

February 19, 2021

Bergenfield Zoning Board of Adjustment
Bergenfield Municipal Building
198 N. Washington Avenue
Bergenfield, NJ 07621

**Reference: Second Supplemental Traffic & Parking Assessment
Multi-Family Residential Development
145 W Main Street
Bergenfield, NJ
Block 106, Lots 6.01, 6.02, 6.03**

Dear Members of the Board:

Based on the previous hearings and the revised proposed site plan, we offer the following additional information/analysis:

1. Proposed vehicle Trip Generation: Institute of Transportation Engineers (ITE) Trip Generation Backup from the ITE Trip Generation Manual (10th Edition).
2. Overnight Parking regulations along W Main Street.
3. Google Earth Photo – Driveway Pedestrian Signal (309 Gorge Rd, Cliffside Park, NJ).
4. Historic Hourly Traffic data to identify Peak Hours Only.

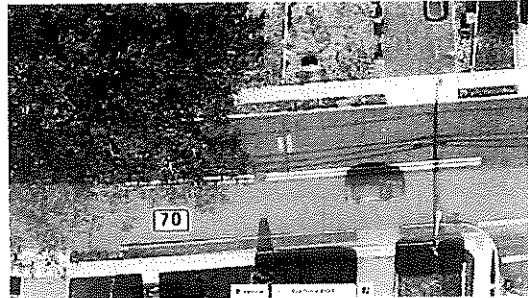
1. **Proposed Vehicle Trip Generation – Attachment A** contains ITE Land Use descriptions of Multifamily Housing (Low-Rise) and Single-Family Detached Housing, along with the estimated vehicle trip generation for the AM, PM, and Saturday Peak Hours for the Adjacent Street Traffic. When the Board and the Public inspects this information, please keep in mind that ITE Trip Generation data is the industry standard methodology utilized by NJDOT, Bergen County, and all planning agencies. In general, the "Setting/Location" utilized is "General Urban/Suburban" and the "Dense Multi-Use Urban" is a recent additional data set available, however, many land use groups either do not have data or there is insufficient number of studies.

	AM Peak Hour Trips	PM Peak Hour Trips	SAT Peak Hour Trips
16 Units	8	12	11
14 Units	7	10	10
3- SF Homes	7	4	21



**Re: Second Supplemental Traffic & Parking Assessment
Multi-Family Residential Development
145 W Main Street**

2. **Overnight Parking** – West Main Street, along the proposed site frontage, is classified as Bergen County 70. I placed a call into Bergen County Planning to confirm if on-street parking is allowed. A representative of the Bergen County Planning Department informed me that the County allows the municipality to dictate on-street parking regulations, including enforcement, however, if there is a safety issue the County would review.



In a closer look at W Main Street, this two-way County roadway provides one travel lane in each direction and the westbound travel lane is 14' wide. A travel lane can vary in width from 20' down to 12' but not less than 11'. Although there are no signs or text in the municipal code prohibiting parking along the north side of W Main Street, allowing a travel lane with parking would create, or is creating, an unsafe condition. A parking lane requires 7' min with 11' min travel lane, and this roadway width just does not exist. Parking does occur along W Main Street, however, parking on the sidewalk is not a safe condition.



3. **Google Earth Photo – Attachment B** Driveway Pedestrian Signal (309 Gorge Rd, Cliffside Park, NJ) attached.

W Main Street (Bergen County 70)		
West Main Street	North	From Veterans Plaza easterly to the east
West Main Street	North and South	From North Front Street and running we
West Main Street	South	From South Prospect Avenue easterly to
West Main Street	South	From South Vivyen Street to South Que
West Main Street	South	From South Washington Avenue easterly
Bergenfield On Street Parking Regulations		

4. **Historic Hourly Traffic Data** – Attachment C contains historic hourly traffic data collected by NJDOT to identify the AM and PM Peak Hours.

Sincerely,

Louis J. Luglio, P.E.
lluglio@samschwartz.com

Copy: Matthew Capizzi, Esq., matthew@capizzilaw.com

Attachments: Attachment A – Trip Generation
Attachment B – Google Earth Photo
Attachment C – Historic Hourly Traffic Volume Data

ATTACHMENT

A

ITE Trip Generation

Land Use: 220

Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors). Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and off-campus student apartment (Land Use 225) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively. For the one site with Saturday data, the overall highest vehicle volume was counted between 9:45 and 10:45 a.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 11:45 a.m. and 12:45 p.m.

For the one dense multi-use urban site with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 6:15 and 7:15 p.m., respectively.

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

The average numbers of person trips per vehicle trip at the five general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.13 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.21 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, District of Columbia, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Minnesota, New Jersey, New York, Ontario, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington.

It is expected that the number of bedrooms and number of residents are likely correlated to the number of trips generated by a residential site. Many of the studies included in this land use did not indicate the total number of bedrooms. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

168, 187, 188, 204, 211, 300, 305, 306, 319, 320, 321, 357, 390, 412, 418, 525, 530, 571, 579, 583, 864, 868, 869, 870, 896, 903, 918, 946, 947, 948, 951

Multifamily Housing (Low-Rise) (220)

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: 42

Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.46

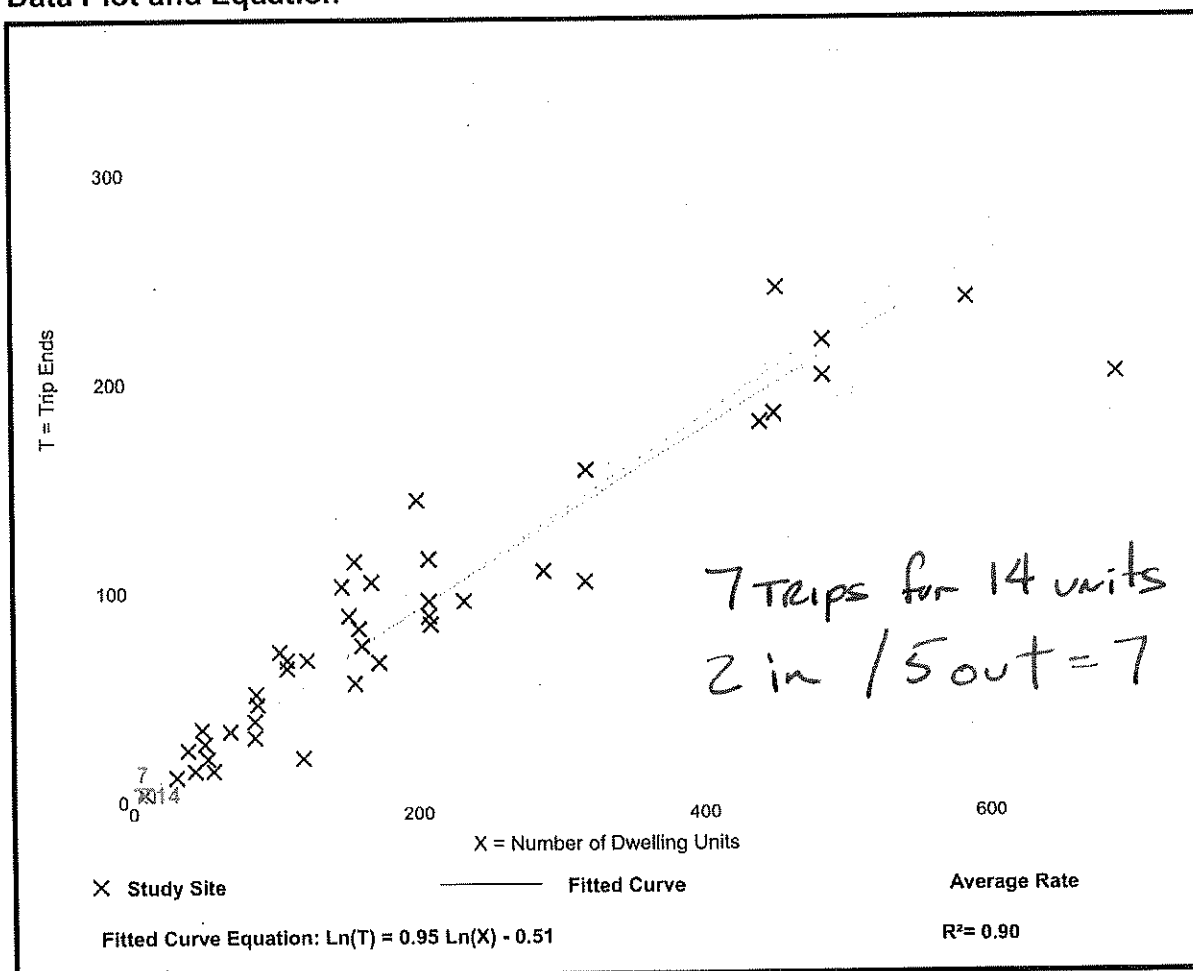
Range of Rates

0.18 - 0.74

Standard Deviation

0.12

Data Plot and Equation



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Multifamily Housing (Low-Rise) (220)

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: 50

Avg. Num. of Dwelling Units: 187

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.56

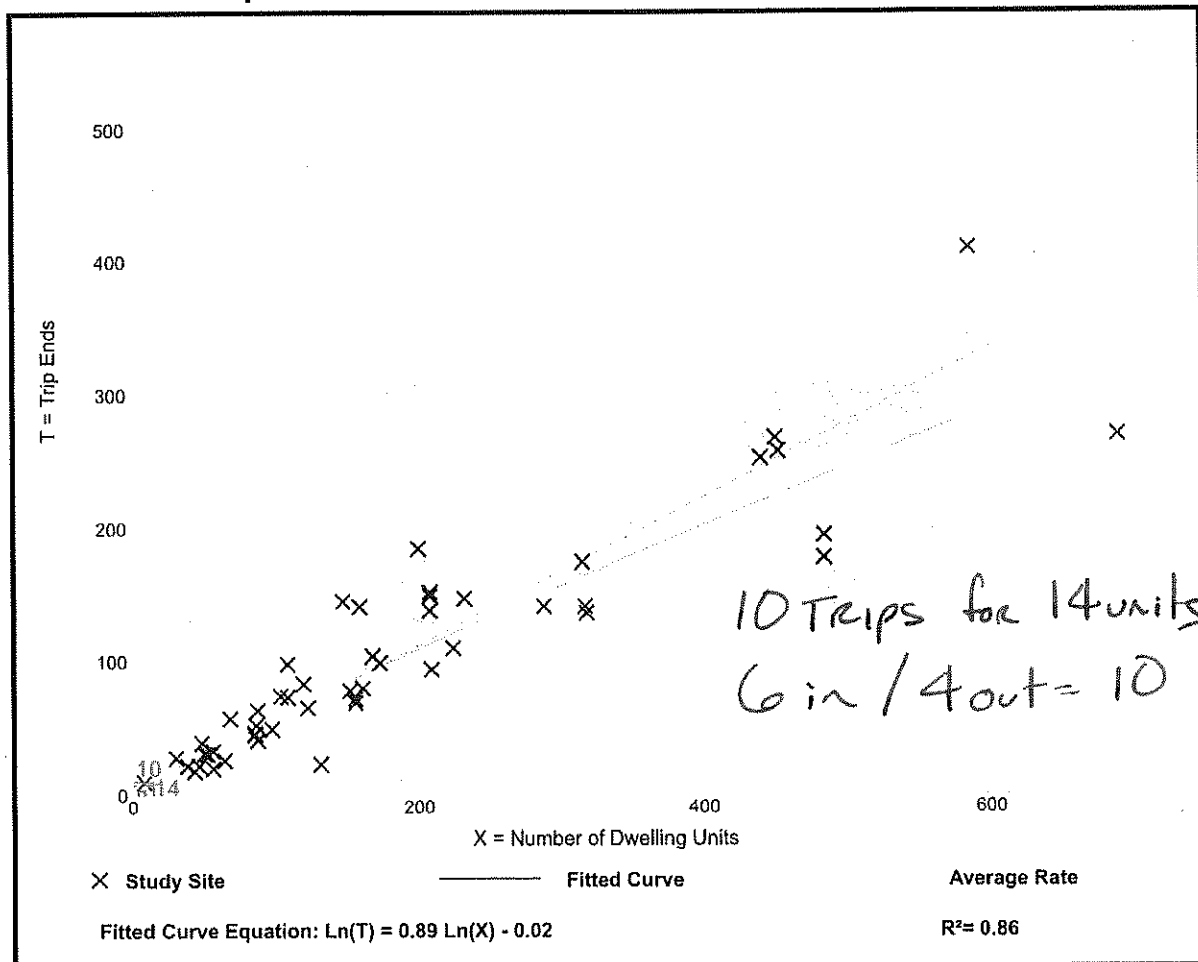
Range of Rates

0.18 - 1.25

Standard Deviation

0.16

Data Plot and Equation



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Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 89
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.70

Range of Rates

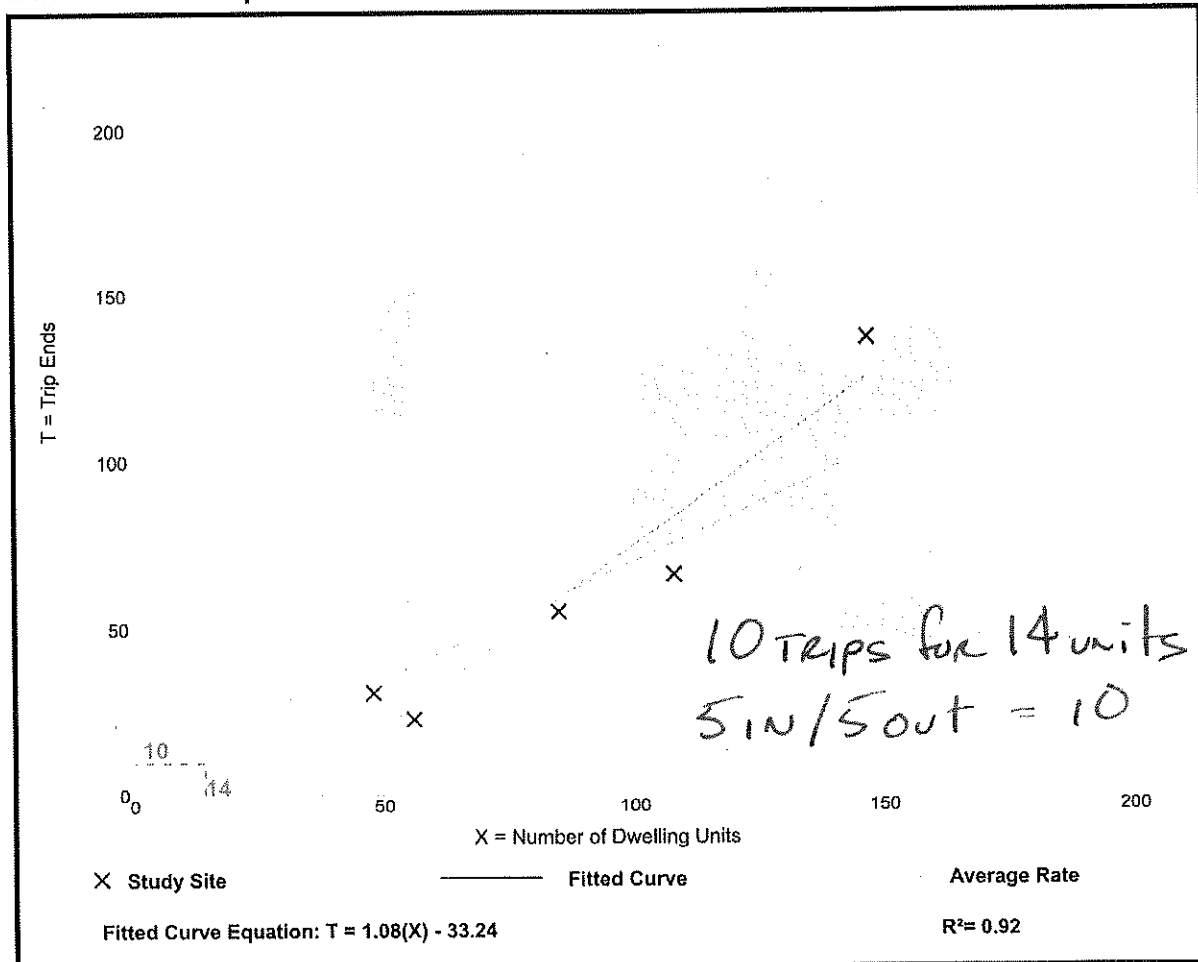
0.41 - 0.93

Standard Deviation

0.20

Data Plot and Equation

Caution – Small Sample Size



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Land Use: 210

Single-Family Detached Housing

Description

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Additional Data

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project, and had a high correlation with average weekday vehicle trip ends.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas, and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

Time-of-day distribution data for this land use are presented in Appendix A. For the six general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:00 and 5:00 p.m., respectively. For the two sites with Saturday data, the overall highest vehicle volume was counted between 3:00 and 4:00 p.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 10:15 and 11:15 a.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Delaware, Illinois, Indiana, Maryland, Minnesota, Montana, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, and Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 903, 925, 936

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: 173

Avg. Num. of Dwelling Units: 219

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.74

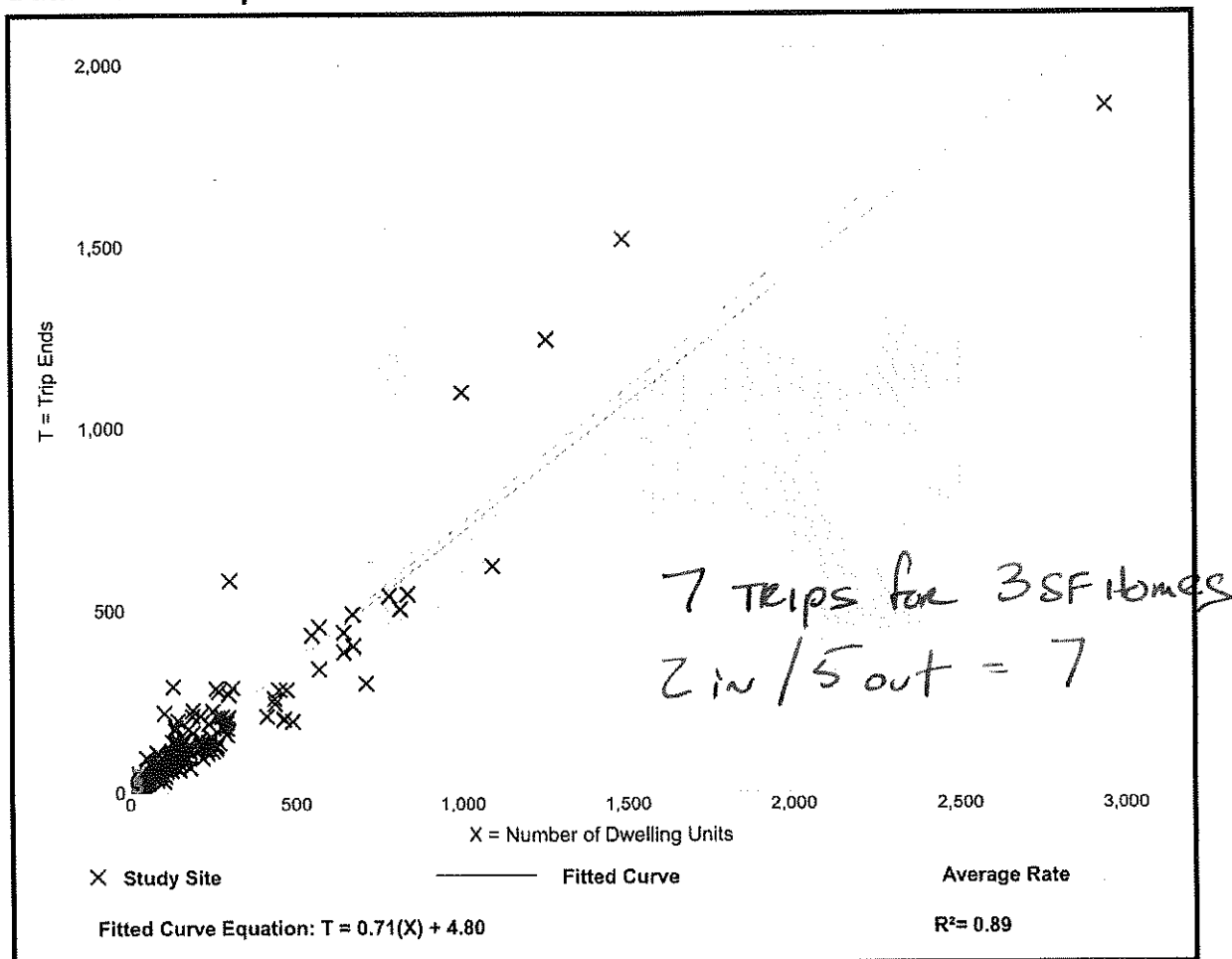
Range of Rates

0.33 - 2.27

Standard Deviation

0.27

Data Plot and Equation



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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: 190

Avg. Num. of Dwelling Units: 242

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.99

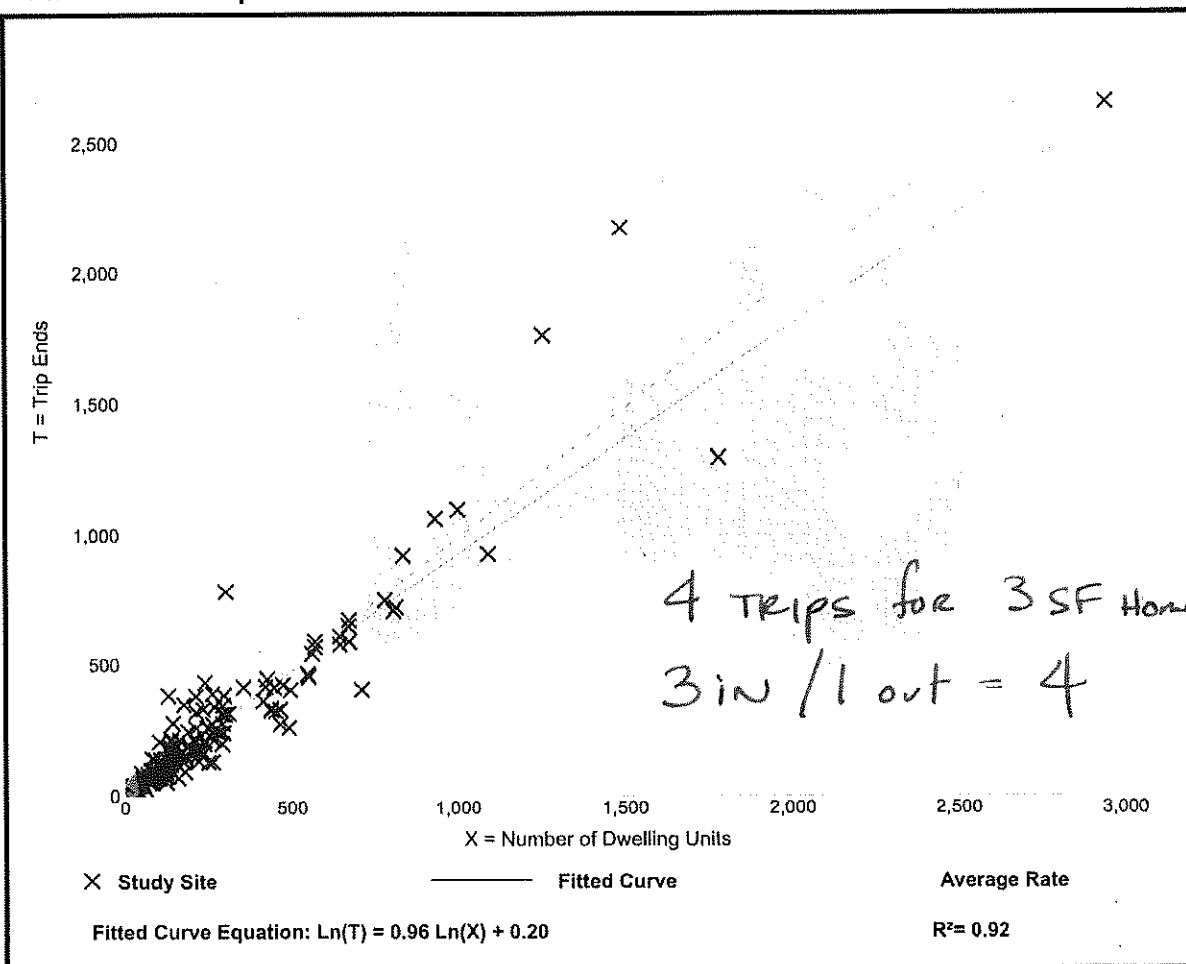
Range of Rates

0.44 - 2.98

Standard Deviation

0.31

Data Plot and Equation



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Single-Family Detached Housing (210)

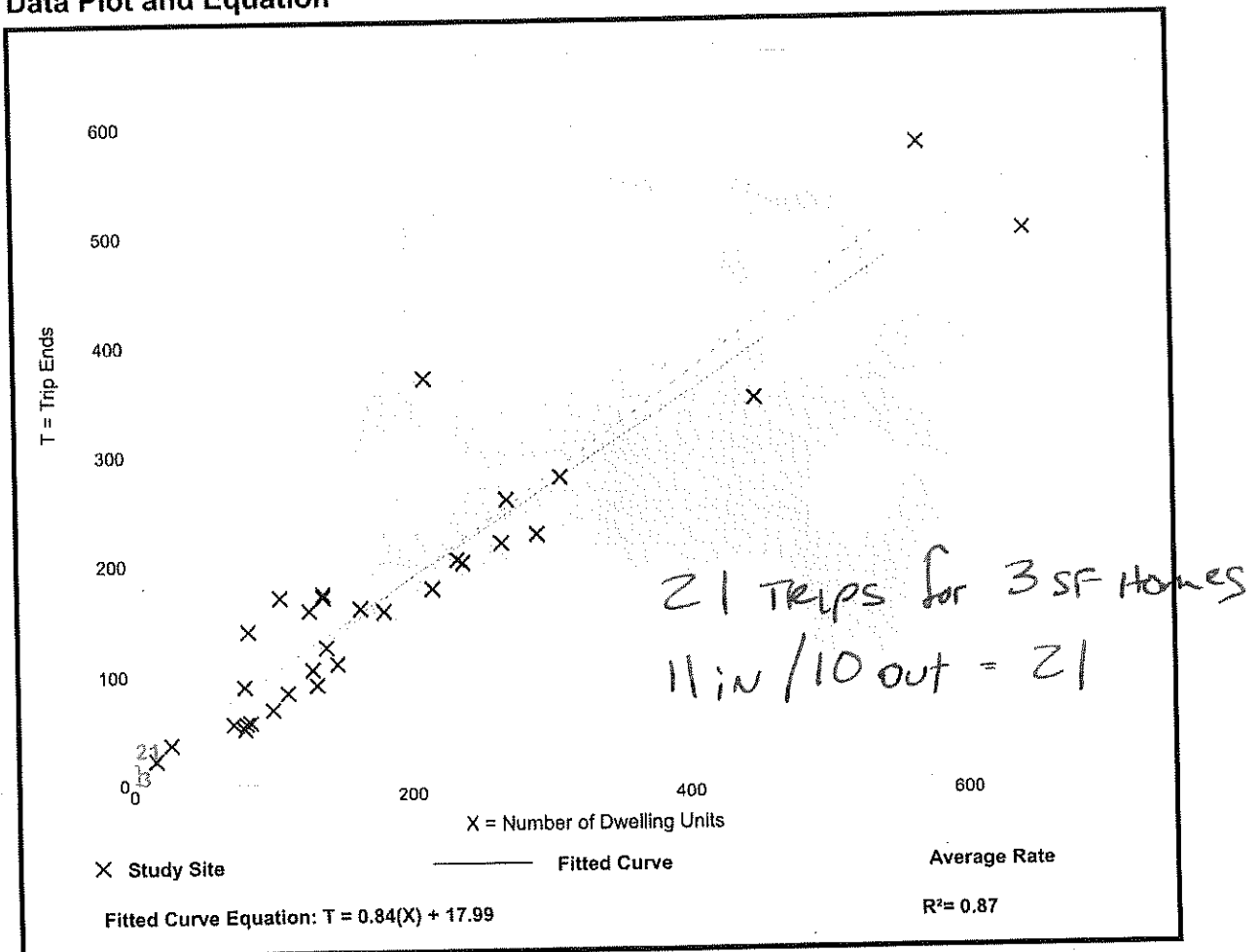
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 188
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.64 - 1.75	0.26

Data Plot and Equation

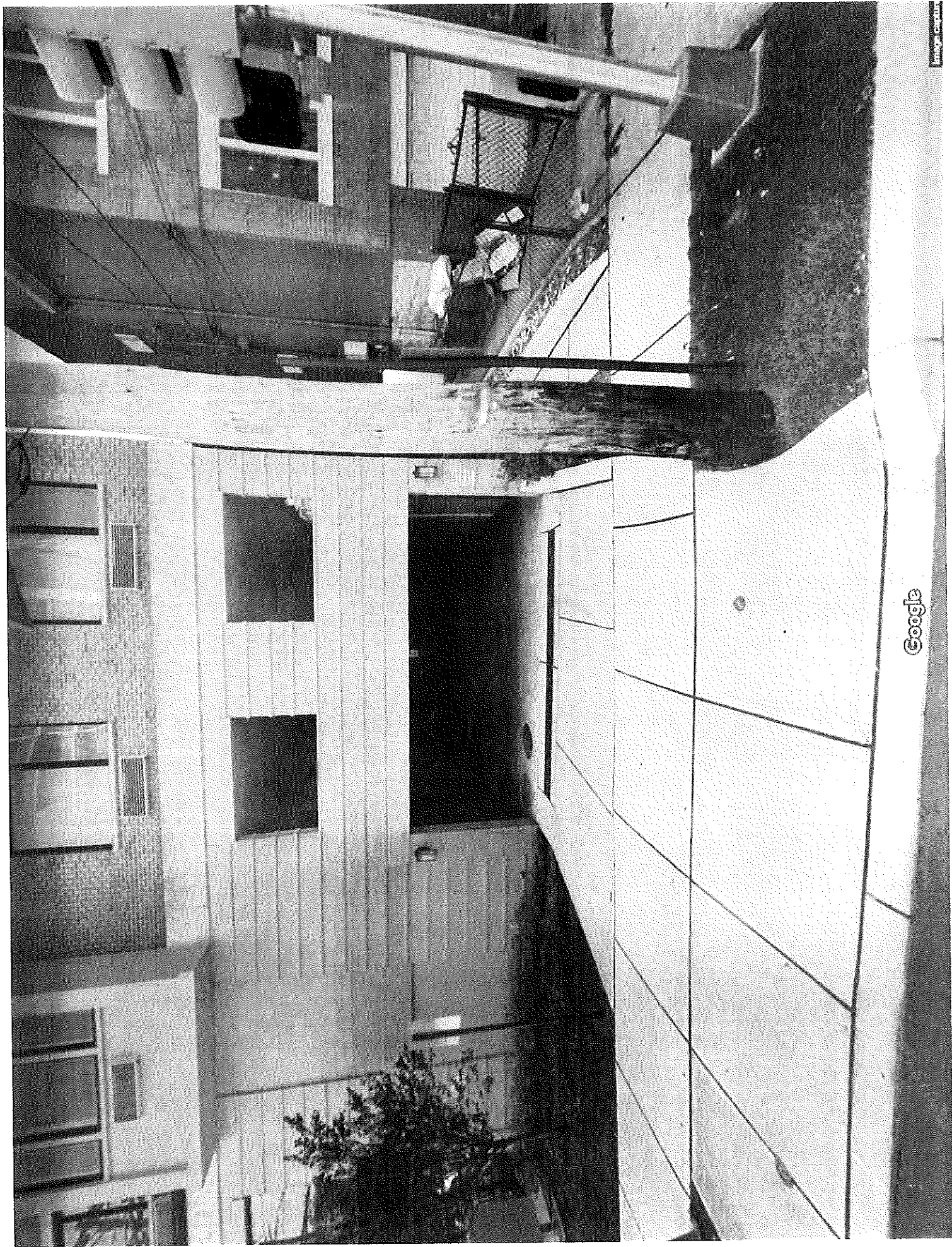


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ATTACHMENT

B

Google Earth Photo 309 Gorge Rd
Depicting Pedestrian Signals across
a residential driveway



Google

ATTACHMENT

C

Historic Hourly Traffic Volume

New Jersey Department of Transportation

Short-term Hourly Traffic Volume for 04/30/2019 to 05/02/2019

Site names:
County:
Funct Class:
Location:

n18037, N Prospect Ave-0.09,02031256_
BERGEN
Urban Minor-Arterial
Bet Central Ave and Banta Pl

Seasonal Factor Grp:
Daily Factor Grp:
Axle Factor Grp:
Growth Factor Grp:

rg1_4U
rg1_4U
rg1_4U
rg1_4U

N. Prospect Ave
between Central Ave
and Banta Pl
5/1/2019

	Sun, Apr 28, 2019			Mon, Apr 29, 2019			Tue, Apr 30, 2019			Wed, May 1, 2019			Thu, May 2, 2019			Fri, May 3, 2019			Sat, May 4, 2019		
	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S
00:00																					
01:00																					
02:00																					
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21:00																					
22:00																					
23:00																					
Total																					
AM Peak Vol																					
AM Peak Fct																					
PM Peak Hr																					
PM Peak Vol																					
PM Peak Fct																					
PM Peak Hr																					
Seasonal Fct																					
Daily Fct																					
Axle Fct																					
Pulse Fct																					

Graphic Blvd.
between N. Vivien St.
and Elder Ave.
6/12/19

New Jersey Department of Transportation

Short-term Hourly Traffic Volume for 06/11/2019 to 06/14/2019

Site names: m02950, Graphic Boulevard-0.50, 02381263
County: BERGEN
Funct Class: Urban Major Collector
Location: Bet North Vivien Street and Elder Avenue

Seasonal Factor Grp: rg1_5U
Daily Factor Grp: rg1_5U
Axle Factor Grp: rg1_5U
Growth Factor Grp: rg1_5U

	Sun, Jun 9, 2019	Mon, Jun 10, 2019	Tue, Jun 11, 2019	Wed, Jun 12, 2019	Thu, Jun 13, 2019	Fri, Jun 14, 2019	Sat, Jun 15, 2019
	N	N	N	N	N	N	N
Road	S	S	S	S	S	S	S
00:00							
01:00							
02:00							
03:00							
04:00							
05:00							
06:00							
07:00							
08:00							
09:00							
10:00							
11:00							
12:00							
13:00							
14:00							
15:00							
16:00							
17:00							
18:00							
19:00							
20:00							
21:00							
22:00							
23:00							
Total							
AM Peak Vol							
AM Peak Fct							
AM Peak Hr							
PM Peak Vol							
PM Peak Fct							
PM Peak Hr							
Seasonal Fct							
Daily Fct							
Axle Fct							
Pulse Fct							

S. Prospect Ave
between Spring Ave
and W. Broad St.

2/21/13

Hourly Volume Report

County: BERGEN
Municip: Bergenfield Boro
Street: S Prospect Ave
Location: Bet Spring Ave & W Broad ST

Site ID: 1202c8
Route/MP: S Prospect Ave-.5
SRI #: 02000S70
Func Cls: Urban Minor Arterial

Group Type: Axle
Seasonal: RG1_FC16
Group Name: RG1_FC16
Factor: 1.042
Factor: .498

	Sun 02/17/13		Mon 02/18/13		Tue 02/19/13		Wed 02/20/13		Thu 02/21/13		Fri 02/22/13		Sat 02/23/13		Average Weekday		Road
	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	
00:00									43	82	40	93			43	82	125
01:00									29	31	27	56			29	31	60
02:00									20	29	20	34			20	29	49
03:00									23	21	18	17			23	21	44
04:00									58	22	49	24			58	22	80
05:00									187	63	198	87			187	63	250
06:00									442	188	463	201			442	188	630
07:00									729	564	713	548			729	564	1293
08:00									805	475	724	489			805	475	1280
09:00									518	360	517	337			518	360	878
10:00									434	328	469	330			434	328	762
11:00									509	398	461	384			509	398	907
12:00							454	413	439	420					447	417	864
13:00						405	405	417	472	450					439	434	873
14:00						486	486	503	404	554					445	529	974
15:00						607	607	656	679	644					643	650	1293
16:00						618	618	682	554	644					586	663	1249
17:00						576	576	714	629	728					603	721	1324
18:00						486	486	573	524	674					505	624	1129
19:00						350	350	509	406	544					378	527	905
20:00						262	262	434	309	460					286	447	733
21:00						226	226	371	216	361					221	366	587
22:00						166	166	258	208	274					187	266	453
23:00						99	99	160	94	190					97	175	272
Total						4735	4735	5690	8731	8504	3699	2600			8634	8380	17014
10-18						3146	3146	3385	4120	4166	930	714			4106	4140	8246

7:AS-8:AS
3PM
3PM
3PM

Collected by: NJDOT
Report Printed: 10/26/2004
DV04 Page 1 of 1

In Cooperation With
U.S. Department of Transportation
Federal Highway Administration

AADT: 8907 8715 17622
K Factor: .077 D Factor: .536