage, **19th Street** is a two-lane undivided local roadway that is under the jurisdiction of the Borough of Ship Bottom. 19th Street has a posted speed limit of 25 MPH and an approximate cartway width of 32'. For the purpose of this study, 19th Street is assumed to extend in a general east-west direction.

Along the site's frontage, **20th Street** is a two-lane undivided local roadway that is under the jurisdiction of the Borough of Ship Bottom. 20th Street has a posted speed limit of 25 MPH and an approximate cartway width of 42'. For the purpose of this study, 20th Street is assumed to extend in a general east-west direction.

Along the site's frontage, **E. Bay Terrace** is a two-lane undivided local roadway that is under the jurisdiction of the Borough of Ship Bottom. E. Bay Terrace has an assumed speed limit of 25 MPH and an approximate cartway width of 24'. For the purpose of this study, E. Bay Terrace is assumed to extend in a general north-south direction.

Trip Generation

The amount of traffic to be generated by the proposed residential development can best be estimated by using data published by the Institute of Transportation Engineers (ITE). ITE has compiled data from thousands of studies for various land uses, independent variables, and

study periods and published the results in *Trip Generation, 11th Edition.* The development is most similar to ITE Land Use 210: Single-Family Detached Housing. The total amount of traffic generated by the proposed residential development is summarized below in Table 1 and the detailed summary sheets are attached for your review.

Table 1
ITE Trip Generation

Development	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Single-Family Detached Housing (21 Homes)	5	13	18	14	9	23

Trip Generation Comparison

As noted above, the previous application was for 27 single-family homes. The current proposal is for 21 single-family homes. A trip generation comparison between the previously proposed development and currently proposed development has been prepared. Table 2 shows the peak hour traffic to be generated by the previous development as compared to the proposed development utilizing the current ITE trip generation rates.

Table 2
ITE Trip Generation Comparison

Development	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Previously Proposed Development						
Single-Family Detached Housing (27 Homes)	6	17	23	18	11	29
Currently Proposed Development						
Single-Family Detached Housing (21 Homes)	5	13	18	14	9	23
Difference						
Difference	**-1**	**-4**	**-5**	**-4**	**-2**	**-6**

As noted above in Table 2, when compared to the previously proposed development, the currently proposed residential development will generate approximately 5 less trips during the weekday AM peak hour and 6 less trips during the weekday PM peak hour.

Conclusion

Based on the reduction in trip generation related to the reduction in the number of single-family homes proposed for development, the traffic generated by the proposed residential development will have a minimal impact on the adjacent roadway network. The following conclusions from our April 25, 2024 Traffic Engineering Assessment continue to be valid.

- Under the future Build conditions, the traffic resulting from the proposed residential development will cause minimal changes in the future levels of service at the Central Avenue and 19th Street stop-controlled intersection. All individual movements will continue to operate at a LOS B or better during both the AM and PM peak hours.

- Under the future Build conditions, the traffic resulting from the proposed residential development will cause no changes in the future levels of service at the Central Avenue and 20th Street stop-controlled intersection. All individual movements will continue to operate at existing levels of service during both the AM and PM peak hours.

- Under the future Build conditions, the traffic resulting from the proposed residential development will cause no changes in the future levels of service at the 19th Street and E. Bay Terrace stop-controlled intersection. All individual movements will continue to operate at existing levels of service during both the AM and PM peak hours.

- Under the future Build conditions, the traffic resulting from the proposed residential development will cause no changes in the future levels of service at the E. Bay Terrace and 20th Street stop-controlled intersection. All individual movements will continue to operate at existing levels of service during both the AM and PM peak hours.

- Under the future Build conditions, the traffic resulting from the proposed residential development will cause no changes in the future levels of service at the Barnegat Avenue and 19th Street stop-controlled intersection. All individual movements will continue to operate at existing levels of service during both the AM and PM peak hours.

- The outbound driveway approaches and left-turn movements entering the driveways will operate at a LOS A during both the AM and PM peak hours.

- Based on the levels of service presented in this Traffic Engineering and Air Quality Assessment report and the NJDEP protocol, dispersion modeling is not required for any of the study locations. Therefore, no further improvements are required at the study locations due to air quality conditions.

Please call us if you have any questions or require additional information.

Sincerely,
Shropshire Associates LLC

David R. Shropshire, P.E., P.P.
Professional Engineer
N.J. License No. #33943

Christopher R. Campbell, P.E.
Professional Engineer
N.J. License No. #61090

DRS/jab
Attachments

cc: Kara Schultz (via email: karaschultzlegal@yahoo.com)
Nicholas F. Talvacchia (via email: ntalvacchia@cooperlevenson.com)
Benjamin P. Ojserkis (via email: bojserkis@cooperlevenson.com)

OCEAN COUNTY 89 (South to North)

Mile Posts: 0.000 - 2.000

Pavement

Shoulder

Number of Lanes

Speed Limit

Street Name

Interstate Route

US Route

NJ Route

County Road

Interchange Number

Grade Separated Interchange

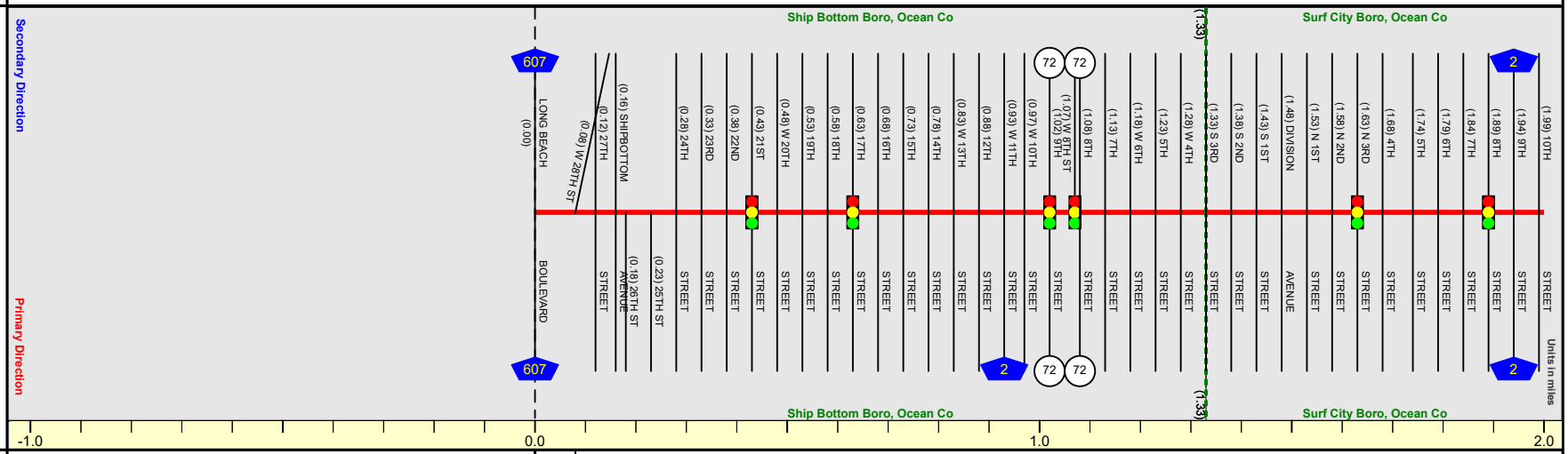
Traffic Signal

Traffic Monitoring Sites (WIM, AVC, VOL)

Road Underpass

Road Overpass

Dyn Msg Sign (DMS)



Street Name	West 28th Street — Central Avenue
Jurisdiction	County
Functional Class	Urban Local
Federal Aid - NHS Sy	Non-Federal Aid
Control Section	
Speed Limit	99 — 35
Number of Lanes	1 — 2 — 3 — 2
Med. Type	None
Med. Width	
Pavement	32 — 24 — 40 — 36 — 24
Shoulder	8 — 12 — 12
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

Begin Ocean County 89 MP=0.00

SRI = 15000089__

Date last inventoried: September 2011

Page Created: June, 2020

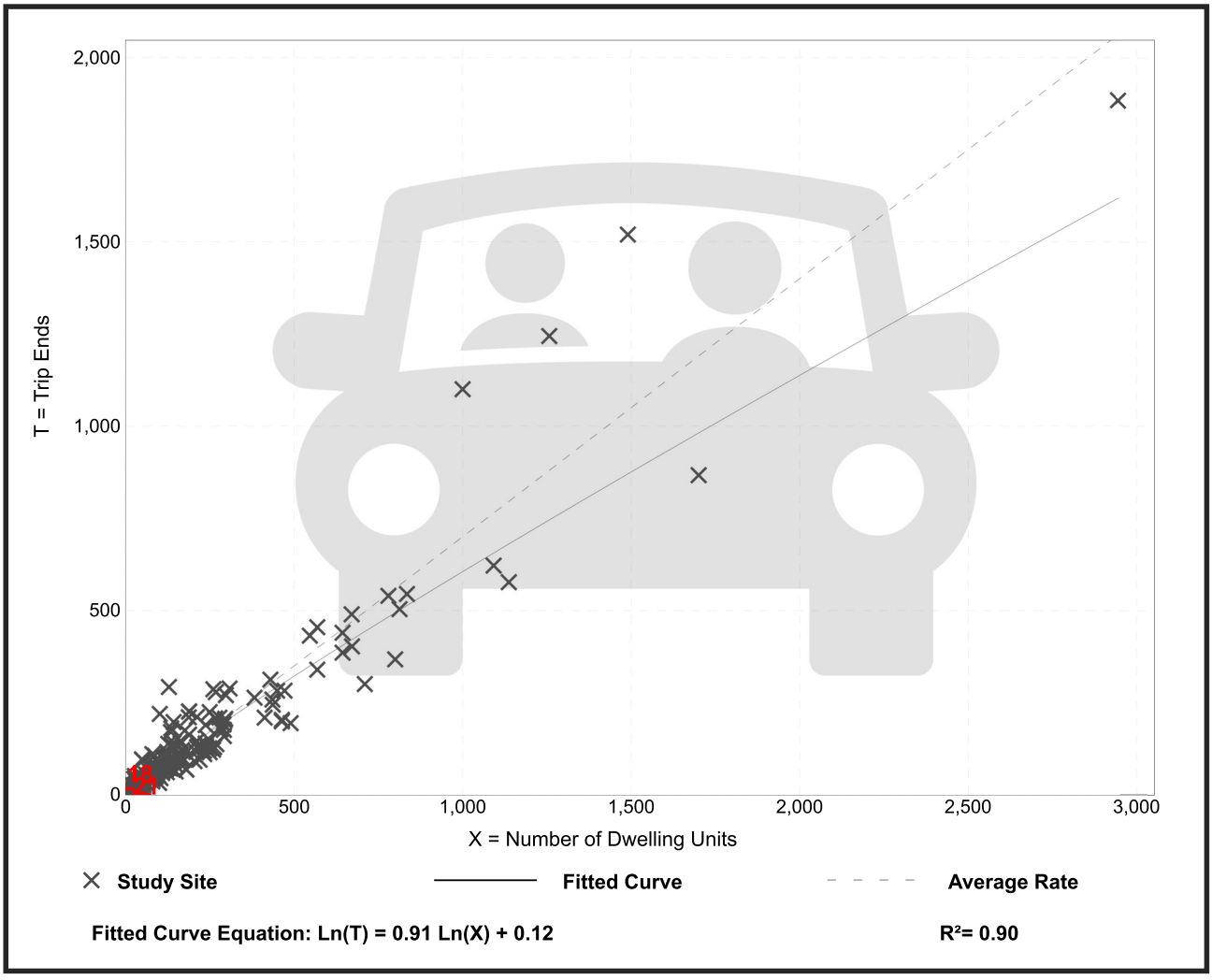
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
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:	192
Avg. Num. of Dwelling Units:	226
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



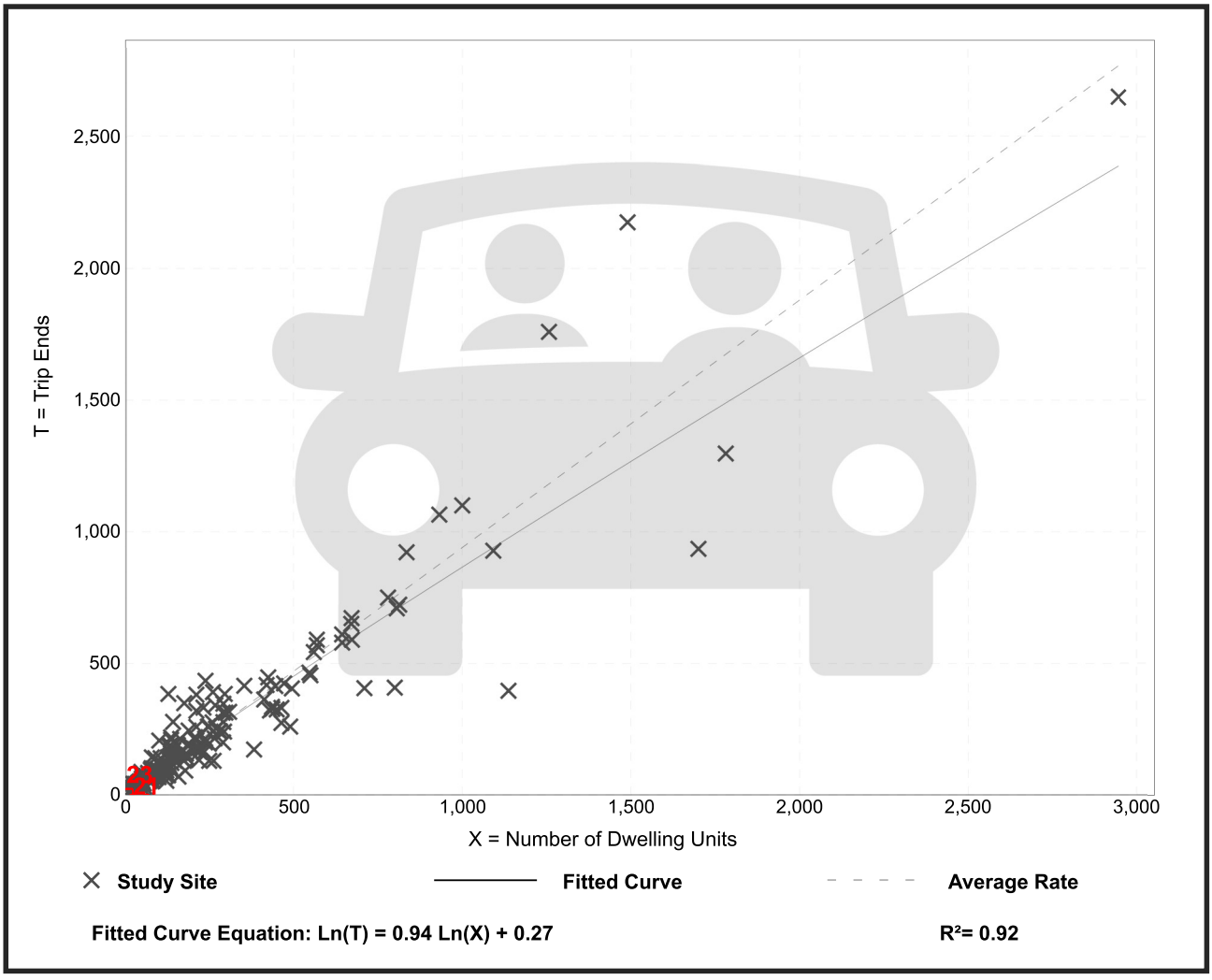
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
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: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



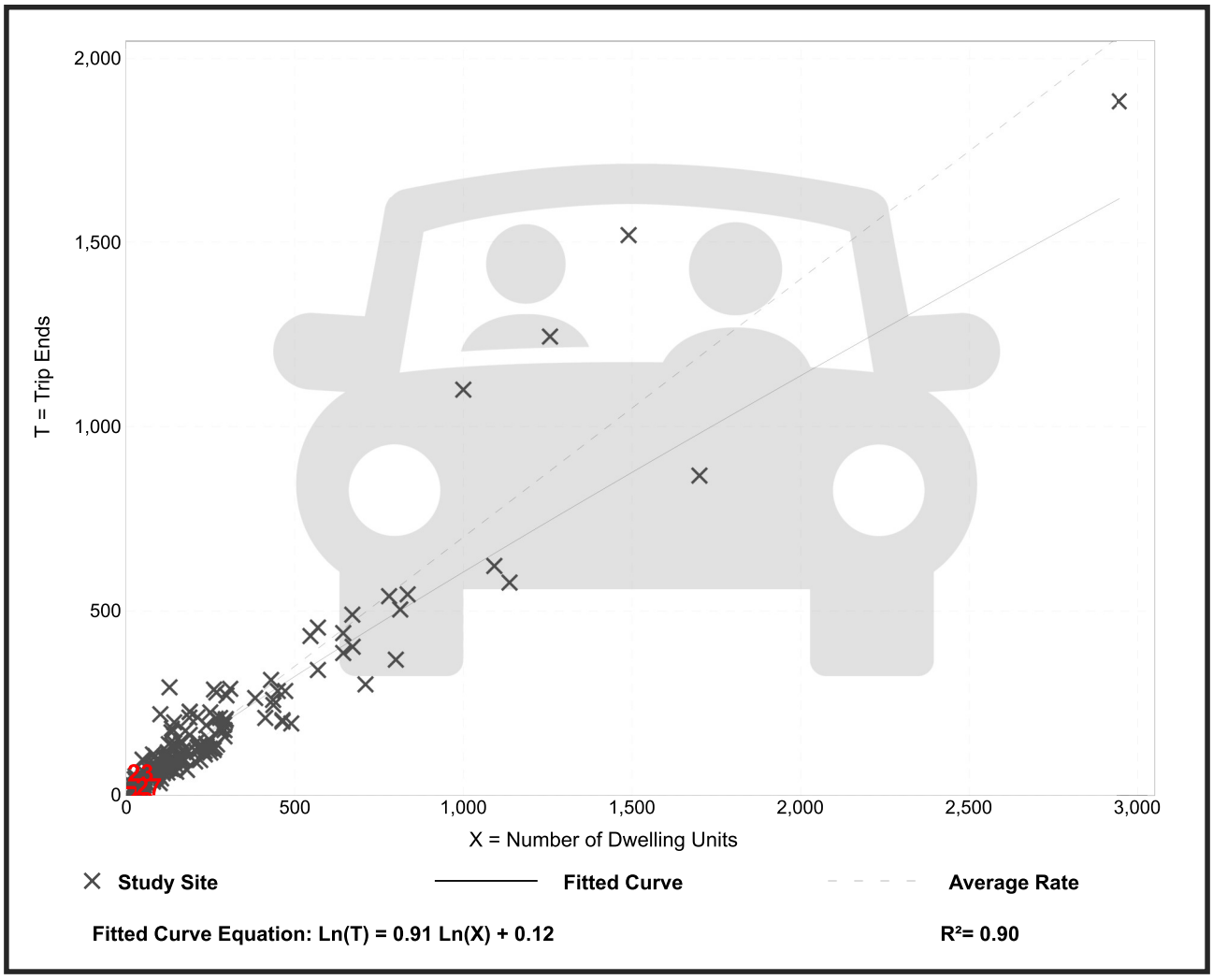
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
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:	192
Avg. Num. of Dwelling Units:	226
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
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: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation