MERIDIAN
LAND SERVICES, INC.

Office: 31 Old Nashua Road, Suite 2, Amherst, NH 03031
Mailing: PO Box 118, Milford, NH 03055
Phone: 603-673-1441 * Fax 603-673-1584
www.MeridianLandServices.com

CIVIL ENGINEERING | LAND SURVEYING | PERMITTING | SOIL & WETLAND MAPPING | SEPTIC DESIGN | ENVIRONMENTAL

June 24, 2021

Michele B. Decoteau, Land Use Administrator
Town of Wilton
42 Main Street
P.O. Box 83,
Wilton, NH 03086

Re: **Intervale Commons Condominiums**
Traffic Generation Memorandum
Tax Map J Lots 79

Ms. Decoteau:

As part of the site plan application, for the Intervale Commons Condominiums project, below is data pertaining to existing and proposed traffic patterns for the site.

Introduction:

The subject parcel is described as Map J Lot 79 on the Wilton, NH Tax Assessor's maps, with a physical address of 63 Forest Road, Wilton, NH. The site is located along northerly side of NH Route 31 (Forest Road) with 528' of frontage on the state road spanning between the northerly Pleasant Street intersection and the southernly Pleasant Street Intersection. In addition to having frontage on State Route 31 the parcel has 400' of frontage on The site is within the Downtown Commercial zoning districts which permits residential uses consistent with the Residential zoning district.

The applicant proposes to construct two condominium buildings with a total of 11 units. The proposed construction also includes a paved connection to State Route 31, parking area, stormwater management and other associated site improvements. The proposed density requires a variance from the Town of Wilton ZBA but as described within the remainder of this memo, the proposed use, density and site configuration does not have a negative impact on the adjacent roadway.

Description of Roadway, Transportation Network, and Pedestrians Facilities:

The existing transportation network in the immediate vicinity of the site, is effectively the NH Route 31 corridor, which has the following parameters:

- Two lane state highway;
- Posted speed limit of 30 MPH along the frontage;
- Posted speed limit of 40 MPH 300' +/- from the northwest property corner
- Travel lanes are 12 feet in width;
- Paved shoulders are 2 feet wide;
- AADT of 3,549 vehicles/day for 2020;
- AADT of 4,089 vehicles/day for 2019

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- AADT of 4097 vehicles/day average in the last 5 years.

The closest intersections are the Pleasant Street intersections, which are at the Northwest and South corners of the property. The pedestrian facilities end at south east side of the south Pleasant Street intersection.

Existing traffic volumes were obtained from available NHDOT traffic data on June 23, 2021 with the following results:

Existing Traffic Volume Summary (2020)

Location/ Time Period	Daily Volume (vpd)	Peak Hour Volume (vph)	Directional Distribution
NH 31 (Forest Rd) At Stony Brook East Of Burton Hwy			
Weekday	3,549		
Weekday AM Peak		No Data	No Data
Weekday PM Peak		No Data	No Data

***NHDOT Location ID # 82485052**

Previous Traffic Volume Summary (2019)

Location/ Time Period	Daily Volume (vpd)	Peak Hour Volume (vph)	Directional Distribution
NH 31 (Forest Rd) At Stony Brook East Of Burton Hwy			
Weekday	4,089		
Weekday AM Peak		No Data	No Data
Weekday PM Peak		No Data	No Data

***NHDOT Location ID # 82485052**

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Existing Conditions and Trip Generation and Distribution

The existing site has is a closed hardware store with a repair shop and associated storage area. The store has been closed for the past year. The hardware store and small engine repair area as described by the Wilton Property Records Card are approximately 2,708 sf with 8,524 sf of storage area and unfinished space. This building has a footprint of 5,300 sf +/-; which is intruding into the State Route 31 ROW by 11.1' and 797 sf, and is intruding into the Pleasant Street ROW by 5' and 25 sf. These encroachments into the ROW create poor sight distance for exiting vehicles. There is an additional building that is not recorded on the Property Record Card that has a footprint of 3,641 sf. This building appears to have been used as small engine repair and additional covered storage.

The existing access location and site parameters are the following.

- The site is accessed from State Route 31 by two large undefined curb cuts that are approximately 105' +/- and 167' +/- at the edge of pavement. The defined openings can be described as 3 openings with approximate widths of 51'+/-, 40' +/-, and third being 167' +/-.
- The site has an additional access to garage storage area from Pleasant Street.
- Existing parking is gravel with no pavement markings.
- The existing sight distance from the west bound travel lane meets the 400' minimum requirement. The existing sight distance from the east bound travel line does not meet with minimum requirement with an available distance of 131'.

The vehicle trips for the previous use were generated, by using the Institute of Transportation Engineers (ITE). For the purposes of trip generation the 2,708 sf of Store Display Area was used, and the small engine repair and storage areas were disregarded. 'Trip Generation' manual, using Hardware/Paint Store (ITE Code 816), with the following summarized results:

Trip Generation Summary

Time Period/Direction	No. of Trips	Distribution/ Direction Total for Site
Weekday Daily	139	
Weekday Peak Hour:	14	
Enter	8	4EB/4WB
Exit	6	3EB/3WB
Total	14	

*Assumes trips are split with a 54% between entering and 46%exiting
**Assumes trip arrival and departure directions are split 50% in each direction

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Trip Generation Summary

Time Period/Direction	No. of Trips	Distribution/ Direction Total for Site
Weekend Daily (Saturday)	233	
Weekday Peak Hour:	31	
Enter	15.5	7.75EB/7.75WB
Exit	15.5	7.75EB/7.75WB
Total	31	

*Assumes trips are split with a 50% between entering and exiting
**Assumes trip arrival and departure directions are split 50% in each direction

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Proposed Conditions and Trip Generation and Distribution

In the proposed condition, the applicant is requesting approval for a two building, 11-unit condominium. The proposed access will be 24' wide. The access location will be located 200' from north west of the south Pleasant Street intersection. The project will have the following design parameters:

- One entrance lane
- One exit lane, one entrance lane;
- 12 foot wide travel lanes;
- Driveway meets all seasons stopping sight distance

The vehicle trips for the proposed condominium were generated, by using the Institute of Transportation Engineers (ITE) 'Trip Generation' manual, using Residential Condominium/Townhouses (ITE Code 230), with the following summarized results:

Trip Generation Summary

Time Period/Direction	No. of Trips	Distribution/ Direction Total for Site
Weekday Daily	65	
Weekday Peak Hour:	5	
Enter	2.5	1.25EB/1.25WB
Exit	2.5	1.25EB/1.25WB
Total	5	

*Assumes trips are split with a 50% between entering and exiting
**Assumes trip arrival and departure directions are split 50% in each direction

Trip Generation Summary

Time Period/Direction	No. of Trips	Distribution/ Direction Total for Site
Weekend Daily (Saturday)	63	
Weekday Peak Hour:	6	
Enter	3	1.5EB/1.5WB
Exit	3	1.5EB/1.5WB
Total	6	

*Assumes trips are split with a 50% between entering and exiting
**Assumes trip arrival and departure directions are split 50% in each direction

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Based on knowledge of the previous use not producing as much traffic as a typical hardware store a factor of safety of 1.5 could be used to adjust the trip count. This factor of safety lowers the weekday trips to 93 and the Saturday trips to 156. The proposed use trips determined by the ITE Trip Generation Manual are consistent with the expected trips produced.

The proposed project improves the conditions of the roadway in several key areas. There is a reduction in trips generated with the proposed development in both the weekday and weekend scenario. This lowers the number of vehicles on the roadway. The reduction in trips from 93 to 65 during a weekday and 156 to 63 during the weekend is a 30% and 60% reduction for the property. The 2019 roadway data was used when comparing the trips generated by the project with the capacity of the traffic on the existing roadway. 2019 data was used because the hardware store was open this year, and the data is unaffected by any covid influence. These reductions reduce the number of trips on State Route 31 by 0.7% during a weekday and 2.3% during the weekend when compared to the 2019 AADT for the roadway. A relatively small decrease but the data shows that it will have no negative impact on the roadway capacity.

An additional benefit of the proposed project to the function of the roadway is the consolidated access points. The majority of the frontage is open for vehicles to pull into the parking area or pull out onto the State Route. The proposed plan consolidates these access points into one driveway with appropriate separation to the adjacent intersections. The last major benefit the project has on the roadway is the increase of side distance. The existing buildings create a condition where a sight distance is reduced to 131'. The proposed access point has a sight distance of a minimum of 400' in both directions.

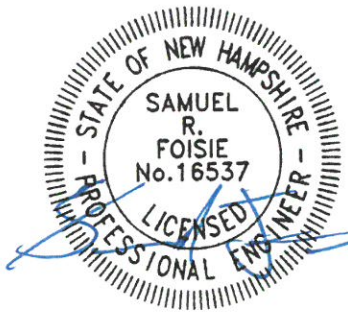
To recap, the proposed project improves the traffic in the area by reducing the trips produced, consolidating access point to one clearly defined driveway, and improving the sight distance.

Should you have any questions or concerns, please do not hesitate to contact me.

Thank you for time and consideration in this matter.

Sincerely,
Meridian Land Services, Inc.

Samuel R. Foisie, PE
Project Engineer



cc: Tim Sullivan with attachments

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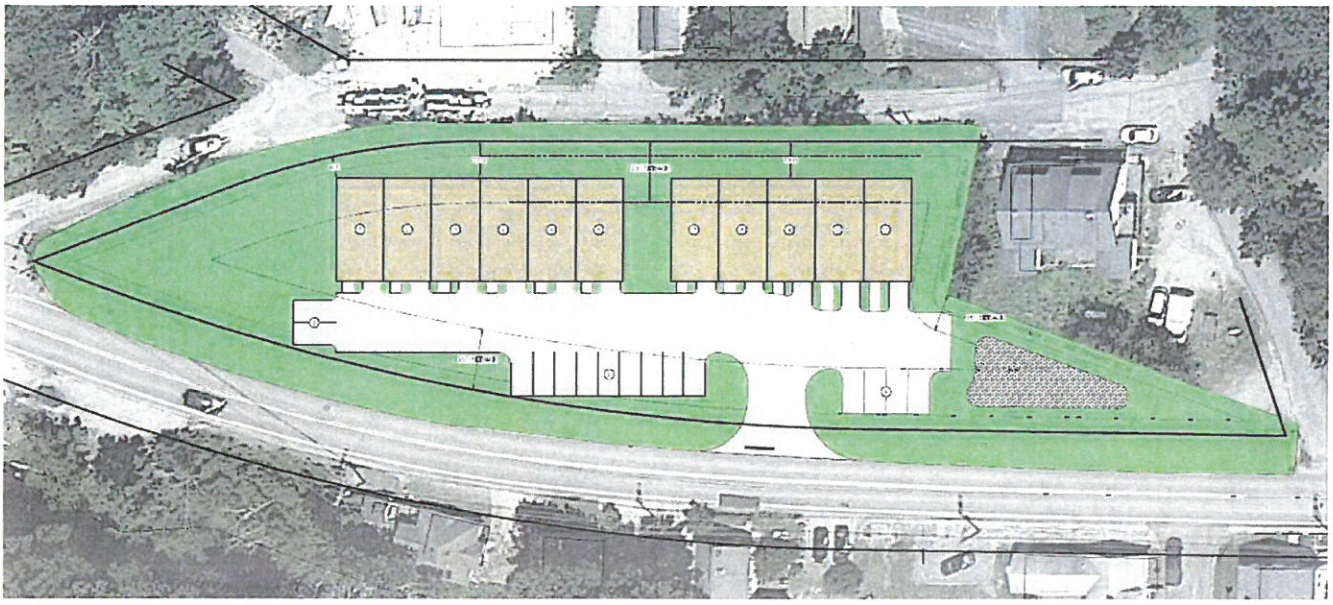
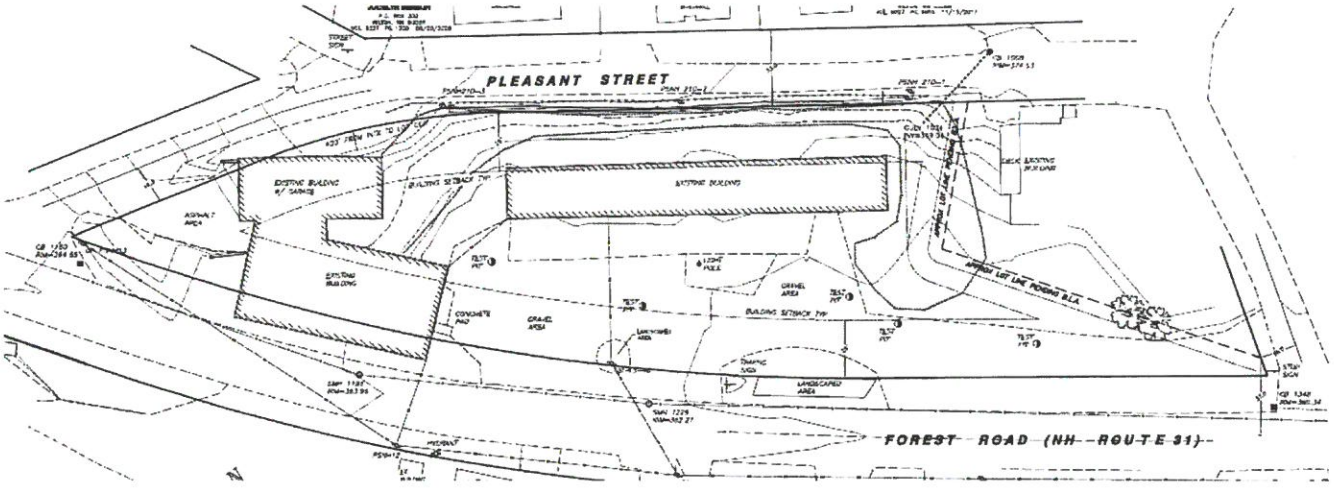
PROPOSED DEVELOPMENT



EXISTING CONDITIONS



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TRAFFIC COUNT LOCATION EXHIBIT

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TRAFFIC DATA

Record 1 of 1 Goto Record go

Location ID	82485052	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	Yes
LRS ID	S0000031__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	NH 31
GF Group	D	Active	Yes
Class Dist Grp	Default	Category	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Major Collector	Milepost	
Located On	Forest Rd		
Loc On Alias	NH 31 (FOREST RD) AT STONY BROOK EAST OF BURTON HWY		

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2020	3,549[3]		10		3,231 (91%)	318 (9%)	Grown from 2019
	2019	4,089	412	10		3,744 (92%)	345 (8%)	
	2018	4,329[3]		10		3,990 (92%)	339 (8%)	Grown from 2017
	2017	4,286[3]		10		3,978 (93%)	308 (7%)	Grown from 2016
	2016	4,235	418	10		3,862 (91%)	373 (9%)	

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ITE TRIP GENERATION

Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

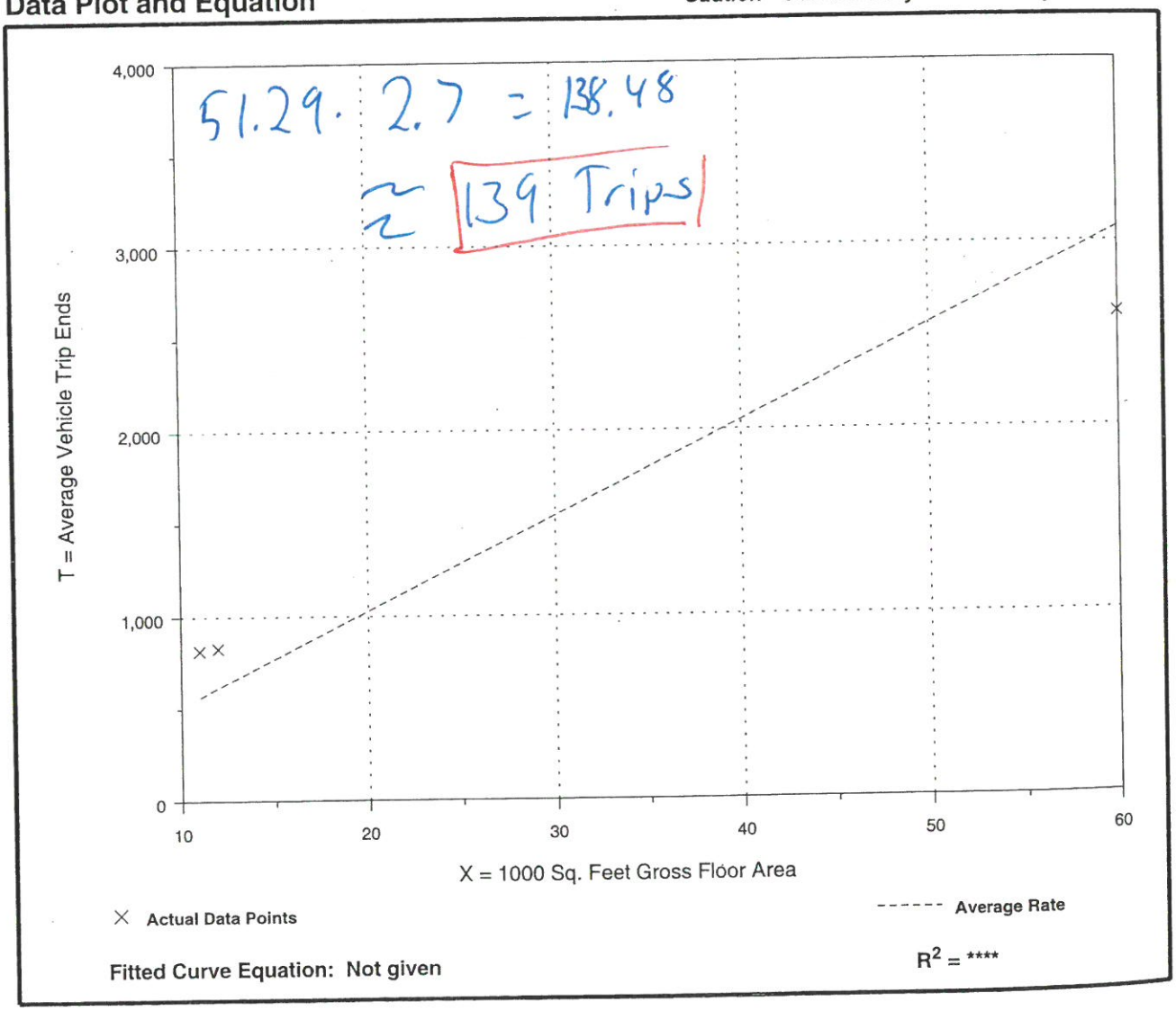
Number of Studies: 3
Average 1000 Sq. Feet GFA: 28
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
51.29	43.58 - 74.09	14.43

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
A.M. Peak Hour of Generator

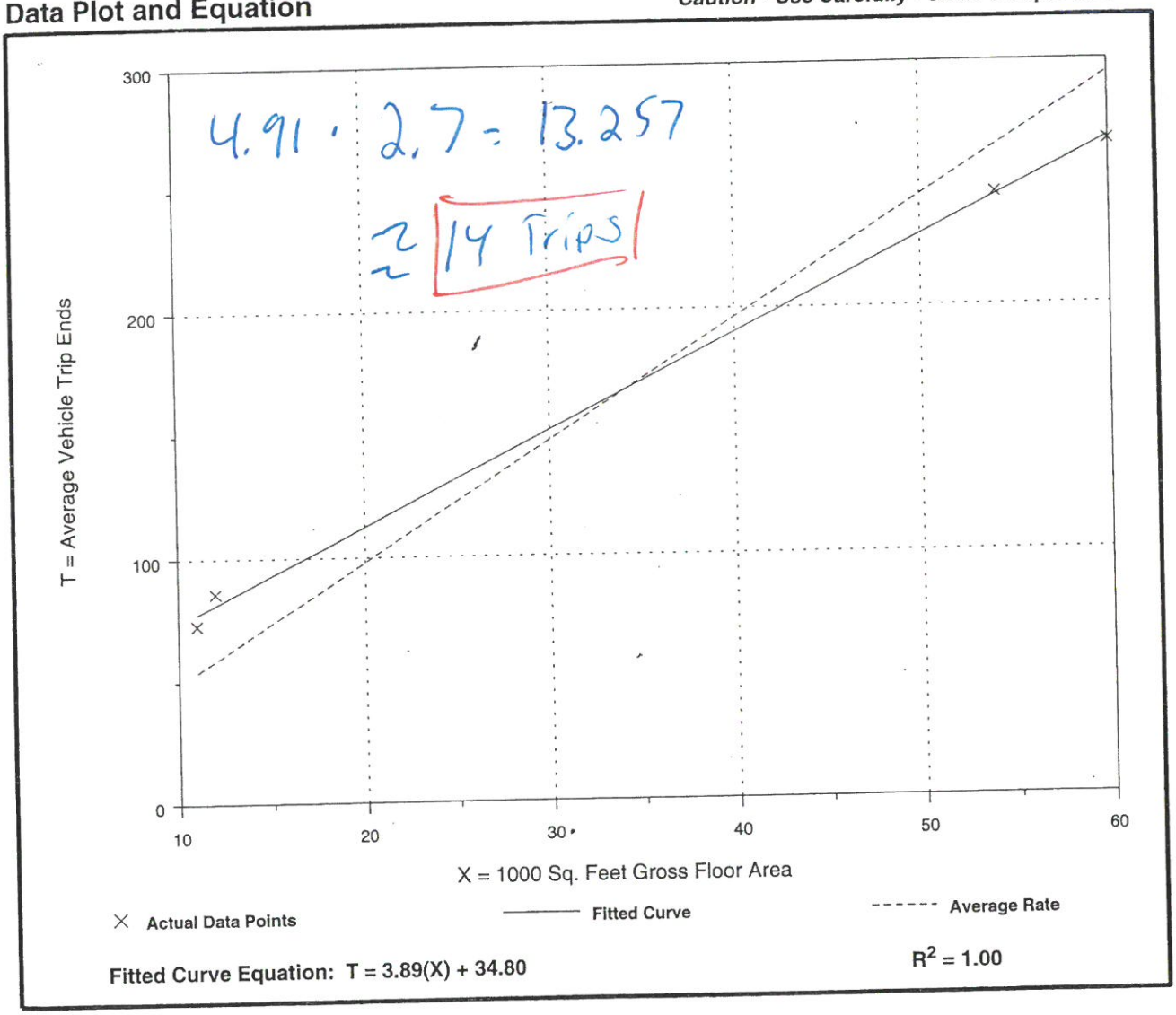
Number of Studies: 4
Average 1000 Sq. Feet GFA: 34
Directional Distribution: 52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.91	4.45 - 7.17	2.37

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: T = 3.89(X) + 34.80

R^2 = 1.00

Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
P.M. Peak Hour of Generator

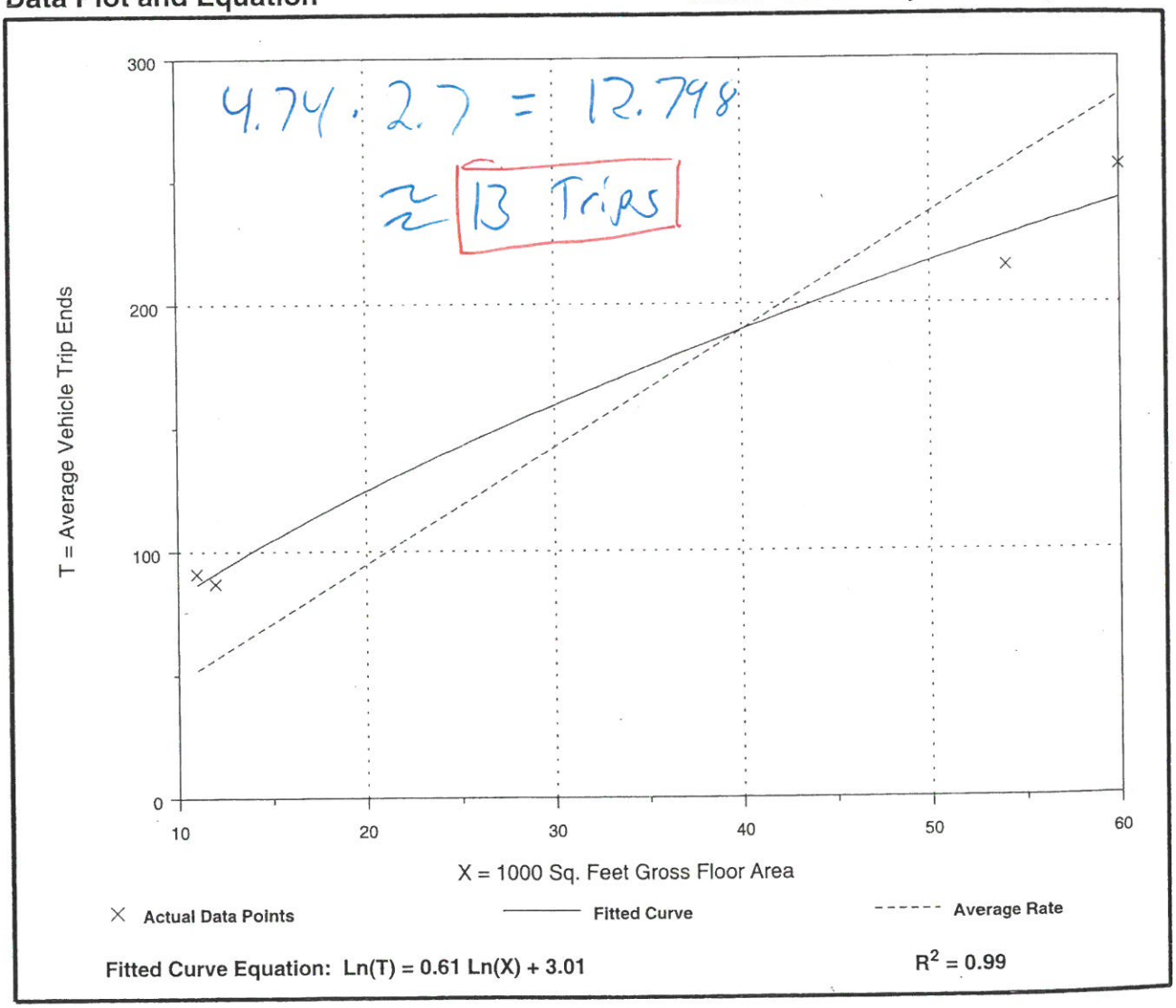
Number of Studies: 4
Average 1000 Sq. Feet GFA: 34
Directional Distribution: 54% entering, 46% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.74	3.98 - 8.27	2.55

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Saturday

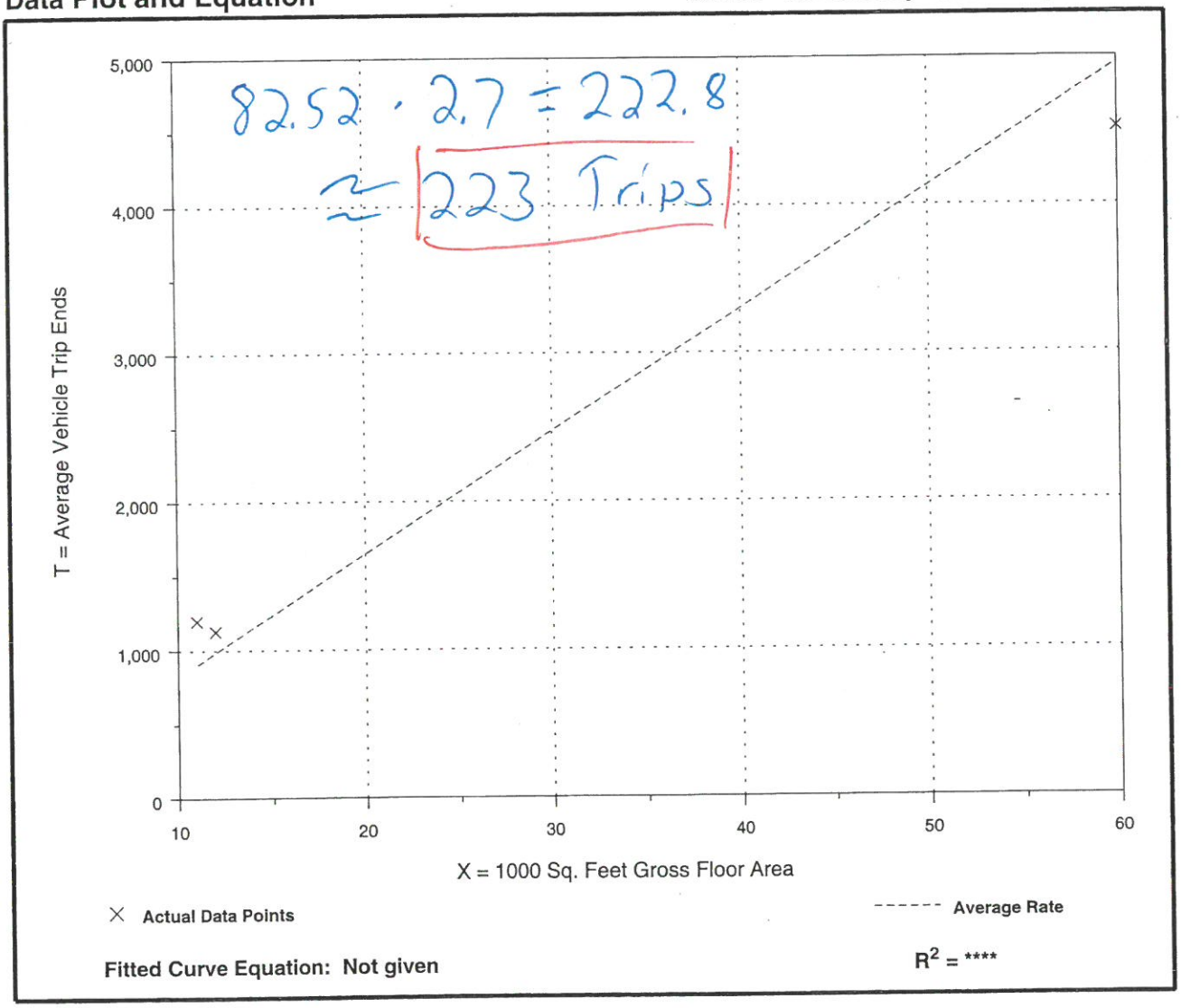
Number of Studies: 3
Average 1000 Sq. Feet GFA: 28
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
82.52	75.30 - 109.09	15.27

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Saturday,
Peak Hour of Generator

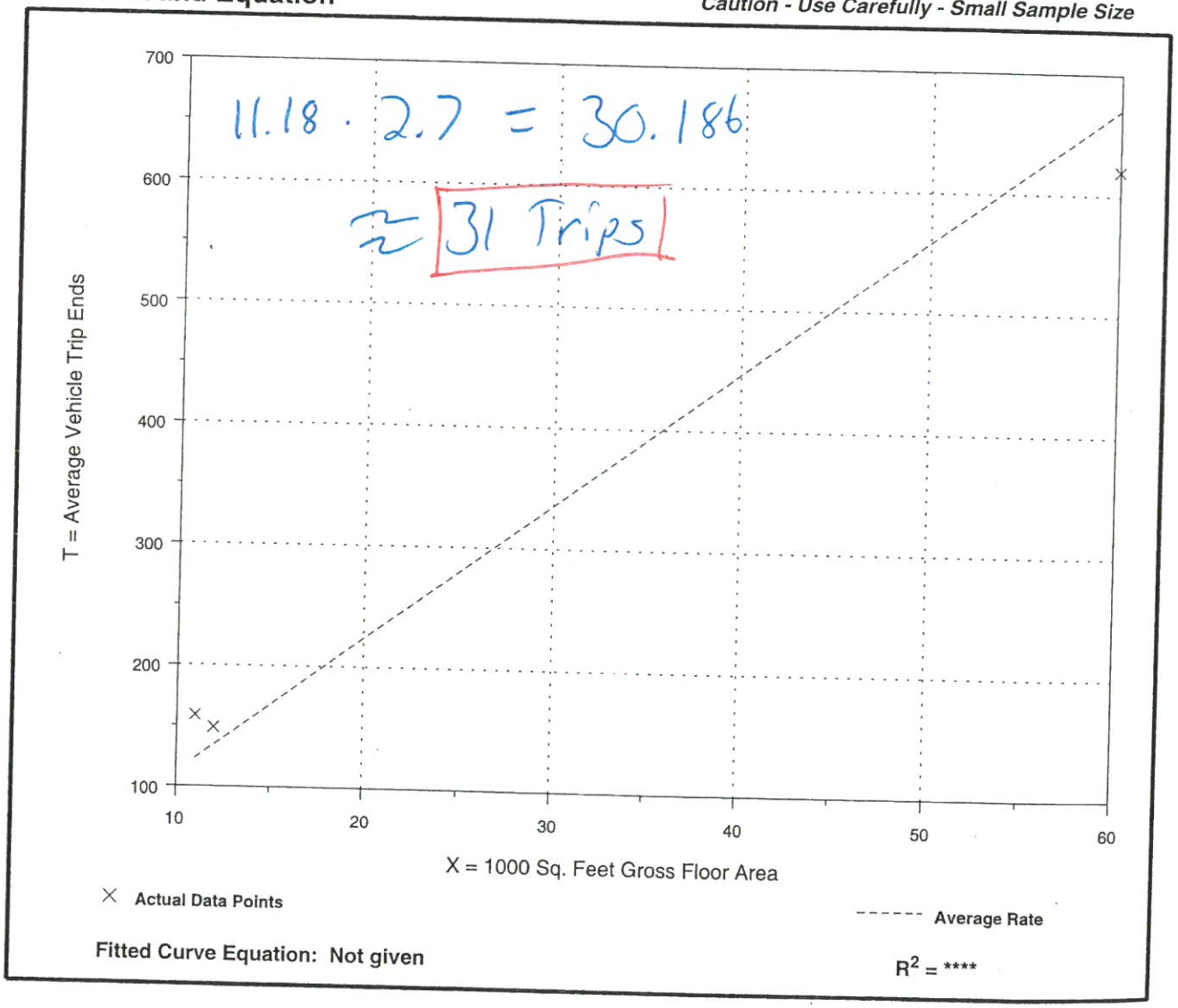
Number of Studies: 3
Average 1000 Sq. Feet GFA: 28
Directional Distribution: Not available

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
11.18	10.33 - 14.45	3.61

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Sunday**

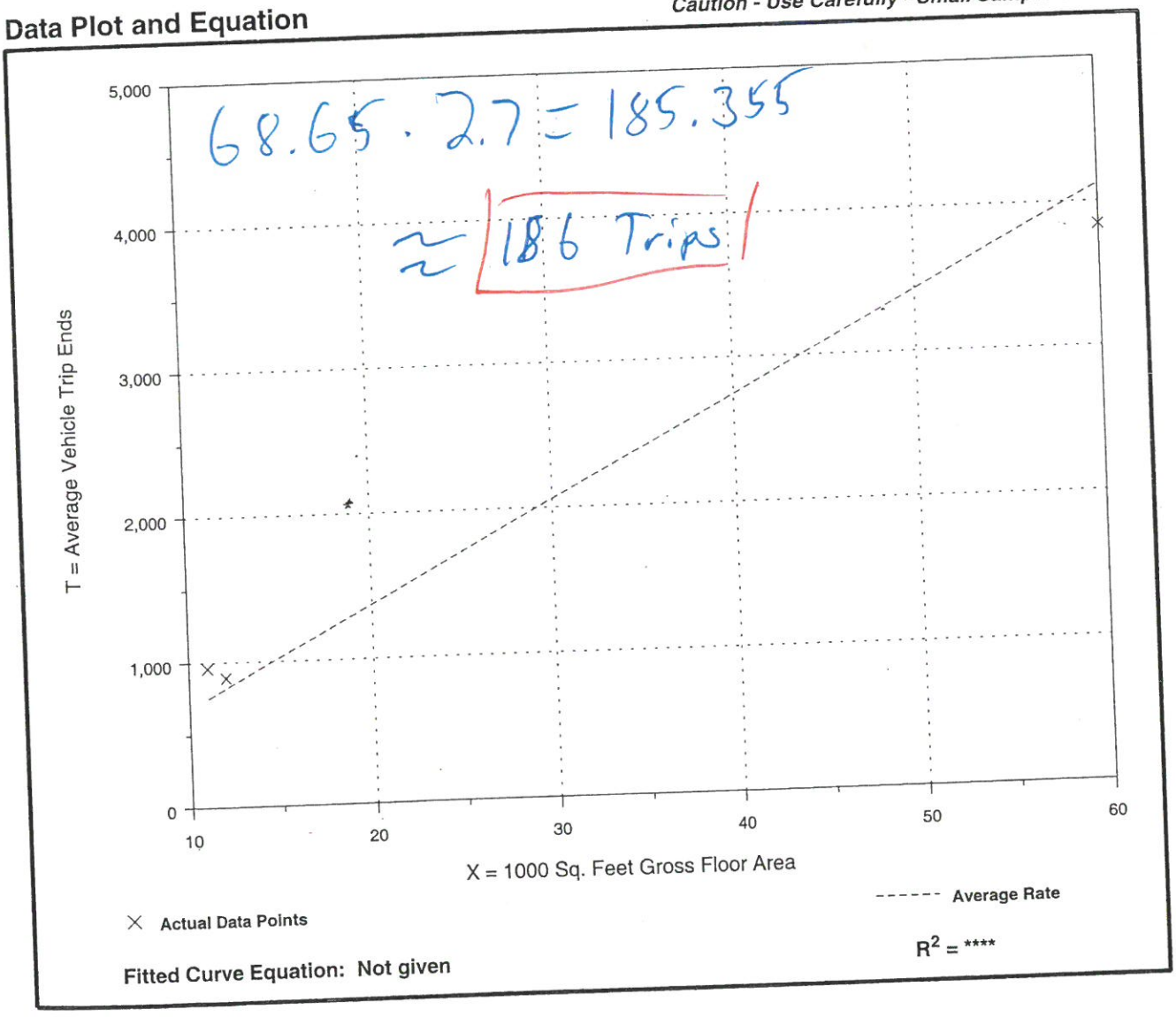
Number of Studies: 3
Average 1000 Sq. Feet GFA: 28
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
68.65	64.00 - 87.45	11.63

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Sunday,**
Peak Hour of Generator

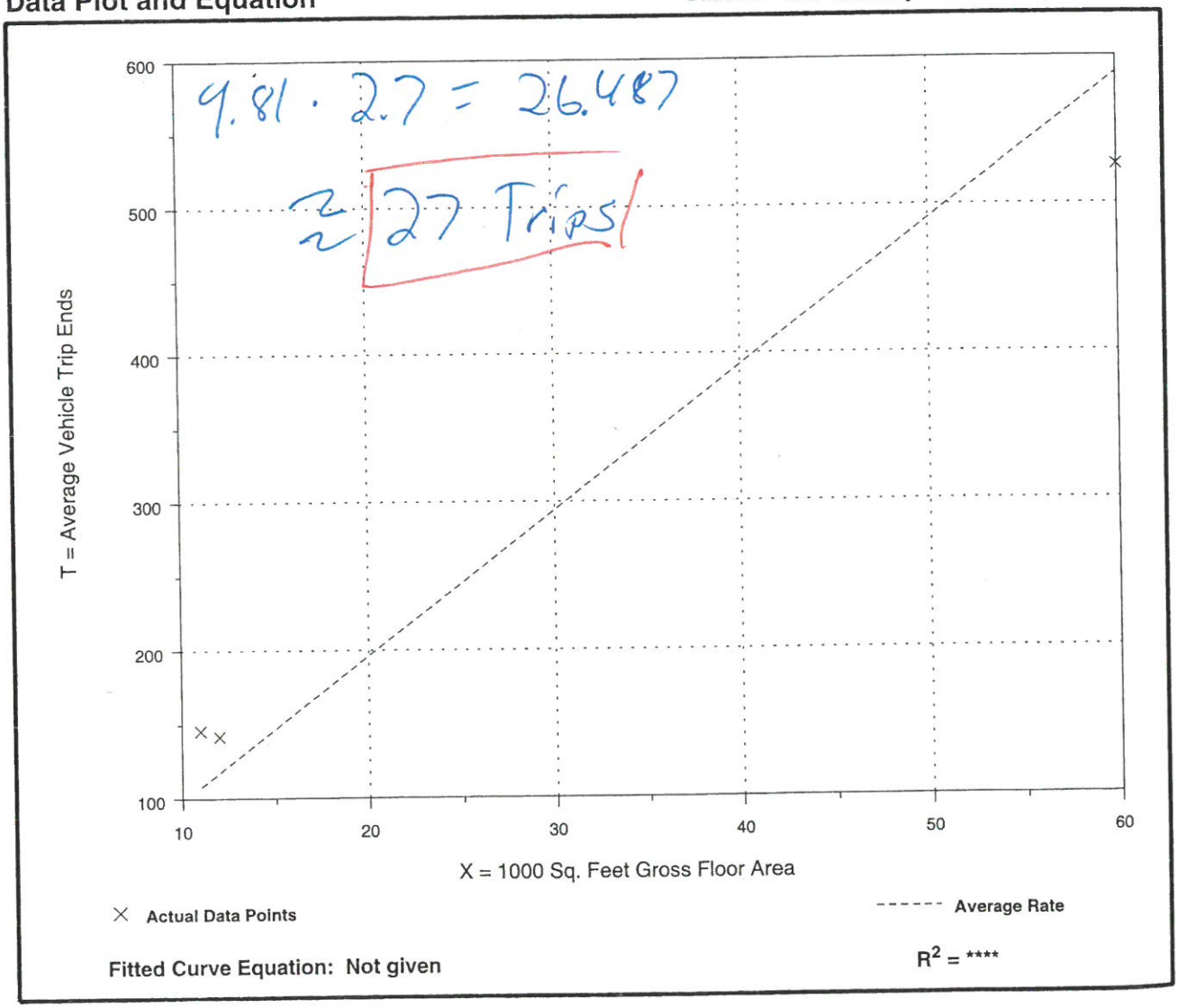
Number of Studies: 3
Average 1000 Sq. Feet GFA: 28
Directional Distribution: Not available

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.81	8.77 - 13.27	3.54

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Residential Condominium/Townhouse
(230)

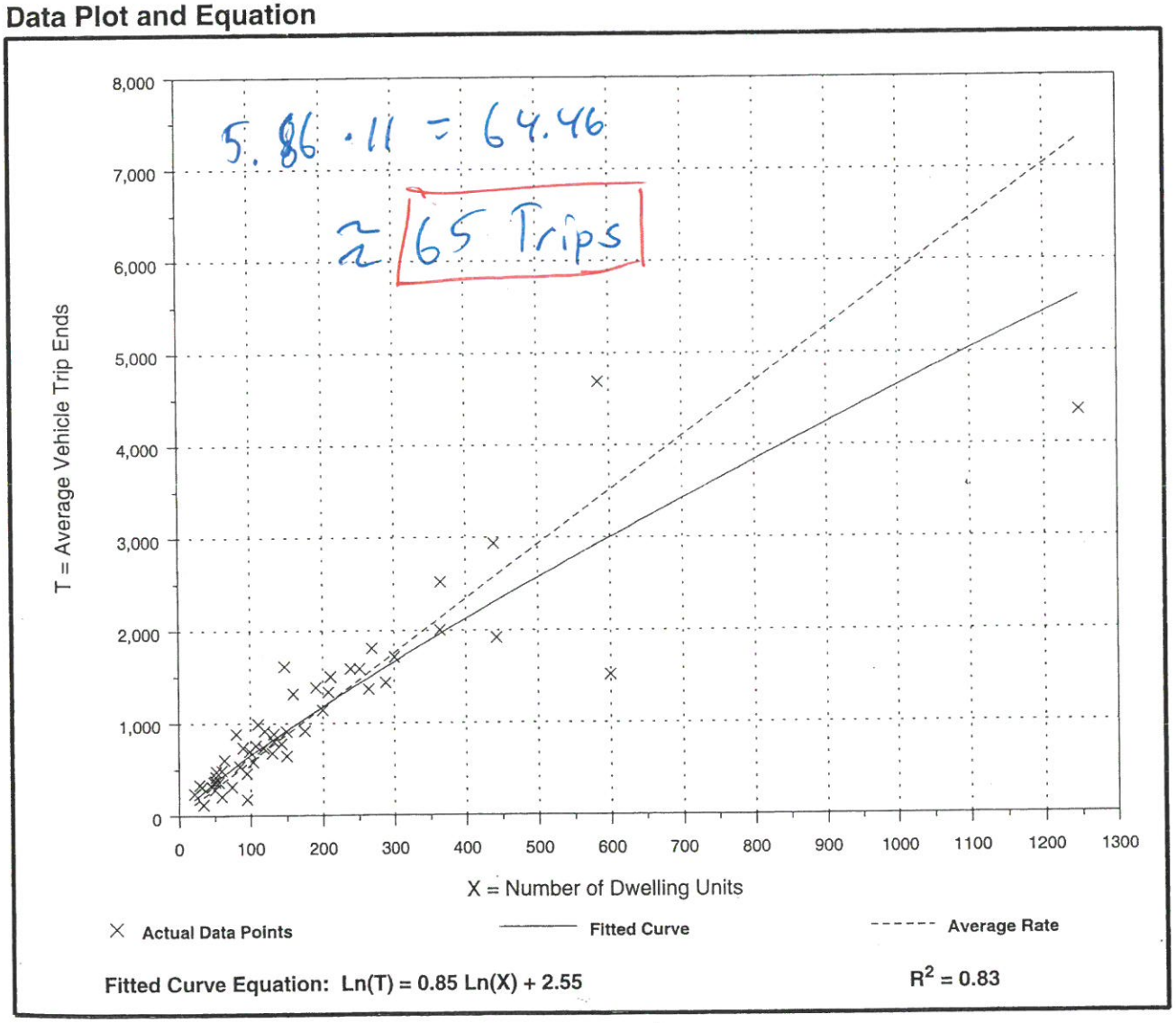
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 54
Avg. Number of Dwelling Units: 183
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.86	1.83 - 11.79	3.09

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.85 Ln(X) + 2.55

R^2 = 0.83

Residential Condominium/Townhouse
(230)

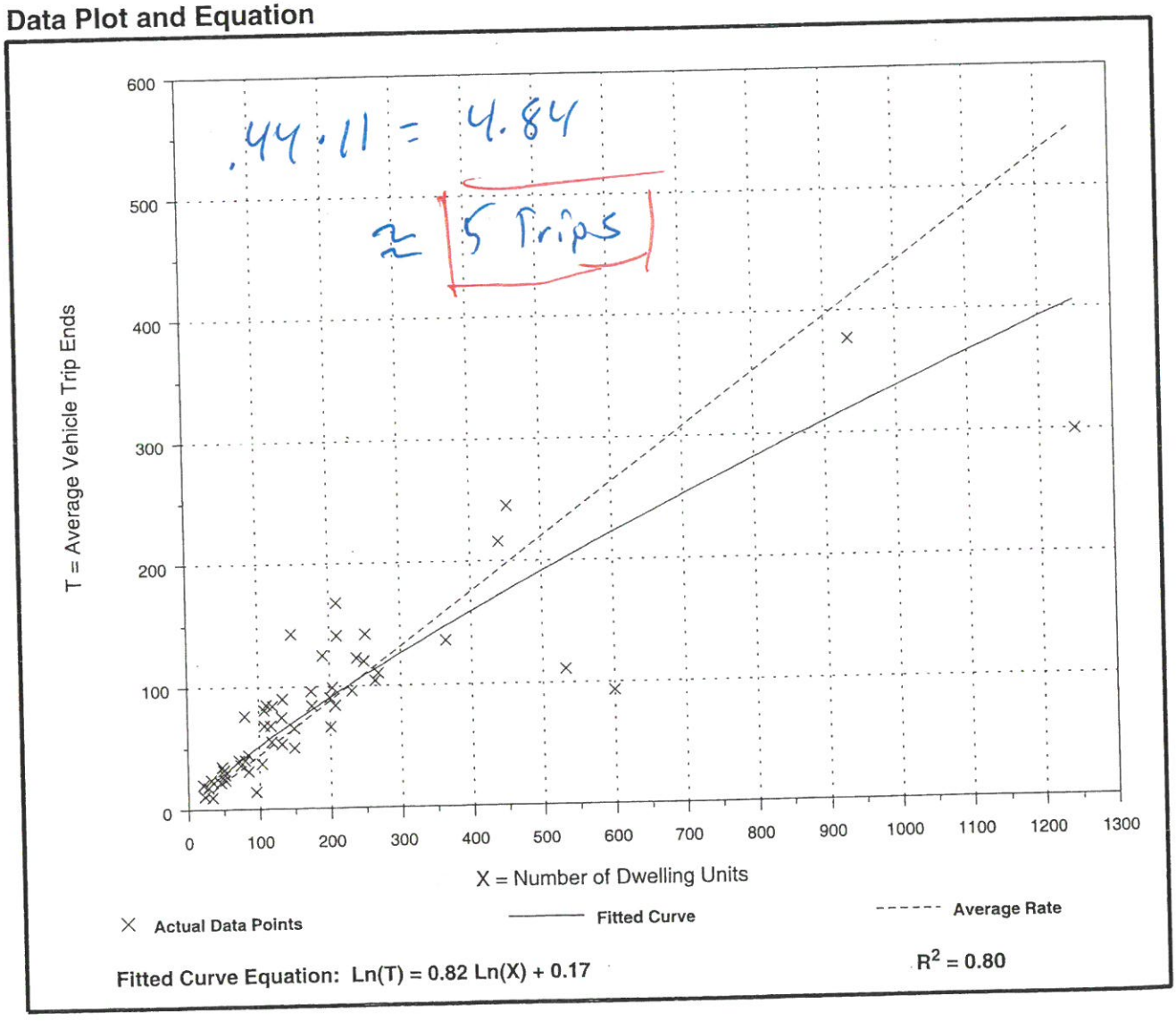
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
A.M. Peak Hour of Generator

Number of Studies: 52
Avg. Number of Dwelling Units: 201
Directional Distribution: 18% entering, 82% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 0.97	0.68

Data Plot and Equation



Residential Condominium/Townhouse
(230)

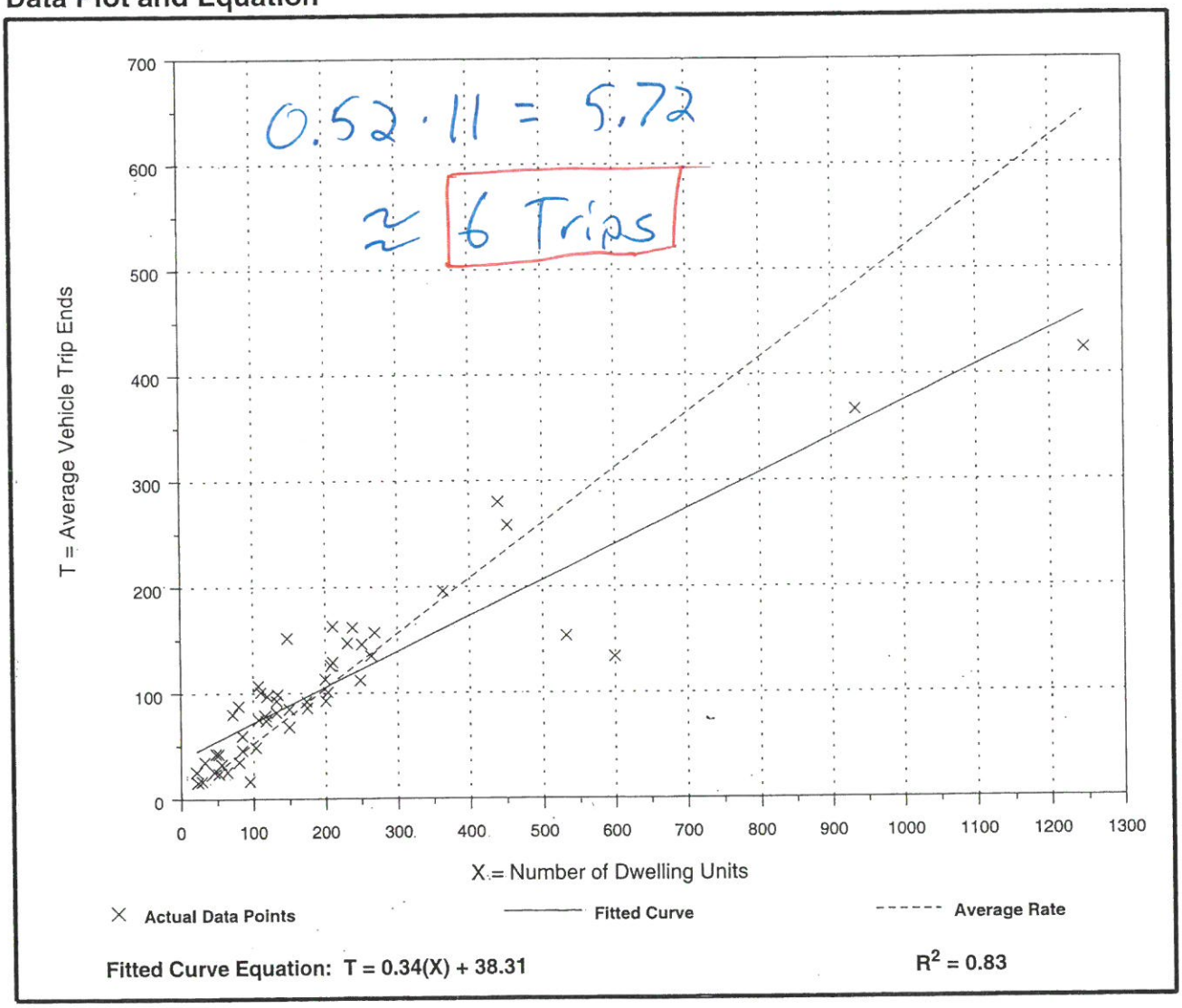
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
P.M. Peak Hour of Generator

Number of Studies: 50
Avg. Number of Dwelling Units: 204
Directional Distribution: 64% entering, 36% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.52	0.18 - 1.24	0.75

Data Plot and Equation



Fitted Curve Equation: T = 0.34(X) + 38.31

R^2 = 0.83

Residential Condominium/Townhouse
(230)

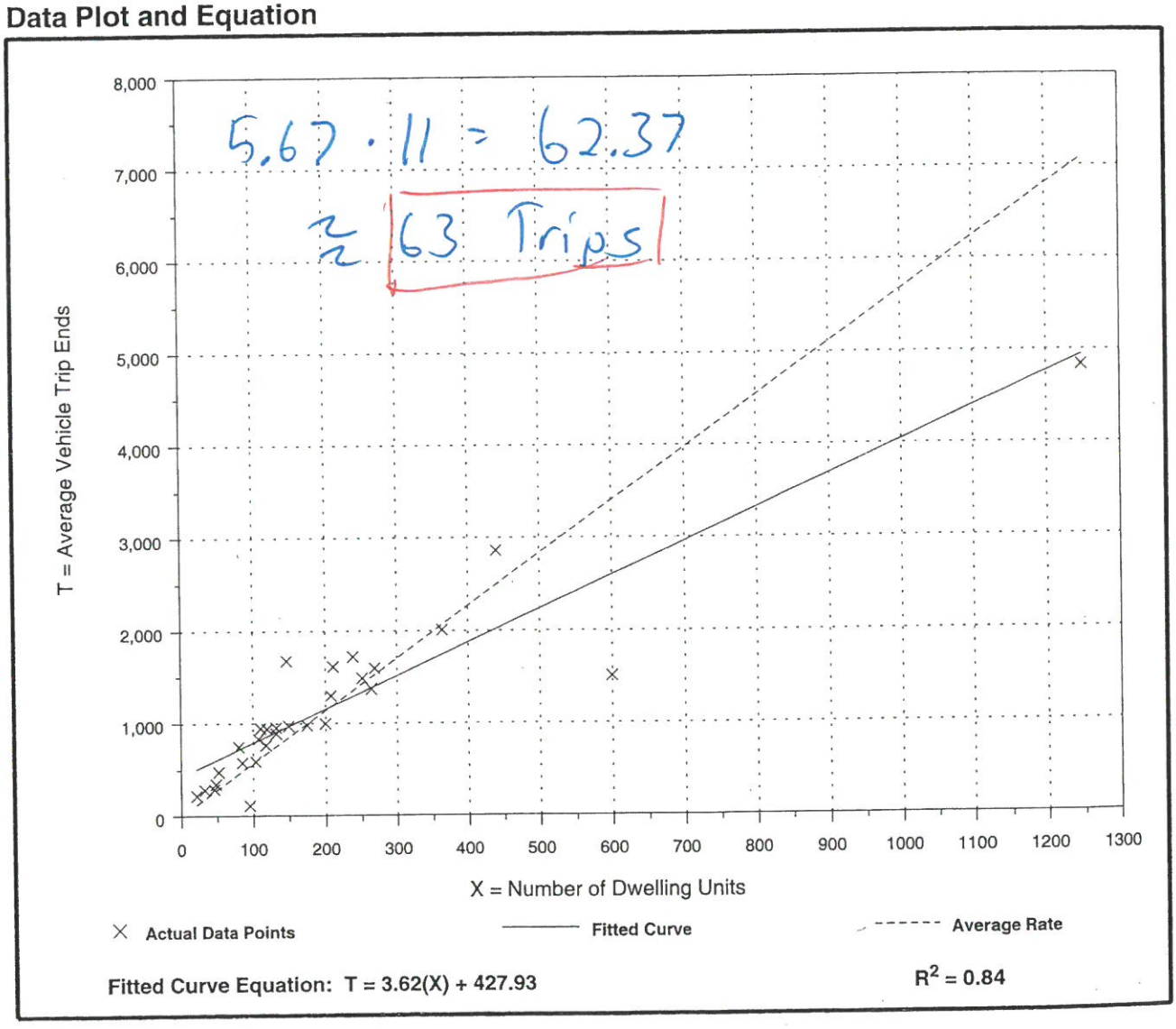
Average Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Number of Studies: 30
Avg. Number of Dwelling Units: 209
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.67	1.17 - 11.40	3.10

Data Plot and Equation



Residential Condominium/Townhouse
(230)

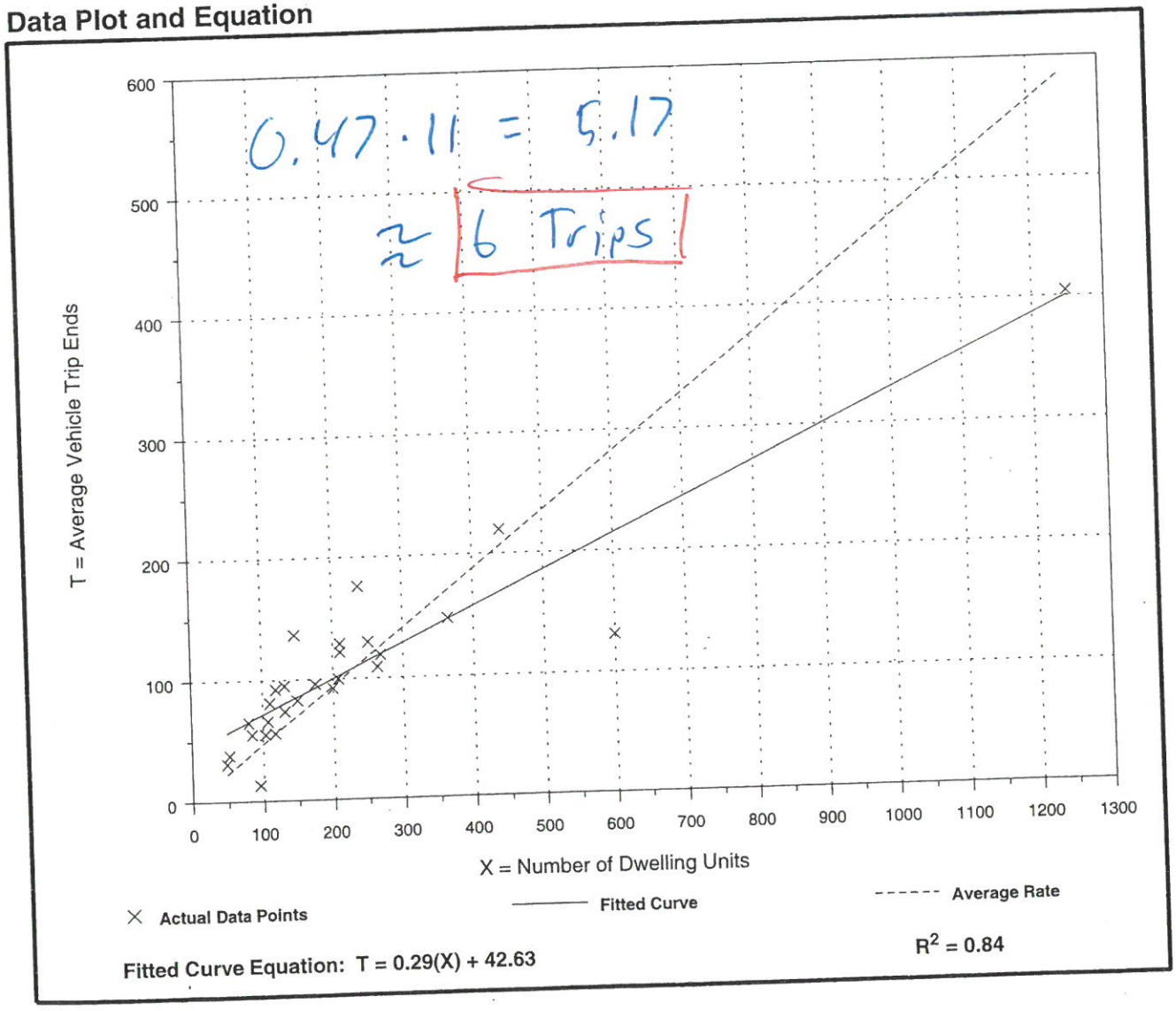
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday,**
Peak Hour of Generator

Number of Studies: 27
Avg. Number of Dwelling Units: 228
Directional Distribution: 54% entering, 46% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.47	0.14 - 0.93	0.71

Data Plot and Equation



Residential Condominium/Townhouse
(230)

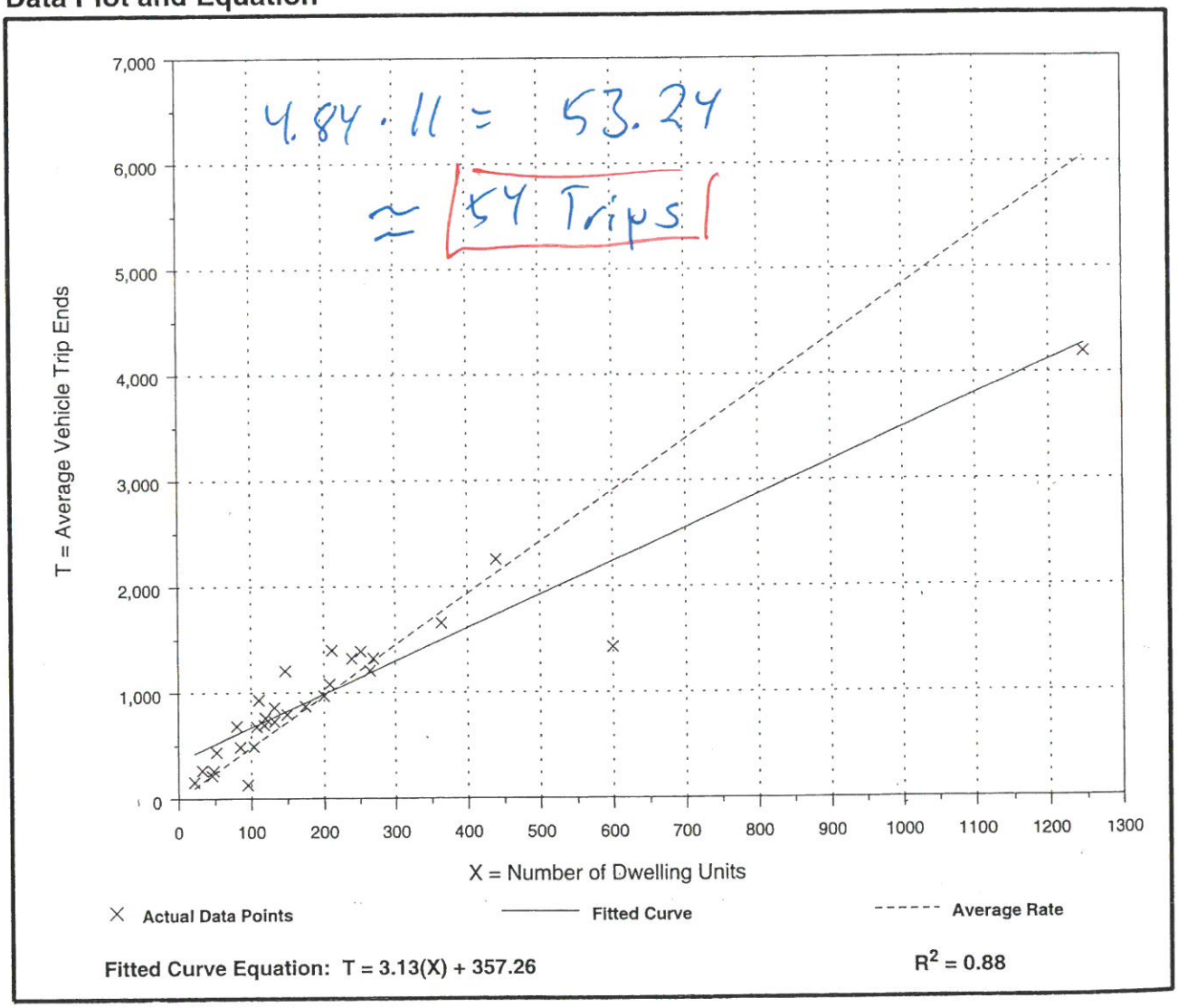
Average Vehicle Trip Ends vs: Dwelling Units
On a: Sunday

Number of Studies: 30
Avg. Number of Dwelling Units: 209
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.84	1.36 - 8.56	2.71

Data Plot and Equation



Fitted Curve Equation: T = 3.13(X) + 357.26

R^2 = 0.88

Residential Condominium/Townhouse
(230)

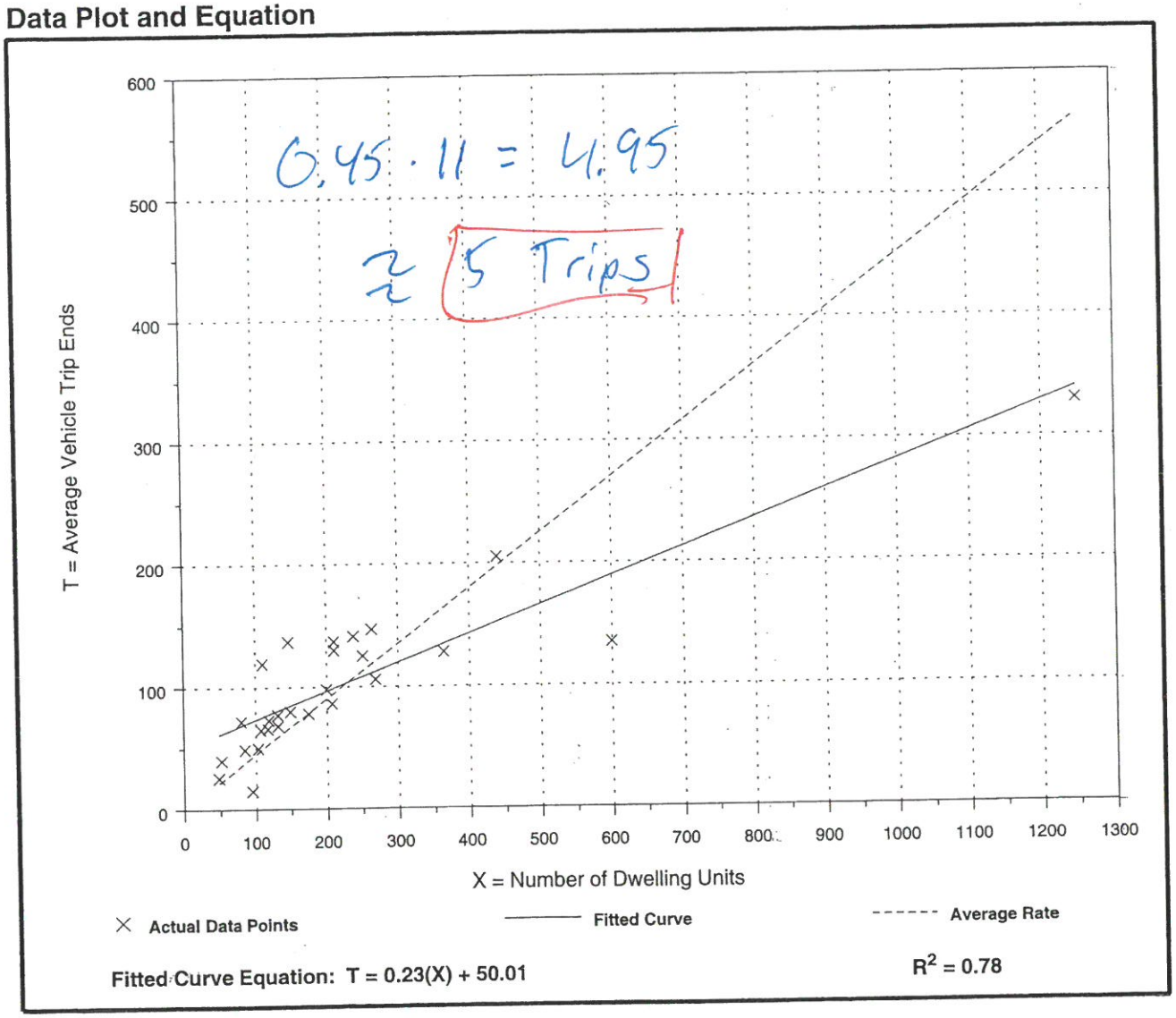
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Sunday,**
Peak Hour of Generator

Number of Studies: 27
Avg. Number of Dwelling Units: 228
Directional Distribution: 49% entering, 51% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.45	0.16 - 1.07	0.70

Data Plot and Equation



Fitted Curve Equation: T = 0.23(X) + 50.01

R^2 = 0.78