SPECIAL LAND USE TRIP GENERATION IN VIRGINIA

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E. D. Arnold, Jr. Research Scientist

(The opinions, findings, and conclusions expressed in this report are those of the author and not necessarily those of the sponsoring agencies.)

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ABSTRACT

Vehicle trip rates at shopping centers, apartment complexes, and subdivisions throughout Virginia were determined from seven-day volume counts. These rates were then compared with rates reported in four recognized sources of trip rate statistics and with Virginia rates developed approximately ten years ago. Within the Virginia data, the rates in the various areas of the state and the rates at sites served by transit and not served by transit were compared. Also, the time of occurrence of the peak traffic flow at the three land uses was investigated. Conclusions regarding the above were developed, and recommendations regarding the use of trip rates in planning were made.

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INTRODUCTION

The amount of travel demand is a fundamental parameter of any transportation planning process or traffic engineering analysis. Multiple regression analysis and other techniques are used in the formal planning process to estimate the number of trips generated by or attracted to relatively large geographic areas having similar land use characteristics. These estimates have proven satisfactory in the planning of transportation systems for a region or specific corridor, but not for the planning and traffic engineering analyses related to proposed special land uses such as shopping centers, apartments and subdivisions. Estimates of the travel demand to be generated by these specific land uses are typically needed to determine such items as the requirements of the internal circulatory system, parking requirements, the number and design of entrances and exits, signal timing and phasing, and impacts on the surrounding network of roads. The rate at which trips will be generated based on a specific characteristic of the land use is frequently used to estimate the demand. For example, the number of trips per 1,000 square feet (93 square meters) of gross floor area and trips per dwelling unit are often used to estimate the travel demand from proposed shopping centers and apartment complexes, respectively. Inherent in trip generation rates, which are based on the travel demand at similar existing sites, are the assumptions of a linear relationship between the number of trips and an easily measurable characteristic of the specific land use and transferability of the rates between geographical areas.

Many studies have been conducted in various parts of the country to determine the trip rates for specific land uses. In the early 1970's the (1,2) Virginia Department of Highways and Transportation undertook two such studies. Additionally, there have been several major efforts to collect and compile the results of all these individual studies from throughout the country. Probably the most well known are the Institute of Transportation Engineers (ITE) Informational Report entitled <u>Trip Generation</u>, ⁽³⁾ and the Arizona Department of Transportation (ADOT) report entitled <u>Trip Generation Intensity Factors</u>. ⁽⁴⁾ Another very recent summary is included in the National Cooperative Highway Research Program (NCHRP) Report 187 entitled <u>Quick-Response Urban Travel</u> <u>Estimation Techniques and Transferable Parameters</u>. ⁽⁵⁾Finally, a recent report by Simpson and Curtin, Inc. entitled <u>Guidelines for Traffic Impact Study</u> contains a chapter on trip generation. ⁽⁶⁾ The consultants reviewed the most recognized sources of trip rates and then developed a set of rates applicable to the Richmond area.

Although these documents provide excellent sources for trip generation rates, it is often questioned whether these summarized results can be applied indiscriminately in Virginia. This report describes an investigation of this question and several other issues concerning special land use trip generation.

PURPOSE AND SCOPE

The main purpose of the study was to investigate whether the average rates calculated from the results of special land use trip generation studies throughout the country can be applied satisfactorily in Virginia. In other words, the purpose was to provide an answer to the question of whether the trip rates developed in the aforementioned reports by the ITE, the ADOT, the NCHRP and Simpson and Curtin can be used for planning and traffic engineering analyses in Virginia. Since data for a large number of specific land uses were available, the scope of the study was necessarily limited to several test cases. Therefore, initially the trip rates for existing shopping centers, subdivisions, and multi-family housing complexes located throughout the state were measured and then compared with the aforementioned average trip rates.

The sites studied were located in the seven urban areas with a population over 50,000 and several smaller urban areas. Therefore, a second purpose of the research was to determine if trip rates differ among the areas of the state. Also, the study sites included several that were surveyed by the Department in the early 1970's and reported on in references 1 and 2. Thus a third purpose of the research was to investigate how trip rates may change over time. Finally, the Department's policy regarding the acceptance of subdivision streets into the state maintained secondary road system is to assume "that each lot will generate seven vehicles per day for residential developments.' Since this rate is significantly lower than that cited in the aforementioned rate guides, the fourth purpose of the research was to evaluate the Department's current policy of using 7.0 trips per dwelling unit for traffic projections at subdivisions.

Additionally, information concerning the time of occurrence of the peak traffic flow at the three land use types was developed, and trip rates at sites served by transit were compared with rates at sites not served by transit.

METHODOLOGY

The research was conducted in accordance with the major activities described below.

Site Selection

A total of 76 sites throughout the state were selected for study. These sites included 22 shopping centers, 29 subdivisions, and 25 apartment complexes, the distribution of which is shown in Table 1. A more consistent distribution based on population was indicated in the working plan; however, data collection schedules allowed the survey of additional sites in some areas. Also, as discussed later in this section, the number of shopping centers was less than planned in two areas. It should be noted that 6 sites were eliminated in the data analysis phase.

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<u>Urban Area</u>	Shopping Center	Subdivision	<u>Apartments</u>
Number Vincinia (a)	2	7	4
Northern Virginia	2	/	4
Southeast	2	4	3
Peninsula ^(C)	4	4	3
Richmond	3	3	3
Roanoke	2	2	2
Tri-Cities ^(d)	2	2	2
Lynchburg	2	2	2
Danville	1	1	1
Charlottesville	1	l	2
Winchester	1	1	1
Staunton	1	1	1
Harrisonburg	1	l	1
Totals	22	29	25

Location and Number of Selected Study Sites

(a) Includes Loudoun, Fairfax, Prince William counties, and cities within.

(b) Includes Norfolk, Portsmouth, Virginia Beach, Chesapeake, and Suffolk.

(c) Includes Newport News, Hampton, and surrounding area.

(d) Includes Petersburg, Hopewell, Colonial Heights, and surrounding area.

Since the project was designed for the exclusive use of automatic traffic recorders (ATR's), the primary consideration in selecting sites was the capability of obtaining accurate machine counts. Accordingly, all sites had well-defined and relatively long entrances such that vehicles passed over the counter's pressure tube at right angles. Sites where through or short-cut traffic likely occurred were avoided where possible.

In the case of shopping centers, regional centers were selected if the configuration allowed the use of ATR's; otherwise, the largest center in the area having a satisfactory layout was selected. It should be noted that in two areas, Northern Virginia and Southeast, the number of centers selected was less than planned because of the geometric criterion and, in one case, the inability to obtain permission to count the traffic.

Efforts were made to select residential developments that had the same general characteristics such that reasonable comparisons could ultimately be made. Based on discussions with local officials and field observations, housing developments for middle-income families were selected. In particular, low-income or subsidized developments were not selected. Likewise, apartments catering to students, the elderly, or other particular groups were avoided. An attempt was made to select both subdivisions and apartment complexes that contained a number of units falling within a certain range; however, this generally was unsuccessful except that extremely small and extremely large developments were avoided. With one exception, the subdivisions selected contained only single-family units, and not churches, schools, etc., sometimes found within housing developments. Finally, all apartment complexes selected contained only rental units; however, the complexes did vary between the garden apartment and town house styles.

Data Collection

Two types of data were collected — background information for each site and, of course, count data. For shopping centers, information was obtained from the center's manager, rental agent, or owner, with the essential data item being the gross leasable floor area (GLFA), excluding vacancies, of the center plus any perimeter stores within the boundaries defined by the counted entrances. Other information included the number of acres on the site, the number of parking spaces, the number of stores, estimated number of employees, hours of operation, and year opened. For the residential land uses, the essential data item gathered was the number of dwelling units (D.U.). The number of occupied units was obtained from the apartment complex's resident manager or rental agent, while the number of houses in a subdivision was obtained by field count.

As mentioned previously, the count data for each site were obtained with ATR's having solid-state electronics and being activated by switches attached to rubber roadway hoses. The number of entering and exiting vehicles at all entrances to a site was counted for a minimum of 7 days. The paper tape recording mode was set to record the counts on a 15-minute basis so that peak hour information could be accurately determined. The average weekday peak hour traffic volume of the street adjacent to the site was needed for each of the periods 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. This information was obtained either from existing data sources or from field counting. In the latter case, the two-way vehicle count was recorded on a 15-minute basis for the five week-days and used to determine the peak hours.

Efforts were made to collect data during typical weeks. For example, the major holidays were avoided. Data were not collected at shopping centers between Thanksgiving and the second week in January and at residential sites between the week before Christmas and the second week in January. Exceptionally large sales promotions at shopping centers were avoided. All such atypical occurrences could not be avoided. For example, it is recognized that shopping center business is atypically low during the first several months of a calendar year; however, it was necessary to count traffic at some centers during that period.

Data Analysis

Since the primary purpose of the study was to compare Virginia data with the nationally averaged data, the most comprehensive of the aforementioned references, viz., the ITE report, was used as a model for data output requirements. Accordingly, computer programs were developed to process and analyze the large amounts of data generated by the data collection phase. An example of the two key printout sheets is shown in Figure 1. Once these base data items were produced, the various comparisons and tabulations described later under FINDINGS were developed.

As should be expected in a project of this magnitude, problems were encountered in data collection, and adjustments had to be made in the data analysis phase. Various types of equipment failures occurred; typically, counters jammed or hoses pulled loose from the pavement. Where feasible, the missing data were estimated based primarily on the data from a similar day at the same site and entrance. If significant amounts of data were missing, then a recount was undertaken.

Two other problems were uncovered in the data analysis phase. There were cases of extremely high trip rates for shopping centers, i.e., at least twice the documented rate, and cases for all land uses where the daily totals of inbound and outbound trips were unequal. In the latter cases, small differences can be explained by unanticipated vehicle travel paths at two-way entrances, by the small error rate inherent in the equipment, and by the somewhat arbitrary assumption of a 24-hour life cycle from 12:01 a.m. to 12:00 p.m. No matter how carefully road tubes are placed, some drivers will always find a way to run over the wrong tube or even both tubes. This problem had been anticipated, however, and the general practice was to place one ATR to count the total traffic and one ATR to count either entering or exiting traffic. With this information it can be assumed that the total count is correct because it is not dependent on traffic placement. Unfortunately, this did not explain the large differences in inbound and outbound traffic found in some cases, particula, at those sites having only divided entrances.

With the cooperation of personnel from the Department's Central Office, field tests were conducted to evaluate the performance of the counters. It was found that the ATR's were counting high, even to the point of double counting, where slow moving, stop-and-go traffic was being recorded. Double counting can be caused by vehicles crossing a hose at an angle such that all four tires actuate the switch, and thus two vehicles are "detected". In the test cases the vehicles appeared to cross the tubes at right angles; however, it was concluded that at very slow speeds even a very slight, undetectable angle could cause double counting due to the speed and sensitivity of the solid-state air switches. This was confirmed by the fact that counters with mechanical diaphragm switches could be adjusted to stop the double counting. Further, the counters with solid-state air switches recorded correctly at the test site when arranged such that only the right side of the vehicles would run over the hoses. This conclusion could explain the high trip rates and, since the very slow speeds would most likely occur in outbound movements at stop signs and signals, it could also explain the grossly incorrect directional distributions.

After this slow speed problem was detected, greater care was taken in placing the counters. The counters were placed as far back from intersections as possible, and the hoses were often kept short to detect only the right side of the vehicles. At sites where these precautions did not eliminate inaccurate counts, the hoses were placed at exaggerated angles to ensure double counting, and then the counts were adjusted later in the data analysis. з

TRAFFIC INFORMATION FOR Data gatmered during week beginning on 11-07-79

SQURCE	DAY	START OF	TOTAL IRAFFIC	INCOMING	OUTGOING
GENERATOR	AVERAGE WEEKDAY MORNINGS	7:30	83	20	63
GENERATOR	AVERAGE WEEKDAY AFTERNOONS	17:00	132	71	60
GENERATOR	SATURDAYS	13:45	83	39	44
GENERATOR	SUNDAYS	12:30	109	56	53
ADJACENT STREET	AVERAGE WEEKDAY MORNINGS	7:30	83	20	63
ADJACENT STREET	AVERAGE WEEKDAY AFTERNOONS	16:45	129	69	60

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AVERAGE WEEKDAY VEHICLE TRIP ENDS :	1118
SATURDAY VEHICLE TRIP ENDS :	945
SUNDAY VEHICLE TRIP ENDS :	839

MISCELLANEOUS_STATISTICS

S WEEKDAY TRIPS IN:

A.H.	PEAK	HOUR	0F	ADJACENT STREET	7.4
P.M.	PEAK	HOUR	0F	ADJACENT STREET	11.5
A.N.	PEAK	HOUR	0F	GENERATOR	7.4
P.H.	PEAK	HOUR	0F	GENERATOR	11.8

RATES PER DWELLING UNIT

SOURCE	DAY	START OF	TOTAL IRAFFIC	INCOMING TRAFFIC	OUTGOING
GENERATOR	AVERAGE WEEKDAY MORNINGS	7:30	.7	•2	.5
GENERATOR	AVERAGE WEEKDAY AFTERNOONS	17:00	1.1	•6	.5
GENERATOR	SATURDAYS	13:45	•7	•3	.*
GENERATOR	SUNDAYS	12:30	.9	.5	.5
ADJACENT STREET	AVERAGE WEEKDAY Mornings	7:30	•7	•2	.5
ADJACENT STREET	AVERAGE WEEKDAY AFTERNOONS	16:45	1.1	.6	•5

AVERAGE WEEKDAY VEHICLE TRIP ENDS :	9.7
SATURDAY VEHICLE TRIP ENDS :	8.2
SUNDAY VEHICLE TRIP ENDS :	7.3

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Figure 1. Example of Key Data Printout Sheet

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These measures greatly reduced the previously described problems; however, some adjustment was needed for the data collected previously. Thus, it was assumed that on a daily basis the entering and exiting traffic should be equal. Accordingly, after the data from each site were analyzed and the daily totals of inbound and outbound traffic compared, multiplicative factors were developed for each day to make the ins and outs equal. Depending on the geometrics of the site and the placement of the counters, these factors adjusted the ins to equal the outs, the outs to equal the ins, or both ins and outs to equal the previous total. The most typical adjustments were to (1) lower the number of exiting trips to equal the number of entering trips in recognition of the slow speed problem with outbound traffic, and (2) change both entering and exiting trips to maintain the same totals where total counts had been taken at two-way entrances. These adjustment factors were then applied to the raw count data under the assumption that the directional errors were distributed equally throughout the day and at all entrances in the case of sites with more than one entrance. This may have introduced some error in the hourly statistics as several arguments could be advanced against the equal distribution assumption; however, no other method of applying the adjustment factors was reasonable. The analysis programs were then rerun with the adjusted data. In the interest of consistency and uniformity within the project, this adjustment technique was employed for every site, regardless of the magnitude of the previously described problems.

At several sites the data analysis yielded statistics that were obviously in error. In all cases the problem could be traced to too much missing data, to site geometrics, or to traffic patterns unrecognized when the site was initially selected. The total count data were salvaged at two of the sites; however, six sites were deleted from the project. Accordingly, the findings were based on a total of 21 shopping centers (a deletion in Danville), 28 subdivisions (a deletion in Northern Virginia), and 21 apartments (deletions in Southeast, Tri-Cities, Charlottesville, and Danville).

FINDINGS

The findings of the study and general discussion pertaining to each major purpose are presented in this section of the report. More detailed discussion is presented where feasible in the next section on statistical analyses. As mentioned previously, the terminology and definitions used in the ITE report $^{(3)}$ were employed in the analyses. In particular, it should be noted that weighted averages were developed for the various comparative analyses; that is, average trip rates were calculated by dividing the sum of the trip ends by the sum of the independent variables. Tabulations in the body of the report have been reduced to the fewest possible; however, very detailed supportive data are contained in the appendices in order to benefit planners and engineers in each area. Appendix A, for example, contains comprehensive statistics for each of the 70 sites.

Virginia Trip Rates Versus National Averages

The information presented in Tables 2 through 13 addresses the question of whether Virginia statistics are comparable to nationally derived statistics.

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Comparison of Trip Generation Statistics Category: Shopping Center; 50,000-99,999 Square Feet Trips/1000 sq. ft. GLFA

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= Institute of Transportation Engineers, Ref. 3
= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6

ITE TGIF GTIS

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	NCHRP	97.0	11.2	12.0		1
	GTIS	. 62.1	6.7	6.8		1
	TCIF Range	7.7-158.6	ł		1	1
5	Average for TGIF(a)	64.4	1	6.8	1	1
y Research Program Report 187, Ref. 5	ITE Range	25.5-161.3	1	1	1	1
	Average for ITE	79.1	8.2	9.1	107.6	12.6
	Virginia Range	90.4-116.6	10.0-10.6	10.5-11.3	116.9-147.8	10.4-11.9
tive Highway	Average for Virginia	101.2	10.2	10.8	129.7	11.3
NCHRP = National Coopera	Source Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

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(a) Zero generator shopping center.

Comparison of Trip Generation Statistics Category: Shopping Center; 100,000-199,999 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 ITE TGIF GTIS

KP = National Coopera	itive Highway	/ Kesearch Pr	rogram keport	: 18/, Ret.				a an
Source Lstic	Average for Virginia	Virginia Range	Average for ITE	ITE Range	Average for TGIF(a)	TGIF Range	GTIS	NCHRP
age Weekday cle Trip Ends	76.2	53.9-104.9	60.4	32.1-103.7	64 . 4	7.7-158.6	44.8	45.9
day Vehıcle Trip During PM Peak Adjacent Street	7.3	4.9-11.1	5.0	1	1	-	4.7	5.1
day Vehicle Trip : During PM Peak · Generator	7.9	5.1-11.7	5.5	ļ	6.8	ł	5.7	5.2
ırday Vehicle Ends	92.5	58.8-115.0	7.97	1	l e	Ĩ	8	
urday Vehicle Trip b During Peak Hour erator	8,8	5.0-10.9	7.9			1	1	1

(a)_{Zero} generator shopping center.

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Comparison of Trip Generation Statistics Category: Shopping Center; 200,000-299,999 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3 ITE

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= Trip Generation Intensity Factors, Ref. 4 = Guidelines for Traffic Impact Study, Ref.

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	NCHRP	45.9	5.1	5.2	ļ	1
	SITƏ	44.8	4.7	5.7		1
	TGIF Range	23.8-66.7	1	1	1	1
5	Average for TGIF(a)	41.0	 	4.5	1	1
t 187, Ref.	ITE Range	18.0-92.0	1	1	1	1
rogram Report	Average for ITE .	49.9	4.8	5.3	82.7	8.3
/ Research Pi	Virginia Range	43.8-48.1	3.7-4.5	3 . 9-4 . 6	56.3-74.8	4.7-7.6
itive Highway	Average for Virginia	45.3	4.2	4.4	62.6	6.1
NCHRP = National Coopera	Source Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

(a) One generator shopping center.

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Comparison of Trip Generation Statistics Category: Shopping Center; 300,000-399,999 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 ITE TGIF GTIS

NCHKP = National Coopera	ative Highway	/ Research P	rogram Report	t 18/, Ref.	~			
Source Statistic	Average for Virginia	Virginia Range	Average for ITE	ITE Range	Average for TGIF (a)	TGIF Range	GTIS	NCHRP
Average Weekday Vehicle Trip Ends	72.5	4	40.4	16.0-58.4	41.0	23.8-66.7	44.8	45.9
Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	7.4	1	5.2	1	1	1	4.7	5.1
Weekday Vehicle Trip Ends During PM Peak Hour Generator	7.4		5.2	1	4.5	1	5.7	5.2
Saturday Vehicle Trip Ends	91.9	1	78.9	1	1	l	ļ	l I
Saturday Vehicle Trip Ends During Peak Hour Generator	9.5		10.8	ł			1	l
(o)								

(a) One generator shopping center.

Comparison of Trip Generation Statistics Category: Shopping Center; 400,000-499,999 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 ITE TCIF CTIS

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	NCHRP	45.9	5.1	5.2	1	ł
	GTIS	. 44.8	4.7	5.7	8	1
	TGIF Range	19.3-71.4	1	ł	1	
10	Average for TGIF(a)	47.6	1	4.4		
t 187, Ref.	ITE Range	29.9-90.0	1	1	1	1
rogram Repor	Average for ITE	47.6	5.7	5.0	66.1	1
/ Research P1	Virginia Range	1	1		1	
itive Highway	Average for Virginia	47.2	3.8	4.2	59.5	5.2
NCHRP = National Coopera	Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

(a) Small two + generator shopping center.

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Shopping Center; 500,000-999,999 Square Feet Trips/1000 sq. ft. GLFA Comparison of Trip Generation Statistics Category:

= Institute of Transportation Engineers, Ref. 3

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 ITE TGIF GTIS

(a)Medium two + generator shopping center.(b)Estimated by adding ins and outs.

Comparison of Trip Generation Statistics Category: Shopping Center; Over 1,250,000 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3 ITE

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 TGIF GTIS

	NCHRP	33.5	3.2	3.9	1	
	GTIS	41.7	3.5	4.2	1	ļ
	TGIF Range	17.0-57.1	1	l T	-	ļ
	Average for TGIF(a)	29.6	1	2.3	ł	
: 187, Ref.	ITE Range	18.9-35.7	1.8-2.9	2.3-4.1	1	1
cogram Report	Average for ITE	26.5	2.6	3.1	34.3	4.3
r Research Pı	V1rginia Range	ł	1	-	1	1
tive Highway	Average for Virginia	34.0	2.5	3.1	42.2	3.8
NCHRP = National Coopera	Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

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(a) Large two + generator shopping center.

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Table	

Comparison of Trip Generation Statistics Category: Neighborhood Shopping Center; Under 100,000 Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3
= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 LTE TCIF GTIS

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NCHRP = National Coopera	itive Highway	y Research Pi	rogram Report	t 187, Ref.	2			
Source Statistic	Average for Virginia	Virginia Range	Average for ITE(a)	ITE Range (a)	Average for TGIF(b)	TGIF Range (b)	GTIS	NCHRP
Average Weekday Vehicle Trip Ends	101.2	90.4-116.6	88.6	21.5-270.9	64.4	7.7-158.6	62.1	97.0
Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	10.2	10.0-10.6	11.1	1	1	1	6.7	11.2
Weekday Vehicle Trip Ends During PM Peak Hour Generator	10.8	10.5-11.3	11.2	Į	6.8	i	6.8	12.0
.Saturday Vehicle Trip Ends	129.7	116.9-147.8	117.3				1	
Saturday Vehicle Trip Ends During Peak Hour Generator	11.3	10.4-11.9	12.6		a s	1	1	
a)Retimated by averaging	TTF rates				E			and and a second se

(b) Zero generator shopping center.

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Table	

Community Shopping Center; 100,000-499,999 Square Feet Comparison of Trip Generation Statistics Trips/1000 sq. ft. GLFA Category:

= Institute of Transportation Engineers, Ref. 3 ITE

= Trip Generation Intensity Factors, Ref. 4 TGIF GTIS

= Guidelines for Traffic Impact Study, Ref. 6

	NCHRP	45.9	5.1	5.2			
	GTIS	44.8	4.7	5.7			
	TGIF Range (b)	7.7-158.6		1	1		e feet
5	Average for TGIF(b)	51.6		5.4			1611DS 999-99
t 187, Ref.	ITE Range ^(a)	16.0-103.7	1			1	00.000 and 40
rogram Repor	Average for (a) ITE	48.9	5.1	5.2 .	74.9	8.8	s hetween 1(
y Research P	Virginia Range	43.8-104.9	3.7-11.1	3.9-11.7	56.3-115.0	5.3-87.7	in categorie
ative Highwa	Average for Virginia	61.2	5.7	6,1	77.5	26.4	e ITE rates
NCHRP = National Cooper:	Source Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Nour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator	(a) _{Estimated} by averagin

(b) Estimated by averaging TGIF rates for zero generator, one generator, and small two + generator shopping centers.

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Comparison of Trip Generation Statistics Category: Regional Shopping Center; 500,000 and Over Square Feet Trips/1000 sq. ft. GLFA

= Institute of Transportation Engineers, Ref. 3 ITE

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6 TGIF GTIS

NCHRP = National Cooper Source	ative Highwa Average for	y Research Pi Virginia	rogram Repor Average for (a)	t 187, Ref. ITE	Average for (h)	TGIF (,,)		
Statistic	Virginia	Range	ITE (a)	Range (a)	TGIF	Range ^(D)	GTIS	NCHRP ^{1C1}
Average Weekday Vehicle Trip Ends	35.9	27.644.8	32.0	16.4-61.2	31.7	14.0-63.2	41.7	34.1
Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	3.0	2.3-4.0	2.9	1.8-5.1	1	1	3.5	3.3
Weekday Vehicle Trip Ends During PM Peak Hour Generator	3.3	2.5-4.1	3.3	1.5-4.8	3.0	ļ	4.2	3.9
Saturday Vehicle Trip Ends	49.1	33.3-70.4	40.1	27.2-55.8	1	1		1
Saturday Vehicle Trip Ends During Peak Hour Generator	4.7	2.9-6.9	5.6	4.2-10.0	1	[
<pre>DEstimated by averagin()Estimated by averagin()Estimated by averagin()Estimated by averagin()</pre>	g ITE rates g TGIF rates g NCHRP rate	in categorie for medium t s in categor	s 500,000 an wo + generat ies 500,000	ld over squar or and large and over squ	e feet. two + gener are feet.	rator shoppin	ng center.	

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Table

Comparison of Trip Generation Statistics Category: Apartments; Trips/Dwelling Unit

= Institute of Transportation Engineers, Ref. 3

= Trip Generation Intensity Factors, Ref. 4
= Guidelines for Traffic Impact Study, Ref. 6

ITE TGIF GTIS

			1		Native and a California Contraction of Contractiono	
	NCHRP ^(a)	6.0/7.0	0.6/0.8	0.6/0.8		1
	GTIS	7.5	0.8	0.8		1
	TGIF Range	0.9-13.3	1	Ĩ	1	1
5	Average for TGIF	6.7		6.0		1
t 187, Ref.	ITE Range	0.5-12.3	0.1-1.6	0.1-1.6	, 2.8-8.4	1
rogram Repor	Average for ITE	6.1	0.7	0.7	6.5	0.5
y Research P	Virginia Range	5.1-9.2	0.4-0.9	0.5-0.9	4.4-9.2	0.3-0.8
tive Highwa	Average for Virginia	6.9	0.6	0.7	7.2	0.6
NCHRP = National Coopera	Source Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

(a) Rates for apartments/town houses.

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Comparison of Trip Generation Statistics Category: Single-Family Detached Housing; Trips/Dwelling Unit

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= Institute of Transportation Engineers, Ref. 3 ITE

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9.3/10.2

1.0/1.1

1.0/1.1

NCHRP^(a)

Kates for 1 to 2 DU/Acre / 3-4 DU/Acre.

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Specifically, key statistics calculated by combining the data from various sites in Virginia are compared in the tables with the statistics contained in the four documents cited previously. The maximum and minimum rates are shown where available. Several categories contain only one Virginia site; accordingly, a range of values is not given. The categorical stratification is the same as used by the ITE, with the exception that shopping centers have also been stratified into the traditional neighborhood, community, and regional shopping center classifications. Appendix B contains a more complete set of Virginia statistics for each of the categories in the tables. Following are general observations on the comparisons.

Shopping Centers

Average weekday trip rates for shopping centers in Virginia are generally higher than the comparable rates listed in the references. In some instances, primarily within the ITE categories, the rates are substantially higher. Unfortunately, these large differences are probably the result of the limited number of Virginia sites in several of the categories. As the sites are aggregated into the three traditional classifications, these large differences are reduced.

There is very little uniformity or consistency within the comparisons as to which source of data provides a rate closest to the Virginia rate. Again, as the sites are aggregated, patterns begin to emerge. The rates reported in the GTIS, which were developed for the Richmond area, are the most inaccurate in the three categories of neighborhood, community, and regional shopping centers. The ITE rates consistently rank second in closeness to the Virginia rate; however, the rates are always reasonably close.

It is also important to consider the range of rates where available in each category. With only one exception, the average weekday rates for Virginia shopping centers in each category fall within the maximum and minimum rates tabulated in the ITE and TGIF reports, and only one Virginia site is included in this particular category. When the range of statistics for Virginia sites is considered, one additional Virginia site falls above the maximum in the ITE data in that category.

Apartments

Average weekday trip rates for Virginia apartments are reasonably close to the estimates in all four references, being only 13% higher than the most inaccurate rate. The rate in the TGIF report is the closest, with the ITE rate being the most different. Again, it is important to note that the differences are relatively small. As to the range of rates, all the Virginia sites have trip rates within the maximum and minimum rates given in the ITE and TGIF reports.

Subdivisions

Average weekday trip rates for single-family detached housing in Virginia are essentially the same as the rates provided in the ITE, TGIF, and GTIS reports. Since two rates are provided in the NCHRP report, depending on the density of the development, it is impossible to say that the rates are the same as Virginia rates. It is certainly reasonable, however, to note that the rates are very close. Rates for all the Virginia sites fall within the reported maximum and minimum rates.

Comparison of Trip Rates Among Urban Areas in Virginia

Tables 14 through 18 present the statistics comparing trip rates among the urban areas in Virginia. The tables have the same format as the previous tables, except that the statistics for each urban area are contained in the columns. Data for the five urban areas having a population of less than 50,000 have been combined into a "small urban" category. Also, the shopping centers are stratified by only the neighborhood, community, and regional classifications. Appendix C contains a complete set of statistics for each urban area. Following are general observations on the comparisons.

Shopping Centers

The average weekday trip rates for community shopping centers throughout the state are for the most part reasonably close to the state average. The largest difference is for the Peninsula, where the rate is 33% above the average. Northern Virginia is excluded from this observation as data were not obtained for community centers in that area. The Southeast and Peninsula rates exhibit the largest difference between two areas, with the Peninsula rate being 66% higher.

Average weekday trip rates for regional centers are even closer, with the largest difference of plus 25% occurring in Roanoke. The largest difference in rates between two areas occurs between Roanoke and Peninsula, with the Roanoke rate being 52% higher. Again, due to data limitations, it is noted that the Southeast, Tri-Cities, Lynchburg, and the small urban areas are excluded from this observation.

Data are available for only two neighborhood centers, one in Peninsula and one in Lynchburg. The Peninsula rate is 29% higher than the Lynchburg rate.

Apartments

Average weekday trip rates for Virginia apartments are spaced relatively close around the state average, with the largest difference being in Lynchburg, where the rate is 25% higher. The rate in Peninsula is 22% lower, which means that Lynchburg has a rate 59% higher than Peninsula. The trip rate tends to be larger in the smaller urban areas.

Subdivisions

Average weekday trip rates for single-family detached housing in Virginia are even more tightly spaced around the state average. The rate in Richmond, which is 16% lower than the average, exhibits the largest difference. This is followed closely by the Peninsula rate, which is 13% lower. The maximum

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Comparison of Trip Generation Statistics Among Virginia Areas Category: Neighborhood Shopping Center; Under 100,000 Square Feet Trips/1000 sq. ft. GLFA

Area Statistic	Northern Virginia	Southeast	Peninsula	Richmond	Roanoke	Tri-Cities	Lynchburg	Small Urban
Average Weekday Vehicle Trip Ends	1	3	116.6	1	1	1	90.4	
Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	-	-	10.6	1	I		10.0	1
Weekday Vehicle Trip Ends During PM Peak Hour Generator	1	1	11.3			. 	10.5	1
Saturday Vehicle Trip Ends	ļ	1	147.8		1	1	116.9	1
Saturday Vehicle Trip Ends During Peak Hour Generator	1	1	10.4	1			11.9	E

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Comparison of Trip Generation Statistics Among Virginia Areas Category: Community Shopping Center; 100,000-499,999 Square Feet Trips/1000 sq. ft. GLFA

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Small Urban	57.1	5.1	5.5	78.1	7.6
Lynchburg	68.8	7.1	7.5	96.5	9.1
Tri-Cities	62.2	6.5	6.7	74.6	7.6
Roanoke	78.9	8.5	8.5	103.5	9.5
Richmond	72.5	7.4	7.4	91.9	9.5
Peninsula	81.7	7.0	.8.2	83.1	7.5
Southeast	1.94	4.1	4.5	59.3	5.1
Northern Virginia		•	1	1	1
Area Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

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Comparison of Trip Generation Statistics Among Virginia Areas Category: Regional Shopping Center; 500,000 and Over Square Feet Trips/1000 sq. ft. GLFA

4 . 0	4.0	4.0 4.0 63.9
3.5	3.5	3.5 3.5 60.6
2.5	2.5	2.5 2.7 36.8
. 2.8	2.8 .4	2.8 3.4 45.4
Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street Weekday Vehicle Trip Ends During PM Peak Hour Generator	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street Weekday Vehicle Trip Ends During PM Peak Hour Generator Saturday Vehicle Trip Ends
	Weekday Vehicle Trip Weekday Vehicle Trip Ends During PM Peak 3.4 Hour Generator	Weekday Vehicle Trip Ends During PM Peak3.42.73.54.0Funds During PM Peak3.42.73.54.0Hour GeneratorSaturday Vehicle45.436.860.663.9Trip Ends45.436.860.663.9

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Comparison of Trip Generation Statistics Among Virginia Areas Category: Apartments; Trips/Dwelling Unit ---

Small Urban	7.7	0.6	0.7	7.7	0.7
Lynchburg	8.6	0.8	6.0	8.7	0.7
Tri-Cities	6.7	0.7	0.8	7.5	0.8
Roanoke	8.1	0.7	0.7	8°3	0.6
Richmond	6.7	0.7	0.7	<i>i</i> .3	0.6
Peninsula	5.4	0.5	0.6	5.6	0.5
Southeast	6.9	0.6	0.6	7.1	0.6
Northern Virginia	6.8	0.6	0.7	7.2	0.6
Area Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During PM Peak Hour Adjacent Street	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	Saturday Vehicle Trip Ends During Peak Hour Generator

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Table 18

Comparison of Trip Generation Statistics Among Virginia Areas Category: Single Family Detached Housing; Trips/Dwelling Unit

Area	Northern Virginia	Southeast	Peninsula	Richmond	Roanoke	Tri-Cities	Lynchburg	Sma11 Urban
Ŋ	10.2	10.3	8.7	8.4	10.4	10.2	10.6	10.8
Trip Peak treet	6.0	6.0	6.0	1.0	1.1	1.0	1.0	0.9
Trip Peak	1.0	6.0	0.9	1.0	1.2	1.0	1.0	1.0
0)	10.7	10.0	6.7	9.3	10.5	10.3	10.3	10.5
e Trip k Hour	6.0	0.8	6.0	0.8	1.0	6°0	6.0	6.0

difference in rates between two areas is for the "small urban" areas and Richmond, where the "small urban" areas have a rate 29% higher. Again, there is a tendency for the trip rate to be higher in the smaller areas.

Temporal Changes in Trip Rates

During the conduct of this study, data were obtained at eight sites for which similar data were also available from studies conducted around 1970. These sites consisted of 5 shopping centers, 1 apartment, and 2 subdivisions. Table 19 summarizes the comparison of key statistics from the current study to the same statistics from the previous studies.

Since 1970, average weekday trip rates at 4 of the 5 shopping centers have increased, with the increases ranging from 30% to 66%. The one exception, which is the only regional center, has experienced a slight decrease of 6%. These statistics suggest that the numbers of shopping trips have certainly been unaffected by the energy shortage and fuel price increases. The statistics might also suggest that shopping trips have become shorter, shifting to the more localized neighborhood and community center. Both observations are speculative at best due to the limited data.

Average weekday trip rates have decreased by 7% and 21% at 2 of the 3 residential sites, with the other site experiencing a slight rate increase of 6%. These statistics are more reasonable with respect to the aforementioned energy situation; however, such an observation is still speculative at best due to the limited data.

Evaluation of the Department's Subdivision Policy

Based on a total of 28 subdivisions located throughout Virginia, the average subdivision generates 10.0 trips per dwelling unit per day. Individual subdivisions have trip rates ranging from 6.6 to 13.5 trips per dwelling unit per day. Subdivisions were also stratified by urban area, and the average rates for each of the seven largest metropolitan areas and a combination of five small urban areas range from 8.4 to 10.8 trips per dwelling unit per day. Although a few subdivisions had rates of 7.0 or lower, the statistics above indicate that the Department's policy of 7.0 trips per dwelling unit per day is considerably lower than the average rates found in Virginia.

Temporal Distribution of the Peak Hours

Based on the statistics available in Appendix A, the temporal distribution of the peak hours of traffic volume among the various land uses can be reviewed. Following is a discussion of the peak hours by land use.

Shopping Centers

As might be expected, the peak a.m. two-way traffic flow occurs between 11:00 a.m. and noon on the typical weekday for all of the shopping centers sur-

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Table 19

Current Trip Rates Versus 1970 and 1971 Trip Rates (Trips per 1000 Square Feet GLFA or Dwelling Unit)

		1	1	+		r -
327	Current	12.2	1.1	1.2	12.1	ates
. oN	Reference I	11.5			6.7	the St
309	Current	11.0	0.5	1.0	10.6	ed by
No.] Reference	13.9	0.6	1.2	12.0	onduct
11	Jusilud	6.3	0.6	0.7	7.1	ions C
No. 2	keference 2	6.8	0.6	0.7	7.7	stigat:
16	JustiuJ	90.4	7.5	10.5	116.9	r Inve
No. 1	l I I	54.4	3.9	8.1	Į	Simila
.15	Current	68.8	4.7	7.5	96.5	with
No. 1] Keference	43.8	2.9	4.7	60.8	studies
110	Current	72.5	6.0	7.4	91.9	ition 5
No.	2 Keference	55.7	4.0	5.8	7.9.7	Genera
102	Juszzud	53.9	4.2	5.1	58.8	n Trip Decemi
. oN	Seference I	35.1	3.2	3.9	1	a Urbai ornia
101	Current	42.8	3.2	4.1	51.3	<u>irgini</u> Calif.
No.	Reference 3	45.4	l J		50.8	n of V nd and
Site Number Source of Data	Statistic	Average Weekday Vehicle Trip Ends	Weekday Vehicle Trip Ends During AM Peak Hour Generator	Weekday Vehicle Trip Ends During PM Peak Hour Generator	Saturday Vehicle Trip Ends	References: 1) Compariso

01 Maryland and California, December 9, 19/1.
2) <u>Richmond Trip Generation Study</u>, February 1970.
3) Unpublished data from Metropolitan Washington Council of Governments, May 19/0.

veyed. The p.m. peak volumes are very stratified when considered on a 15minute basis; however, 16 of the 21 sites have peak flows that begin during the traditional peak work trip hours of 4 p.m. to 6 p.m. Fourteen centers have peak hours beginning between 4:15 p.m. and 5:15 p.m. On Saturday, the peak hours generally occur during midday, with 14 sites having the beginning of the peak hour between 11:30 a.m. and 3:00 p.m.

Apartments and Subdivisions

Both apartments and subdivisions follow the expected pattern of having peak hour volumes between the traditional work trip peaks of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Exceptions occur at only 8 of the 49 sites. The most frequent a.m. peak hours begin between 7:00 a.m. and 7:30 a.m.; whereas the most frequent p.m. peak hours begin at either 4:45 p.m. or 5:00 p.m. Peak hours on Saturday occur throughout the day, and are somewhat concentrated around the hours of 4:00 p.m. to 7:00 p.m.

Comparison of Sites With Transit Service and Sites With No Transit Service

It is logical to assume that sites which have no transit service would have higher vehicle trip rates than comparable sites having transit service. This stratification was made within the sites surveyed in this study, and a discussion of the results follows.

Shopping Centers

The community shopping center is the only category of shopping centers having enough sites to develop a comparison of transit service versus no transit service. The average weekday trip rate of the 5 centers having no transit service is 76.9 vehicle trip ends per 1,000 square feet GLFA, whereas the comparable statistic for the 7 centers having transit service is 58.9. This difference in trip rate suggests that transit service does indeed cause a reduction in vehicle trips.

Apartments and Subdivisions

In the case of apartments, the comparison is based on 11 complexes with transit service and 10 complexes with no transit service, whereas only 6 of the 28 subdivisions are served by transit. For both land uses the average weekday trip rate per dwelling unit is higher for the group served by transit. Obviously, this is contrary to the hypothesis.

STATISTICAL ANALYSES

If certain assumptions are made regarding the data collected, some basic statistics can be calculated for the various categories and some basic statistical testing can be conducted. The key assumption is that of homogeneity within each group. That is, within each category, e.g., subdivisions in Virginia, it must be assumed that the results from each surveyed site represent an estimate of that category or population. If that is true, the various statistical procedures can be employed.

The results of any statistical evaluations must be used cautiously in view of the adjustments to the data described earlier in the report. It is simply not valid to draw detailed conclusions based on the results of statistical analyses performed on data that are not that accurate. Categories containing a relatively large number of sites can be assumed to be more accurate than categories containing relatively few sites.

Statistical confidence intervals can be placed on the data collected at the various sites in Virginia, and these are shown in Table 20 for the key statistics often used by planners. A normal distribution was assumed.

The TGIF and ITE reports are the only two that provide enough statistics for statistical comparisons of Virginia data and the nationally averaged data. As noted previously, the neighborhood shopping center data for Virginia are inadequate for statistical computations due to the sample size; therefore, comparisons can be made only for community shopping centers, regional shopping centers, apartments, and subdivisions. The sample size, the average, and the variance are needed to statistically test for differences between two sets of data. All three statistics are available, or can be calculated, from information provided in the TGIF report. The ITE report does not provide a variance; therefore, it was assumed that the variances for each category are the same as the variances found in the comparable category in the TGIF report. While this is not exactly correct, it does provide an estimate that is certainly within the degree of accuracy of the data. In comparing Virginia average weekday trip rates for the four aforementioned land use categories and the comparable average rates provided in the TGIF and ITE reports, statistical testing resulted in only one finding of a significant difference, that being the rate of Virginia apartments versus the rate reported by the ITE. This lone exception is based statistically on the fact that a difference of 1.0 in the average rates is greater than the computed test criterion of 0.9. In view of the aforementioned data limitations and assumptions, however, this difference is not practically significant.

In reviewing the data for the various urban areas, it is apparent that most stratifications by urban area result in sample sizes too small to yield valid statistical comparisons, especially in view of the data limitations. Several comparisons, however, were developed for the residential land uses. First, both apartments and subdivisions were stratified by their location in urbanized areas (greater than 50,000 population) versus small urban areas. In each case, statistical testing resulted in the conclusion that there is no difference between the average weekday trip rate at locations in urbanized areas and that for small urban areas. Second, it was hypothesized that residential trip rates in the largest urban areas, i.e., Northern Virginia, Southeast, Peninsula, and Richmond, are higher than rates in the smaller areas. Average weekday trip rates for subdivisions in the larger urban areas do not differ statistically from the rates in smaller areas. However, the average weekday trip rate for apartments in the larger areas is significantly lower than the rate in smaller areas; 6.6 versus 7.9. This conclusion was based on the fact that the difference of 1.3 is greater than the computed test criterion

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Statistical Analyses of Virginia Data

Category/Statis	tic	Sample Size	Arithmetic Average	95% Confidence Intervals
Shopping Center Neighborhood	s (Trips/1000 ft. ² GLFA) - Average Weekday	2	103.5	*
)	- PM Peak Hour Adjacent Street	2	10.3	*
	- FM Peak Hour Generator	2	10.9	*
Community	- Average Weekday	12	66.4	54.2-78.6
	- PM Peak Hour Adjacent Street	12	6.3	4.9-7.7
	- PM Peak Hour Generator	12	6.7	5.2-8.2
Regional	- Average Weekday	7	36.6	30.5-42.7
	- PM Peak Hour Adjacent Street	7	3.1	2.5-3.7
	- PM Peak Hour Generator	7	3.4	2.8-4.0
Apartments (Tri	ps/D.U.)			
	- Average Weekday	21	7.1	6.5-7.7
	- PM Peak Hour Adjacent Street	21	0.6	0.5 - 0.7
	– PM Peak Hour Generator	21	0.7	0.6-0.8
Subdivisions (T	rips/D.U.)			
	- Average Weekday	28	10.0	9.3-10.7
	- PM Peak Hour Adjacent Street	28	0.9	0.8 - 1.0
	- PM Peak Hour Generator	28	1.0	0.9 - 1.1

*Not valid due to sample size

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of 1.0, and, due to the data limitations, it is somewhat questionable whether this difference is practically significant.

With regard to the Department's policy of using 7.0 daily trips per dwelling unit for subdivisions, the statistics in Table 20 add credibility to the conclusion that this rate is low. Statistically, one can be 95% confident that the true daily rate for subdivisions in Virginia falls within the range of 9.3 to 10.7 trips per dwelling unit.

Finally, statistical testing was applied to the average weekday trip rates for community shopping centers having transit service versus those for centers not having service. As described previously, the data suggest that transit service does indeed cause a reduction in trip rates. Because of the large variability in the data, however, the statistical test resulted in the conclusion that there is no reason to believe that the average trip rate of 76.9 at community shopping centers having no transit service is higher than the rate of 58.9 found at community centers served by transit.

CONCLUSIONS

Based on the findings of the study, and in recognition of the data limitations described, the following conclusions have been developed.

- 1. Although trip generation rates for shopping centers, apartment complexes, and subdivisions in Virginia do differ from comparable rates derived from averaging nationwide statistics and reported in the reviewed references, there is no reason to conclude that these differences are statistically significant. These differences are small for those categories having large sample sizes, i.e. apartments and subdivisions. As the individual shopping center data are aggregated into the traditional categories of neighborhood, community, and regional, that is, when the sample sizes are increased, the differences between Virginia statistics and nationwide statistics become less.
- 2. The above conclusion cannot be literally applied to other land uses for which planners often need to develop trip forecasts; however, there is certainly no strong evidence that trip rates specific to Virginia are needed for other land use categories. It is suspected that the large variabilities encountered within the surveyed land use categories will also occur within other land uses, which would likely result in a finding of no statistically significant differences.
- 3. The review of the referenced documents revealed no general pattern as to which one provides the most accurate estimate of the average Virginia rates developed for the various land use categories. The statistics in the ITE report are the most current, and while not always the closest, they are consistently reasonably close to the Virginia statistics.
- 4. Trip generation rates differ among the urban areas of the state; however, these differences tend to be less as the sample size is increased. That is, the differences in trip rates at apartments and subdivisions located in the various urban areas are not as great as the trip rate differences at shopping centers, which generally have a fewer number of samples in
each category. In applying statistical tests to several stratifications of the residential land uses, the only evidence of a significant difference was that apartment complexes in Northern Virginia, Southeast, Peninsula, and Richmond generate fewer trips than do complexes in the other areas. This conclusion is suspect, however, due to the magnitude of the test numbers and data limitations. Therefore, while the various urban areas do exhibit different average trip rates for all the land use categories surveyed, the lack of data precludes statistical conclusions regarding these differences. As supported by the previous comments regarding sample sizes, there is reason to believe that these differences would decrease with larger sample sizes.

- 5. There is evidence that the number of shopping trips has increased since 1970; however, the trips may have shifted to sites closer to home. On the other hand, overall home-based trips have decreased. Both observations are speculative at best because of the extremely limited data.
- 6. The Department's current policy of using 7.0 trips per dwelling unit to derive estimates of daily traffic at proposed subdivisions is not in line with the findings of this study. Data from the study indicate that at the 95% confidence level the daily trip rate for subdivisions in Virginia lies between 9.3 and 10.7 trips per dwelling unit, with an average of 10.0 trips/D.U. At the same confidence level, it can be said that a rate of 0.9 to 1.1 trips per dwelling unit, with an average of 1.0, occurs during the p.m. peak hour of the subdivisions, which most typically occurs during the traditional p.m. rush hours. There is also no evidence to conclude that these rates differ statistically among the areas of the state.
- 7. During the week the peak morning traffic flow at shopping centers occurs between 11:00 a.m. and noon, whereas the peak traffic hour during the afternoon and evening most typically occurs between 4:15 p.m. and 6:15 p.m. On Saturday, shopping centers most typically experience peak traffic during midday. The majority of both apartment complexes and subdivisions experience weekday peak hour traffic between 7:00 a.m. and 8:30 a.m. and again between 4:45 p.m. and 6:00 p.m. The peak Saturday hour at apartments and subdivisions occurs most often between 4:00 p.m. and 8:00 p.m.
- 8. There is no evidence to support the hypothesis that trip rates are higher at sites not served by transit. In fact, the average rates at both apartments and subdivisions not served by transit are actually lower than those at sites having transit service. Although the trip rate at community shopping centers not served by transit is higher than the rate at those served by transit, the difference is not statistically significant.

RECOMMENDATIONS

Based on the results of this study, the following recommendations are made.

1. When the need arises to forecast trip productions or attractions for a shopping center, apartment complex, or subdivision in Virginia, it is recommended that the most current trip rates developed by the Institute of

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Transportation Engineers in its Informational Report entitled <u>Trip Generation</u> be utilized as a starting point. This document is the most current and comprehensive of those reviewed, and there is no evidence to conclude that Virginia rates differ in statistical comparisons. Rates do differ somewhat among the areas of the state, and rates can be modified if local data suggest that the ITE rate is substantially different. Although this recommendation applies only to the above three categories of land use, it is suggested that, in the absence of better information, the above procedure be used for any other category of land use.

- 2. The Department should change its current policy concerning subdivision trip generation to reflect the findings of this study; that is, each lot will generate 10 vehicles per day. The peak hour generation of 1.0 trip per dwelling unit should also be incorporated into the policy as there is sometimes a need to consider impacts at peak hours.
- 3. Based on the experience gained during the data collection phase of the study, it is recommended that anyone collecting volume data with automatic traffic recorders exercise extreme care in placing the road tubes near intersections. The slow speed, stop-and-go situation results in inaccurate counts. The discussion in the body of this report suggests ways to mitigate this problem.

ACKNOWLEDGEMENTS

The author expresses appreciation to John Shelor and Steve Blackwell for their efforts in collecting the data; to Linwood Butner and his staff for their cooperation in providing traffic counters and their assistance in defining the data collection problems; to Bill Carpenter for his help in the statistical analysis; to Jerry Korf and Jennifer Ward for their efforts in processing the large amount of data; and to Jan Kennedy for her patience and efforts in typing the draft, especially the large number of tabulations.

Also acknowledged are the helpful comments and suggestions provided by Harry Craft, Neal Robertson, Ben Cottrell, and Chuck Hughes.

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APPENDIX A

Comprehensive Virginia Statistics for Each Site

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INDEX TO SITE NUMBERS

Area	Shopping Center Site No.	Apartment Site No.	Subdivision Site No.
Northern Virginia	100 101	200 201 202 203	300 301 302 303 304 305
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TRIP GENERATION RATES

SHOPPING CENTERS

	% Weekday I: Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour 1.5 k Hour 7.3 6.3 9.1	Measured Trip Race	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	k Hour $\frac{1.1}{7.8}$ k Hour $\frac{7.8}{7.5}$ $\frac{9.6}{9.6}$	Measured Trip Race		
	AVERACE WEEK	DAY VEHICLE	REP ENDS	34.0	AVERAGE WEEK	RIP ENDS	42.8		
j	Peak	A.M.	Enter	0.4	Peak	A.M.	Enter	0.3	
\neg	Hour	Between	Exit	· 0.1	Hour	Between	Exit	0.1	
	of.	7 and 9	Total	0.5	of	7 and 9	Total	0.5	
	Adjacant	2 4	Enter	1 1	Adjacent	D W.	Enter	1.7	
	ML) CLEME	200000	Exit	1.3	Acjacent	Januar	Exi:	·1.7	
Ø	Street	between	Total	2.5	Street	d and d	Total	0 0	
	Peak		Eater	2.5	Peak	1.4	Enter	1 9	
	Zour		Freit	1.3	Your		Frete		
	• _		Tatal	0.8	addr		Tetal	1.4	
	oř	א כ	local	2.1 -	ož			<u></u>	
	Generator			1.9	Generator			د د ا مستحدی مستحد 1 (
			Exit	1.2			E:ci:	د بن کے محمد	
4			Total	3.1			Total	4.1	
	SATURDAY VE	HIGE TOTO E	īDS	42.2	SATURDAY VE	HOE TRP IN	īs	51.3	
	Peak		Inter	1.8	Peak		Enter	2.7	
	Hour of		Exit	2.1	Eour of		I:: I	2.6	
€	Generator		Total	3.8	Generator		Total	5.3	
	SUNDAY VEHI	ai rr er	5	21.8	SUNDAY VEEL	CE TEP ENES		20.0	
	Peak		Enter	1.5	Peak		Enter	1.7	
Ę	Ecur of		Exit	1.7	Hour of		Exit	1.7	
	Generator		Total	3.2	Generator		Total	3.4	
×	Site: 10 Independent Adjacent St Generator F Weekday Sat	0 Date: Variable: 10 . Peak Hours: Peak Hours: 11:00-12:00 2:30-3:30 1	8/5/80 - 8/1 00 sq.ft. GLI 7:30-8:30 AM A.M. 7:00-8	2/80 FA - 1,268.0 ;4:15-5:15 Pi :00 PM	Sita: 101 Independent Adjacent St. Generator Pe Weekday Sat.	Date: Variable:100 Peak Hours: Peak Hours: 11:00-12:00 11:30-12:30	8/13/80 - 8/ 0 sq.ft. GLFA 7:15-8:15AM;4 AM 5:45-6:45 PM	20/80 - 685.0 :15-5:15PM PM	
	Sun.	2:15-3:15	PM		Sun.	Sac. 11:30-12:30 PM			

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TRIP GENERATION RATES

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SHOPPING CENTERS

t <u></u>							
% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>1.8</u> k Hour <u>9.2</u> <u>7.7</u> <u>9.5</u>	Measured Trip Rate	Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>1.0</u> k Hour <u>8.0</u> <u>7.5</u> <u>9.0</u>	Measured Trip Rate
AVERAGE WEEK	DAY VEHICLE '	IRIP ENDS	53.9	AVERACE WEEKDAY VEHICLE TRIP ENDS			47.2
Peak	A.M.	Enter	0.7	Peak	A.M.	Enter	0.3
Hour	Between	Exit	0.3	lour	Between	Excit	0.2 0
of	7 and 9	Total	1.0	of	7 and 9	Total	0.5
Adjacent	P.M.	Enter	2.4	Adjacent	P.M.	Enter	1.9
Street	Between	Exit	2.5	Street	Between	Exit	<u>1.9</u>
Traffic	4 and 6	Total	4.9	Traffic	4 and 6	Total	3.8
Peak	A.M.	Enter	2.1	Peak	A.M.	Enter	2.0
Hour		Exit	2.1	Hour		Exit	1.6
of	e a 10 m	Total	4.2	of		Total	3,5-
Generator	P.M.	Enter	2.4	Generator	Р.Н.	Enter	2.2
•		Exit	2.7			Exit	2.1
		Total	5.1			Total	4.2
SATURDAY VE	HICE TRIP EN	DS	58.8	SATURDAY VEHICLE TRIP ENDS			59.4
?eak		Enter	2.5	Peak		Enter	2.4
Hour of		Exit	2.5	Eour of		Exit	2.8
Generator	-	Total	5.0	Generator		Total	5.2
SINDAY VEHI	CLE TRIP ENDS	5	20.5	SENDAY VEHI	II TRIP END	5	10.2
Peak		Enter	1.4	Peak		Enter	0.6
Hour of		Ezziz	0.9	Hour of		Exit	0.8
Generator	Generator Total		2.3	Generator		Total	1.3
Sita: 102 Independent Adjacent St Generator ? Weekday	Date: Variable: 10 Peak Hours: eak Hours: 11:00-12:00	7/9/80 - 7/ 00 sq.ft. GL 7:45-8:45AM; AM 4:30-5:	16/80 FA - 179.0 4:15-5:15PM 30 PM	Site: 103 Independent Adjacent St. Generator Pe Weekday	Date: Variable:100 Peak Hours: eak Hours: 11:00-12:00	7/17/80 - 7/2 D sq.ft. GLFA 7:15-8:15AM;4 AM 5:00-6:00	4/80 - 473.0 :15-5:15PM PM
Sun.	6:00-7:00 P	м М		Sun.	6:30-7:30 Pl	<u>4</u>	

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TRIP GENERATION RATES

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SHOPPING CENTERS

Weekday Tr Adjacent Str Adjacent Str Generator A. Fenerator ?.	rips In: reet A.M. Peak reet P.M. Peak M. Peak Hour M. Peak Hour	k Hour <u>1.1</u> k Hour <u>8.4</u> <u>7.0</u> <u>9.2</u>	Measured Trip Race	Z Weekday Ir Adjacent Str Adjacent Str Generator A. Generator P.	Measured Trip Rate		
AVERACE WEEK	DAY VEHICLE	RIP ENDS	27.6	AVERAGE WEEK	31.1		
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	0.2
Eour	Between	Exit	·0.1	Eour	Between	Pri:	0.1
ai	7 and 9	Total	0.3	of	7 and 9	Total	0.3
Adjacent	P. Y.	Enter	1.2	Adjacent	P.M.	Enter	1.4
	Jamiaan	Exit	1.1		Barriaan	Exic	, 1.3
Graffic	4 and 6	Total	2.3	Street Traffic	4 and 5	Total	2.7
Peak	A.M.	Eater	1.1	Peak	A.M.	Enter	1.3
Hour		Exit	0.8	Hour		Exiz	0.8
		Total	1.9	of		Total	2 1
Generator	P. <u>M</u> .	Enter	1.4	Ganerator	P.M.	Enter	1.5
	-	Exit	1.2	GLACIER		Exti:	1.4
		Total	2.5			Total	2.8
SATURDAY 7E	HOI RP EN	ICS	33.3	SATURDAY VE	40.1		
?eak		Enter	1.0	Peak		Enter	1.8
Hour of		Ext.:	1.9	Eour of		Exit	1.6
F Generator		Total	2.9	Generator		Total	3.4
SENEAY VEHI	CLE TRIP ENDS	5	5.1	SUNDAY VEHI	IE TRIP END	S	5.3
Peak		Enter	0.3	Peak		Enter	0.2
Eour of		Ercit	0.3	Hour of		Exit	0.2
Generator		Total	0.6	Generator		Total	0.4
Sita: 104 Independent Adjacent St Generator ? Weekday Sat. Sun.	4 Date: Variable: 10 . Peak Hours: Peak Hours: 11:00-12:00 8:30-9:30 PM 6:15-7:15 PM	6/26/80 - 7 000 sq.ft. GL 7:30-8:30AM; AM 12:00-1:	/3/80 FA - 778.0 4:30-5:30PM 00 PM	Siza: 105 Independent Adjacent St. Generator Pe Weekday Sat. Sun.	Date: Variable:100 Peak Hours: 11:00-12:00 1:30-2:30 H 3:30-4:30 H	6/4/80 - 6/11 00 sq.ft. GLFA 7:30-8:30AM;4 AM 5:00-6:00 PM	./80 - 849.7 :30-5:30PM) PM

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TRIP GENERATION RATES

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SHOPPING CENTERS

						and the second second second second second second	
% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet 7.M. Pea M. Peak Hour M. Peak Hour	k Hour 2.8 k Hour 9.1 6.2 9.7	Measured Trip Race	Weekday Trips In: Adjacent Street A.M. Peak Hour 3.8 Adjacent Street P.M. Peak Hour 8.6 Generator A.M. Peak Hour 6.8 Generator P.M. Peak Hour 10.1			
AVERACE WEEK	DAY VEHICLE	RIP ENDS	116.6	AVERAGE WEEK	IRIP ENDS	81.7	
Peak	A.M.	Enter	1.7	Peak	A.M.	Enter	1.6
Hour	Between	Exit	[.] 1.6	Hour	Зесчееп	Ini t	1.5 🔿
of	7 and 9	Total	3.3	of	7 and 9	Total	3.1
Adjacent	P.M.	Enter	5.1	Adjacent	P.M.	Enter-	3.4 .
Street -	Between	Exit	5.5	SETREE	Between	Exic	,3.6
Traffic	4 and 6	Total	10.6	Traffic	4 and 6	Total	7.0
Peak	A.M.	Enter	3.8	Peak	A.M.	Enter	2.6
Eour		Exit	3.4	Hour		Exit	2.9
		Total	7.2	of	-	Total	5.5 .
Generator	P.M.	Enter	5.5	Generator	P.M.	Enter	4.0
		Exit	5.7			Exit	4.2
		Total	11.3			Total	8.2
SATURDAY VE	HOLE TRUP EN	DS	147.8	SATURDAY VE	83.1		
?eak		Enter	5.1	Peak		Enter	3.6
Eour of		Exit	5.2	Hour of		Exit	3.9
Generator	~	Total	10.4	Generator		Total	7.5
SUNDAY VEHI	ale trip ence	5	100.9	SUNDAY VEHI	IE TRIP ENIX	5	51.0
?eak		Enter	4.1	Peak		Enter	2.7
Ecur of		Exit	4.1	Hour of		Exit	2.5
Generator Total			8.2	Generator		Total	5.2
Site: 10 Independent Adjacent St Generator ? Weekday Set.	06 Date: Variable: 10 . Peak Hours: 11:00-12:00 12:00-1:00	6/11/80-6/13 00 sq.ft. GLI 7:00-8:00AM; AM 4:30-5: PM	B/80 FA - 66.0 4:15-5:15PM 30 PM	Sita: 10 Independent Adjacent St. Generator ?e Weekday Sat.	7 Date: Variable: 100 Peak Hours: 7 Pak Hours: 11:00-12:00 A 12:00-1:00 PM	6/18/80 - 6/ 00 sq.ft. GLF :00-8:00AM;4 M 4:45-5:45	25/80 A - 175.6) :00-5:00PM PM
Sun.	12:30-1:30	PM		J Sun.	12:00-1:00 PM	[

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TRIP GENERATION RATES

SHOPPING CENTERS

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>1.8</u> k Hour <u>8.9</u> <u>7.0</u> <u>9.1</u>	Measured Trip Rate	Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hou: M. Peak Hou:	ak Hour <u>3.2</u> ak Hour <u>9.5</u> <u>6.2</u> <u>9.7</u>	Measured Trip Rate	
AVERACE WEEK	DAY VEHICLE	TRIP ENDS	42.3	AVERAGE WEEK	AVERACE WEEKDAY VEHICLE IRIP ENDS			
Peak	A.M.	Enter	0.5	Peak A.M.		Enter	0.6	
Eour	Between	Exit	· 0.3	Hour	Between	Exit	0.0	
of	7 and 9	Total	0.8	of	7 and 9	Total	1.1	
Adjacent	2.4.	Enter	2.0	Adjacent	P.Y.	Enter	1.6	
Streat	Eetween	Zxit	1.8	Strear	Berween	Exiz	,1.6	
Traffic	4 and 5	Tocal	3.8	Traffic	4 and 6	Total	3.2	
Peak	A.M.	Enter	1.6	Peak	A.M.	Enter	1.2	
Hour		Exit	1.3	Hour		Exit	0.9	
]] of		Total	3.0	of		Total	2	
Generator	P.Y.	Enter	2.0	Generator	P.M.	Enter	1.6	
		Exit	1.9			Exic	1	
		Total	3.9			Total	3.2	
SATURDAY VE	HICE TEP B	NIDS	70.4	SATURDAY VEHICLE TRIP ENDS			-52.4	
Peak		Enter	3.7	Peak		Enter	2.6	
Hour of		Exic	3.2	Eour of		Ixit	3.0	
Generator		Total	6.9	Generator		Total	5.7	
SUNDAY VEHI	ole trip ends	s	9.3	SENERY VEEL		S	4.1	
Peak		Enter	0.5	Peak		Enter	0.2	
C Hour of		Ezit	0.9	Hour of		Exit	0.2	
Generator		Total	1.4	Generator		Total	0.4	
Site: 108 Independent Adjacent St Generator I Weekday Sat. Sun.	Date: Variable: 10 Peak Hours: Peak Hours: 11:00-12:00 2:00-3:00 Pl 4:15-5:15 Pl	: 9/25/79 - 10 200 sq.ft. GL :7:15-8:15AM; AM 5:30-6:3	0/3/79 FA - 696.2 4:45-5:45PM 0 PM	Sita: 109 Independent Adjacent St. Generator Pa Weekday Sat. Sun.	Date: Variable: 10 Peak Hours: 11:00-12:00 3:00-4:00 P 12:00-1:00 P	1/22/80 - 1/2 00 sq.ft. GLFA 7:30-8:30AM;5 AM 5:15-6:15 M M	29/80 A - 829.0 :00-6:00PM PM	

TRIP GENERATION RATES

SHOPPING CENTERS

7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ak Hour 2.4 ak Hour 10.2 8.3 10.2	Measured Trip Race	% Weekday Trips In:Adjacent Street A.M. Peak HourAdjacent Street P.M. Peak HourGenerator A.M. Peak Hour7.2Generator P.M. Peak Hour8.9				
AVERACE NEEK	DAY VEHICLE	TRIP ENDS	72.5	AVERAGE NEEK	44.8			
Peak	A.M.	Enter	1.0	Peak	A.M.	Enter-	0.4	
Hour	Between	Exit	· 0.8	Hour	Between	By:1:	0.3	
of	7 and 9	Total	1.7	of	7 and 9	Total	0.7	
Adjacent	2	Enter	3.7	Adjacent	י. א	Encer-	2.0	
	Between	Extt	3.6	Green	Berween	Exit	, 2.0	
	4 and 6	Total	7.4	Traffic.	4 and 6	Total	4.0	
Peak	A.M.	Encer	3.0	Peak	A.M.	Enter	1.8	
Hour		Exit	3.0	Hour		Exit -	1.5	
 ož		Total	- 6.0	of		Total	5.1	
Generator	P.M.	Enter	3.7	Generator	P.M.	Enter	2.0	
		Exit	3.6			Exit	2.0	
	-	Total	7.4			Total	4. ون	
SATURDAY VE	HICLE TRIP E	NDS	91.9	SATURDAY VEHICLE IRIP ENDS			63.9	
?eak		Enter	4.9	Peak		Enter	2.9	
Hour of		Exit	4.7	Hour of		Exit	3.2	
Generator		Total	9.5	Generator		Total	6.1	
SUNDAY VEHI	CLE TRP END	S	23.1	SUNDAY VEHI	CLE TRIP END	S	19.2	
Peak		Enter	1.3	Peak		Enter	1.1	
Ecur of		Exic	1.5	Hour of		Exit	1.Ĵ	
Generator Total			2.8	Generator		Total	2.3	
Site: 11 Independent Adjacent St Generator F Weekday Sar	0 Date Variable:10 . Peak Hours 11:00-12:00 2:00-3:00	: 1/10/80 - 1, 00 sq.ft. GLF4 :7:30-8:30AM; AM 4:45-5:4	/17/80 A - 314.0 4:45-5:45PM 5 PM	Sita: 111 Independent Adjacent St. Generator Pe Weekday Sar	Date: Variable:10 Peak Hours: eak Hours: 11:00-12:0 4:00-5:00	10/4/79 - 10, 00 sq.ft. GLF, 7:30-8:30AM;4 0 AM 4:15-5:1	/11/79 A - 669. :45-5:45PM L5 PM	
Sun.	3:15-4:15	PM		Sat. 4:00-5:00 PM Sun. 4:00-5:00 PM				

TRIP GENERATION RATES

SHOPPING CENTERS

Ac Ac Ge Ge	Weekday Tr ijacent Str ijacent Str enerator A. enerator P.	ips In: eet A.M. Peak eet P.M. Peak M. Peak Hour M. Peak Hour	k Hour 2.7 k Hour 10.8 6.4 10.8	Measured Trip Rate	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	k Hour 2.7 k Hour 10.6 6.5 11.2	Measured Trip Race	
A	VERACE WEEK	DAY VEHICLE	RIP ENDS	78.9	AVERAGE WEEK	TRIP ENDS	104.9	
Γ	Peak	A.M.	Enter	1.1	?eak	A.M.	Encer	1.6
	Eour	Between	Exit	· 1.1	Eour	3etween	Ixi:	1.2
1	of	7 and 9	Total	2.1	of	7 and 9	Total	2.8
	Adjacent	2. <u>¥</u> .	Enter	4.4	Adjacent	P.M.	Enter	5.8
	Straat	Between	Exti	4.1	Street	Berveen	Exit	, 5. 4
×	Traffic	4 and 6	Total	8.5	Traffic	4 and 6	Total	11.1 '
	Peak	А.Ж.	Enter	2.6	Peak	A.M.	Enter	3.7
	Zour		Ezit	2.4	Hour		Exit	3.1
· ·	oź		Total	5.0	of	•	Total	6,8
	Generator	P.M.	Enter	4.4	Generator	P.X.	Encer	5.8
			Exit	4.1			Exit	5.9
			Total	8.5			Total	11.7
Ts	ATTERDAZ VE	HCE RIP EN	DS	103.4	SATURDAY VE		NIS	. 115.0
	?eak		Enter	4.6	Peak		Enter	5.7
	Hour of		Exit	4.9	Hour of		Ercit	5.3
ŧ	Generator		Total	9.5	Generator		Total	10.9
s	INDAY VEHI	ie rr ens		45.3	SUNDAY VEHI	ie rip end	S	51.0
Γ	Peak		Enter	2.4	Peak		Enter	2.6
L	Ecur of		Ezzia	2.3	Hour of		Exis	2.4
Γ	Generator		Total	4.7	Generator		Total	5.1
	Site: 112 Independent Adjacent St Generator P Weekday Sat. Sun.	Date: Variable:100 Peak Hours: eak Hours: 11:00-12:00 5:15-6:15 12:30-1:30	10/12/79 - 1 20 sq.ft. GLF 7:30-8:30AM; AM 5:00-6:0 PM PM	0/19/79 A - 164.7 4:45-5:45PM 00 PM	Site: 113 Independent Adjacent St. Generator Pe Weekday Sat. Sun.	Date: 7ariable:100 Peak Hours: 11:00-12:00 11:30-12:30 12:30-1:30	2/13/80 - 2/ 0 sq.ft. GLFA 7:00-8:00AM;4 AM 5:00-6:0 PM 2M	2C/80 - 113.8 :30-5:30PM 00 PM

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TRIP GENERATION RATES

SHOPPING CENTERS

X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	X Weekday Trips In: Adjacent Street A.M. Peak Hour <u>1.6</u> Adjacent Street P.M. Peak Hour 1 <u>0.1</u> Generator A.M. Peak Hour <u>8.5</u> Generator P.M. Peak Hour <u>10.5</u>			Weekday Trips In: Adjacent Street A.M. Peak Hour 1.5 Adjacent Street P.M. Peak Hour 10.4 Generator A.M. Peak Hour 6.8 Generator P.M. Peak Hour 10.9			
AVERACE WEEK	DAY VEHICLE '	RP ENDS	44.2	AVERACE WEEK	DAY VEHICLE	IRIP ENDS	68.8
Peak	A.M.	Enter	0.4	Peak	A.M.	Enter	0.5
Hour	Between	Exit	° 0.3	Hour	Between	Exit	0.5
of	7 and 9	Total	0.7	of	7 and 9	Total	1.0
Adjacent	2.%.	Enter	2.1	Adjacent	7.4.	Inter	3.5
Street	Between	Exit	2.3	Semace.	Berween	Exiz	3.7
	4 and 6	Total	4.5	Traffic	4 and 6	Total	7.1
Peak	A.M.	Enter	2.0	Peak	A.M.	Enter	2.5
Eour	·	Exit	1.8	Hour		Exit	2.2
0Ē		Total	3.8	of -		Total	4.7
Generator	P. <u>M</u> .	Enter	2.3	Generator	P.M.	Enter	3.7
		Exit	2.3			Exit	3.8
		Total	4.6			Total	7.5
SATURDAY VE	HILE TEP EN	DS	57.6	SATURDAY VEHICLE TRIP ENDS			96.5
Peak		Enter	3.2	Peak		Eater	4.6
Hour of		Exit	3.1	Ecur of		Exit	4.5
Generator		Total	6.2	Generator	-	Total	9.1
SUNDAY VEHI	CLE RIP ENDS	5	10.6	SUNDAY VEHT	ae Trip enix	5	49.2
Peak		Enter	0.6	Peak		Enter	2.7
Ecur of		Ezit	0.7	Hour of		Exit	3. j
Generator	Generator Total			Generator		Total	5.9
Sita: 114 Independent Adjacent St Generator F Weekday Sat.	Site: 114 Date: 2/21/80 - 2/28/8 Independent Variable:1000 sq.ft. GLFA - 2 Adjacent St. Peak Hours: 7:15-8:15AM;5:00- Generator Peak Hours: Weekday 11:00-12:00 AM 4:30-5:30 PM Sat. 2:15-3:15 PM				Date: Variable: 100 Peak Hours: 11:00-12:00 A 4:00-5:00 PN	10/24/79 - 00 sq.ft. GLF. 7:30-8:30AM;4 AM 5:15-6:15	11/1/79 A - 145.C :45-5:45PM PM
Sac.	<u>2:15-3:15</u> <u>3:30-4:30</u>	PM		Sun.	1:30-2:30 PM	A A A A A A A A A A A A A A A A A A A	

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TRIP GENERATION RATES

SHOPPING CENTERS

				and the second		and the second
rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Eour 2.4 k Eour 11.0 8.3 11.7	Measured Trip Rate	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	Measured Trip Rate		
DAY VEHICLE	RIP ENDS	90.4	AVERAGE WEEK	TRIP ENDS	82.3	
A.M.	Enter	1.1	Peak	A.M.	Enter	0.6
Between	Exit	·1.0	Hour Between	Init	0.5	
7 and 9	Total	2.2	of	7 and 9	Total	1.2
2.X.	Enter	5.0	Adjacent	7.4.	Enter	3.9
Between	Ixit	5.0	Stream	Berween	Exit	、4.0
4 and 6	Total	10.0	Traffic	4 and 5	Total	7.9 ′
A.M.	Eater	3.8	Peak	A.M.	Enter	3.3
	Exit	3.6	Hour		Exit	2.8
	Total	7.5	of		Total	F , 1
P.M.	Enter	5.6	Generator	P.M.	Enter	4.2
	Exit	5.0			Exit	• 4,2
	Total	10.5			Total	8.5
HILE TRP E	DS I	116.9	SATURDAY VEHICLE IRIP DUS			98.3
	Enter	6.1	Peak		Enter	5.2
	Excit	5.8	Hour of		Exit	4.8
	Total	11.9	Generator		Total	10.0
ai rip ends	5	55.8	SUNDAY VEHI	CLE TRIP END	S	33.6
	Enter	3.8	Peak		Enter	1.9
	Exi:	3.1	Rour of		Exit	2.0
	Total	6.9	Generator		Total	3.8
Date: Variable: 10 . Peak Hours: Peak Hours:	11/7/79 - 11 000 sq.ft. GL 7:30-8:30AM;	/14/79 FA - 94.0 4:45-5:45PM	Sita: 117 Independent Adjacent St. Generator Pa	Date: Variable: 10 Peak Hours: mak Hours:	9/4/79 - 9/1 00 sq.ft. GLFA 7:00-8:00AM;4	1/79 A - 184.9 :00-5:00PM
	<pre>ips In: eet A.M. Pea M. Peak Hour M. Peak Hour M. Peak Hour M. Peak Hour DAY VEHICLE A.M. Between 7 and 9 P.M. Between 4 and 6 A.M. P.M. P.M. HICLE TRIP END HICLE TRIP END Date: Variable: 10 Peak Hours: eak Hours:</pre>	<pre>ips In: reet A.M. Peak Hour <u>2.4</u> reet P.M. Peak Hour <u>11.0</u> M. Peak Hour <u>8.3</u> M. Peak Hour <u>11.7</u> DAY VEHICLE TRIP ENDS A.M. Enter Between Exit 7 and 9 Total P.M. Enter Between Zxit 3 etween Zxit Total P.M. Enter Exit Total P.M. Enter Exit Total FICLE TRIP ENDS Enter Exit Total CLE TRIP ENDS Enter Exit Total Enter Exit Total Exit Exit Exit Exit Exit Exit Exit Exit</pre>	Tips In: Peak Hour 2.4 Measured Trip Rate The Peak Hour 8.3 M. Peak Hour 8.3 Measured Trip Rate M. Peak Hour 11.7 90.4 A.M. DAY VEHICLE TRP ENDS 90.4 A.M. A.M. Enter 1.1 90.4 A.M. Enter 1.1 90.4 A.M. Enter 1.1 90.4 A.M. Enter 1.0 7 and 9 Total 2.2 2.2 P.M. Enter 5.0 2.2 P.M. Enter 5.0 3.8 Exit 5.0 10.0 A.M. Enter 3.8 5.0 Exit 5.0 10.0 A.M. Enter 5.6 3.8 Exit 5.0 10.5 P.M. Enter 5.6 5.6 Exit 5.0 10.5 HICLE TRIP ENDS 116.9 116.9 Enter 6.1 11.9 Exit 5.8 5.8 Enter 3.8 5.8 Exit 3.1 6.	rips In: reet A.M. Peak Hour 2.4 reet P.M. Peak Hour 11.0 M. Peak Hour 8.3 M. Peak Hour 11.7 TAY VEHICLE TRIP ENDS 90.4 AVERACE VEER A.M. Enter 1.1 Peak Between Exit 1.0 7 and 9 Total 2.2 of 7.M. Enter 5.0 Adjacent Between Exit 5.0 Streat 4 and 6 Total 10.0 Traffic A.M. Enter 3.8 Exit 3.6 Exit 5.0 Total 7.5 P.M. Enter 5.6 Generator Exit 5.0 Total 10.5 HICLE TRIP ENDS 116.9 SATURDAY VEH Enter 6.1 Peak Exit 5.8 Hour of Total 11.9 Generator CLE TRIP ENDS 55.8 SUNDAY VEH Enter 3.8 Peak Exit 5.8 Hour of Total 11.9 Generator Date: 11/7/79 - 11/14/79 Sita: 117 Variable: 1000 sq.ft. GLFA - 94.0 Peak Hours: 7:30-8:30AM:4:45-5:45PM Adjacent 2.4 Adjacent 3.4 Exit 5.8 Hour of Total 1.9 Generator Date: 11/7/79 - 11/14/79 Sita: 117 Variable: 1000 sq.ft. GLFA - 94.0 Adjacent 3.4 Adjacent 2.4 Adjacent 2.4	rips In: meet A.M. Peak Hour 2.4 M. Peak Hour 11.0 M. Peak Hour 11.0 M. Peak Hour 11.7 Measured Adjacent Street P.M. Peak Cenerator A.M. Peak Hour Cenerator A.M. Peak Hour Cenerator P.M. Peak Hour Cenerator P.M. Peak Hour TAY VEHICLE TRIP ENDS 90.4 A.M. Enter 1.1 Peak A.M. Between Exit 1.0 Four Jetween 7 7 and 9 7 .M. Enter 5.0 Adjacent 7.M. Between Zxit 5.0 Street Between 4 4 and 6 A.M. Enter 3.8 Fait 3.6 Four Jetween 7 4 and 6 A.M. Enter 5.6 F.M. Enter 5.8 Four 7 F.M. Enter 6.1 Four 7 Four 7 Four 7 Four 7 Four 7 Enter 3.8 Feak Hour of 7 Four 7 Enter 3.8 Feak Exit 3.1 Four of 7 Cenerator 7 Date: 11/7/79 - 11/14/79 Sita: 117 Date: 10 Four 7: 7:30-8:300014:455-3:4500 Four 7: 7:30-8:300014:455-3:4500 Feak Hours: 6 Four 7: 7:30-8:300014:455-3:4500 Feak Hours: 6 Feak Hours: 6 Feak Hours: 6 Feak Hours: 6 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 6 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 6 Feak Hours: 6 Feak Hours: 6 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 6 Feak Hours: 6 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 6 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:4500 Feak Hours: 7:30-8:300014:455-3:45000 Feak Hours: 7:30-8:300014:455-3:45000 Feak Hours: 7:30-8:300014:455-3:450000 Feak Hours: 7:30-8:300000 Feak Hours	<pre>ips In: rest A.M. Peak Hour 2.4 Measured M. Peak Hour 11.0 M. Peak Hour 11.7 M. Peak Hour 10.3 M. Peak A.M. Inter Peak A.M. Enter 200 M. Peak A.M. Enter 200 M. Peak A.M. Enter 200 M. Peak A.M. Enter 200 M. Enter 3.0 M. Enter 4.1 M. Enter 5.0 M. Enter 7 M. Enter 5.0 M. Enter 7 M. Enter 5.0 M. Enter 7 M. Enter 5.0 M. Enter 7 M. Enter 4.1 M. Enter 5.1 M. Enter 5.1 M. Enter 7 M. Enter 5.1 M. Enter 7 M. Enter 7 M.</pre>

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TRIP GENERATION RATES

SHOPPING CENTERS

	والمتحافظ والمتحد والمتحافظ والمركبة فالمعاقة						
% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>1.</u> 7 k Hour <u>8.5</u> <u>8.1</u> <u>8.9</u>	Measured Trip Race	Weekday Trips In: Adjacent Street A.M. Peak Hour $\frac{1.6}{8.2}$ Adjacent Street P.M. Peak Hour $\frac{8.2}{6.3}$ Generator A.M. Peak Hour $\frac{6.3}{9.4}$			
AVERACE WEEK	DAY VEHICLE	TRIP ENDS	. 43.8	AVERAGE WEEK	TRIP ENDS	70.1	
Peak	A.M.	Enter	0.5	Peak	A.M.	Enter	0.7
Eour	Between	Exit	· 0.3	Hour	Between	Exit -	0.4
of	7 and 9	Total	0.8	of	7 and 9	Total	1.1
Adjacent	2.2.	Enter	1.8	Adjacent	P. <u>M.</u>	Enter	2.9
Street	Between	Exit	1.9	Street	Berween	Exit	. 2.8
Traffic	4 and 6	Total	3.7	Traffic	4 and 6	Total	5.7
Peak	A.M.	Enter	1.8	Peak	A.M.	Enter	2.3
Hour	· · · · · ·	Exit	1.8	Hour		Exit -	2.1
o:		Total	3.6	of		Total _	4 4
Generator	P.M.	Enter	2.0	Generator	P.H.	Inter	3.7
	-	Exit	1.9			Exit	2.8
		Total	3.9			Total	6.6
SATURDAY VE	HOLE TRIP EN	DS	56.3	SATURDAY VEHICLE TRIP ENDS			105.6
Peak		Enter	2.4	?eak		Enter	6.3
Hour of		Exit	2.3	Eour of		Ind 2	4.5
Generator		Total	4.7	Generator		Total	10.80
SUNDAY VEHIC	ie trip ends	5	15.6	SUNDAY VEHIC	le RP ENR	6	87.7
Peak		Enter	0.8	Peak		Enter	6.2
Hour of		Excit	0.8	Hour of		Exit	5.9)
Generator		Total	1.6	Generator		Total	11.2
Site: 11 Independent Adjacent St Generator ? Weekday Sat. Sun.	8 Date: Variable: 1(. Peak Hours: eak Hours: 11:00-12:00 A 2:45-3:45 PM 5:45-6:45 PM	7/31/79-8/7 000 sq.ft. GL 7:30-8:30AM; AM 12:00-1:0	/80 FA - 298.0 4:30-5:30PM 0 PM	Site: 119 Independent Adjacent St. Generator Pe Weekday_ Sat. Sim	Date: Variable: 100 Peak Hours:7 ak Hours: 11:00 AM - 1 6:45 - 7:45 1:15 - 2:15	8/22/79 - 8/3 00 sq.ft. GLFA 7:30-8:30AM;4: 12:00 PM 6:45 5 PM 5 PM	80/79 A - 131.3) 15-5:15 PM 5-7:45 PM

TRIP GENERATION RATES

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SHOPPING CENTERS

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Peal reet P.M. Peal M. Peak Hour M. Peak Hour	k Hour 0.6 k Hour <u>9.0</u> <u>6.8</u> <u>9.6</u>	Measured Trip Rate	7. Weekday Trips In: Adjacent Street A.M. Peak Hour Meas Adjacent Street P.M. Peak Hour Trip Generator A.M. Peak Hour Generator P.M. Peak Hour				
AVERACE NEER	DAY VEHICLE	RIP ENDS	48.1	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS		
Peak	A.M.	Eater	0.2	Peak	A.M.	Enter		
Hour	Between	Exit	·0.1	Hour	Between	Excit		
af	7 and 9	Total	0.3	af	7 and 9	Total		
Adjacent	P.M.	Enter	2.2	Adfacent	P. Y.	Encer		
Chroan	Berween	Exit	2.2	Creat	Berween	Exi:	3	
Traffic	4 and 5	Tocal	43	Traffic	4 and 5	Total		
Peak	A.M.	Enter	1.8	Peak	A.M.	Eater	-	
Hour		Exit	1.5	Hour		Exi:		
		Total	3 3	0Ŧ		Total		
Concentor	P.M.	Enter	2.6	Canana	P.M.	Enter		
Generator		Exit	2 0	Generator	•	Exit		
		Total	4.6			Total		
SATERDAY VE	শানার সহায় হয়	TS	7/. 8	SATURDAY VEHICLE TRIP ENDS				
?eak		Enter	4.4	Peak		Enter		
Hour of		Exi:	3 7	Hour of		Exit		
- Generator		Total	7.6	Generator		Total		
SUNDAY VEHI	CLE TRIP ENDS		5 3	SUNDAY VELL		S		
Peak		Enter	0.4	?eak		Enter		
A Ecur of		Ezzi	0.4	Hour of		Ezit		
Generator	Generator Total			Generator		Total	}	
Sita: 120 Independent Adjacent St Generator F Weekday Sat.) Date: Variable: 100 Peak Hours: Peak Hours: 11:00-12:00 12:45-1:45	9/12/79 - 9, 00 sq.ft. GLI 7:00-8:00AM; AM 7:00-8:0 PM	/19/79 FA - 267.0 4:00-5:00PM	Sita: Independent Adjacent St. Generator Pa Weekday Sat.	Date: Variable: Peak Hours: pak Hours:			
Sun.	1:00-2:00 P	M		J Sun.				

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TRIP GENERATION RATES

APARTMENTS

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% Weekday T Adjacent St Adjacent St Generator A Generator P	rips In: reet A.M. Pe reet 7.M. Pe .M. Peak Hou .M. Peak Hou	ak Hour 9.2 ak Hour 8.4 r 9.4 r 9.9	Measured Trip Race	Z Weekday Trips In: Adjacent Street A.M. Peak Hour 10.1 Adjacent Street P.M. Peak Hour 7.7 Generator A.M. Peak Hour 10.3 Generator P.M. Peak Hour 9.1				
AVERACE WEE	KDAY VEHICLE	TRIP ENDS	5.9	AVERAGE WEEK	7.0			
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter-	0.1	
Hour	Between	Exit	0.5	Hour	Between	Exit	0.60	
aí	7 and 9	Total	0.5	of	7 and 9	Total	0.7	
Adjacent	2.1.	Enter	0.3	Adjacent	P.Y.	Enter	0.4	
Street -	Between	Exit	0.2	Streat	Between	Exit	· · 0.1/4	
Traffic	4 and 6	Total	0.5	Traffic	4 and 6	Total	0.5	
Peak	A.M.	Eater	0.1	Peak	A.M.	Enter	0,1	
Hour		Exit	0.5	Hour		Exit	0.6	
of		Total	0.6	of		Total	(
Generator	?.X.	Enter	0.4	Generator	P.M.	Enter	0.4	
		Exit	0.2			Exit	0.2	
		Total	0.6			Total	0.6	
SATURDAY VE	NICLE TRUP E	NDS	6.1	SATURDAY VEHICLE TRIP ENDS				
Peak		Enter	0.3	Peak		Enter	0.3	
Sour of		Exit	0.2	Hour of		Exit	0.2	
Generator		Total	0.5	Generator		Total	0.5	
SUNDAY VEHI	ie trip end	S	5.1	SUNDAY VEHIC	le TRIP ENDS	3	5.7	
Peak		Enter	0.2	Peak		Enter	0.3	
Hour of		Extit	0.2	Hour of		Exit	0.()	
Generator		Total	0.5	Generator		Total	0.5	
Site: 200 Independent Adjacent St. Generator P Weekday Sat.) Date: Variable: Dw Peak Hours: 2:15-8:15 A 4:15-5:15 P	<pre>11/30/79-12/ velling Units 7:30-8:30AM;4 AM 4:30-5:30 PM</pre>	7/79 - 409 :30-5:30PM PM	Site: 201 Independent Adjacent St. Generator Pe Weekday Sat.	Date: Variable: Dw Peak Hours: ak Hours: 7:15-8:15 A 4:15-5:15 P	12/10/79-12/ elling Units 7:30-8:30AM;4 M 5:15-6:15 M	17/79 - 339 :30-5:30PM PM	
L Sum	4:15-5:15 E	M		Sun. 3:45-4:45 PM				

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TRIP GENERATION RATES

APARTMENTS

". Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: meet A.M. Pea meet P.M. Pea M. Peak Hour M. Peak Hour	k Hour 6.8 k Hour 8.8 7.9 9.9	Measured Trip Rate	Weekday Trips In: Adjacent Street A.M. Peak Hour $\frac{4.5}{9.6}$ Adjacent Street P.M. Peak Hour $\frac{9.6}{6.3}$ Generator A.M. Peak Hour $\frac{6.3}{10.2}$				
AVERACE WEEK	DAY VEHICLE '	RIP ENDS	7.7	AVERAGE WEEK	AVERAGE WEEKDAY VEHICLE TRIP ENIS			
Peak	A.M.	Enter	0.1	Peak	A.M.	Encer	0.1	
Eour	Between	Exit	· 0.4	Hour	Berween	Txit	0.0	
of	7 and 9	Total	0.5	of	7 and 9	Tocal	0.3	
idiacans		Enter	0.5	Adjacant	עפ	Encer	0.4	
Acjectus	700000	Exit	0.2	Aujacene	Jaerraan	Exis	, 0.3	
Traffin	4 and 6	Total	0.7	Traffic	and 6	Total	0.ú '	
Peak	A.M.	Enter	0.1	Peak	A.M.	Encer	0.)	
Hour		Exit	0.5	Hour		Erit	0.3	
l OF		Total	0.6	<u></u>		Total	0 ′	
Canananan	P.M.	Enter	0.5	Concernent	P.M.	Enter	0.4	
Generator		Exit	. 0.3	Generalor		Exit	0.3	
		Total	0.8			Total	0.7	
	אב סוגר ביוורי א	TS	8.5	SATURDAY VEHICLE TRUE ENDS			6.8	
?eak		Enter	0.4	?eak		Enter	0.3	
Hour of		Exit	0.3	Hour of		Exit	0.2	
Generator		Total	0.7	Generator		Tatal	0.5	
SUNDAY VEHI	CIE TRIP ENDS		7 1	SENDAY VEHI	CE TRP EN	S	<u> </u>	
?eak		Encar	0.3	?eak		Enter	0.3	
T Hour of		Exci:	0.2	Eour of		Ezit	0.2	
Generator		Total	0.6	Canarator		Total	0.5	
Sita: 20 Cindependent Adjacent St Generator P Weekday Sat.	02 Date: Variable: Dw . Peak Hours: Peak Hours: 7:00-8:00 AM 5:45-6:45 PM	12/10/79 - 1 elling Units 7:30-8:30AM;4	12/17/79 - 412 4:30-5:30PM PM	Size: 203 Independent Adjacent St. Generator Pe Weekday Sat.	Date: Variable: D Peak Hours: ak Hours: 6:00-7:00 A 3:00-4:00 P	8/20/80 - 8/2 welling Units 7:00-8:00AM:4 M 5:30-6:30 E	27/30 - 238 :45-5:45FM PM	
Weekday Sat. Sun.	7:00-8:00 AM 5:45-6:45 PM 7:45-8:45 PM	5:15-6:15 [PM	Weekday Sat. Sun.	6:00-7:00 A 3:00-4:00 P 7:45-8:45 P	M 5:30-6:30 F M M	м.	

TRIP GENERATION RATES

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APARTMENTS

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generador P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour $\frac{4.1}{8.2}$ k Hour $\frac{4.9}{8.2}$	Measured Trip Rate	Weekday Trips In:Adjacent Street A.M. Peak Hour 4.7 Adjacent Street F.M. Peak Hour 8.4 Generator A.M. Peak Hour 5.4 Generator P.M. Peak Hour 9.6			Measured Trip Rate	
AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	8.3	AVERAGE WEEK	TRIP ENDS	5.9		
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.1	
Hour	Between	Exit	• 0.2	Hour	Between	Exit -	0.2	
of	7 and 9	Total	0.3	of	7 and 9	Total	0.3	
Adjacent	P.M.	Enter	0.4	Adjacent	P.M.	Enter	0.3	
Street	Between	Exit	0.2	Street	Between	Exit	,0.2	
Traffic	4 and 6	Total	0.7	Traffic	4 and 6	Total	0.5	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.1	
Hour	· · · ·	Exit	0.3	Hour		Exit	0.2	
of		Total	0.4	of		Total	0.3 (
Generator	P.M	Enter	0.4	Generator	P.M.	Enter	0.4	
•		Exit	0.2			Exit	0.2	
		Total	0.7			Total	0.6	
SATURDAY VE	HIGE TRIP EN	IDS	8.6	SATURDAY VEHICLE TRIP ENDS			6.2	
Peak		Enter	0.3	Peak		Enter	0.3	
Hour of		Exit	0.3	Hour of		Exit	0.2	
Generator		Total	0.6	Generator		Total	0.5	
SUNDAY VEHI	CLE TRIP ENDS	5	8.8	SUNDAY VEHIC	ILE TRIP ENDS	5	5.3	
Peak		Enter	0.4	Peak		Enter	0.2	
Hour of		Exit	0.3	Hour of		Exit	0.3 🔿	
Generator		Total	0.7	Generator		Total	0.5	
Site: 204 Independent Adjacent St Generator P Weekday	Date: Variable: Du Peak Hours: eak Hours: 6;15-7:15 Al	7/8/80 - 7/ welling Units 3:00-9:00AM;4 M 4:45-5:45	15/80 - 158 :45-5:45PM PM	Site: 205 Independent Adjacent St. Generator Pe Weekday	Date: Variable: _Dv Peak Hours: pak Hours: 7:15-8:15 AN	7/25/80 - velling Units 8:00-9:00AM; 1 5:15-6:15	8/1/80 - 242 4:45-5:45PM PM	
Sat	8:30-9:30 Pl 8:15-9:15 Pl	M M		Sat. 2:30-3:30 PM Sun. 7:15-8:15 PM				

TRIP GENERATION RATES

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APARTMENTS

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: Peet A.M. Pe Peet P.M. Pe M. Peak Hou M. Peak Hou	ak Hour ak Hour r r	Measured Trip Rate	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pe reet P.M. Pe M. Peak Hou M. Peak Hou	ak Hour 6.9 ak Hour 10.7 r 7.4 r 10.9	Measured Trip Rate
AVERACE WEEK	DAY VEHICLE	RIP ENDS		AVERAGE WEEK	TRIP ENES	5,9	
Peak	A.M.	Enter		Peak	A.M.	Enter	0.1
Eour	Between	Exit		Hour	Between	Excit	0.3
of	7 and 9	Total		of	7 and 9	Total	0.4
Adjacent	2.2.	Enter		Adjacent	2.X.	Enter	0.4
Streat	Berween	Exit		Streat	Berveen	Exic	,0.2
Traffic	4 and 5	Total	}	Traffic	4 and 6	Total	0.6 '
Peak	A.M.	Enter		Peak	A.M.	Incer	6.2
Hour		Exit		Hour		Exit	0.3
or		Total) of		Total	() . <i>(</i>
Generator	P.M.	Enter		Generator	P.M.	Inter	0.4
	4	Exit				Exit	۲.0
		Total				Total	0.6
SATURDAY VE		NDS		SATURDAY VE		NIS	7.0
Peak		Enter		Peak		Enter	0.3
Hour of		Exit		Hour of		Excit	0.3
Generator		Total		Generator		Total	0.6
SUNDAY VEHI	CE RP EN	x		SUNDAY VEHI	CE RP N	x	5.6
?eak		Enter		Peak		Enter	0.3
Eour of		Exis		Hour of		Exit	0.3
Generator		Total		Generator		Total	0.5
Sita: Dele Independent Adjacent St Generator ? Neekday	ted Date Variable: . Peak Hours Peak Hours:	2 : 3 :		Sita: 207 Independent Adjacent St. Generator Pe Weekday	Date Variable:Dw Peak Hours Peak Hours: 7:00-8:00 A	: 3/11/80 - 3/1 relling Units - : 7:15-8:15AM;2 M 5:00-6:00 H	8/80 - 285 - 45-5:45PM
SacSun				Sun.	3:45-6:45 I 4:00-5:00 I	PM	

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TRIP GENERATION RATES

APARTMENTS

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Eour <u>7.</u> 0 k Hour <u>9.</u> 1 <u>7.2</u> <u>9.2</u>	Measured Trip Rate	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Eour <u>9.5</u> k Eour <u>9.8</u> <u>9.5</u> 10.8	Measured Trip Rate	
AVERACE WEEK	DAY VEHICLE '	RIP ENDS	5.1	AVERAGE WEEK	AVERACE WEEKDAY VEHICLE TRIP ENDS			
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.1	
Hour	Between	Exit	· 0.3	Hour	Between	Excit	0.4(
of	7 and 9	Total	0.4	of	7 and 9	Total	0.5	
Adjacent	2.1.	Enter	03	Adjacent	P	Enter	0.3 - 4	
Street	Between	Exit	0.1	Strage	Berween	Exit	. 0.2	
Traffic	4 and 6	Total	0.5	Traffic	4 and 5	Total	0.5	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.1	
Hour		Exit	0.3	Hour		Exit	0.4	
of		Total	0.4	of		Total	0.5	
Generator	P.M.	Enter	0.3	Generator	P.M.	Enter	0.4	
		Exit	0.1			Exit	0.2	
		Total	0.5			Total	0.6	
SATURDAY VE	HOE TRP EN	DS	5.0	SATURDAY VEHICLE TRIP ENDS			4.4	
?eak		Enter	0.2	?eak		Enter	0.1	
Hour of		Exit	0.2	Eour of		Excit	0.2	
Generator		Total	0.4	Generator		Total	0.3	
SUNDAY VEHI	CLE TRIP ENDS	5	4.9	SUNDAY VEHI	CLE TRIP END	5	4.2	
Peak		Enter	0.2	Peak		Enter	0.2	
Hour of		Excit	0.2	Hour of		Exit	0.3	
Generator		Total	0.4	Generator		Total	0.3	
Sita: 208 Independent Adjacent St Generator P Weekday Sat.	Date: Variable: Du Peak Hours: eak Hours: 6:45-7:45 4 7:00-8:00 1	6/3/80-6/10 velling Units 7:00-8:00AM; AM 4:30-5:30	/80 - 281 4:00-5:00PM PM	Site: 209 Independent Adjacent St. Generator ?e Weekday Sat.	Date: Variable: Dw Peak Hours: 7:00-8:00 A 10:30-11:30	6/3/80-6/10/ elling Units 7:00-8:00AM;4 M 4:30-5:30 AM	/80 - 210 :00-5:00PM PM	
Sun.	6:30-7:30 1	PM] Sun.	6:00-7:00 P	M		

TRIP GENERATION RATES

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APARTMENTS

enerator A. Anerator P.	eat ?.M. Peal M. Peak Hour M. Peak Hour	k Hour <u>9.0</u> k Hour <u>7.9</u> <u>9.8</u> <u>9.5</u>	Measured Trip Rate	Adjacent Str Adjacent Str Generator A. Generator P.	reet A.M. Per reet P.M. Per M. Peak Hour M. Peak Hour	ak Hour 9.6 ak Hour 11.6 r 9.6 r 11.6 r 11.6	Measured Trip Race	
VERACE WEEK	DAY VEHICLE	RP ENDS	5.7	AVERAGE WEEK	AVERACE WEEKDAY VEHICLE TRIP ENDS			
Peak	A.M.	Enter	0.1	Peak	A.M.	Encer	0.1	
Hour	Berween	Exit	· 0.4	Hour	Between	Irci :	0.5	
of	7 and 9	Total	0.5	of	7 and 9	Total	0.6	
Adjacent	2.4.	Enter	0.3	Adjacent	э. <u>ч</u> .	Encer	0,5	
Straat	Petween	Exit	0.1	Street	Berween	Exit	,0.2	
Traffic	4 and 6	Total	0.4	Traffic	4 and 6	Total	0.7 '	
Peak	A.X.	Enter	0.1	Peak	A.M.	Enter	0.1	
Hour		Exi:	0.4	Hour		Exit	0.5	
of		Total	0.6	of		Total	0. :	
Carerator	P.M.	Eater	0.4	Canarator	P.M.	Enter	0. ^r	
"Circleter		Exit	0.2	Generator		Exit	0.2	
		Total	0.5			Total	0.7	
SATURDAY VES		īs	6.1	SATURDAY VEHICLE TRIP ENDS			. 7 .i	
Peak		Enter	0.3	?eak		Enter	0.3	
Hour of		Exit	0.3	Lour of		Exit	0.2	
Generator		Total	0.5	Generator		Total	0.5	
SINDAY VEHI	LE TRIP ENDS		5.1	SUNDAY VEHI	TE RP EN	s i	5.9	
Peak		Enter	0.2	?eak		Entar	0.3	
) Ecur of		Ezi:	0.3	Hour of		Ēzit	0.2	
Generator Total			0.5	Generator		Total	0.5	
Site: 210 Independent Adjacent St Generator ? Weekday Sat.	Date: Variable: Date: Peak Hours: eak Hours: 7:15-8:15 A 3:15-4:15 P	1/17/80-1/2 welling Units 7:30-8:30AM;4 M 5:15-6:15 M	4/80 - 293 :30-5:30PM PM	Site: 211 Independent Adjacent St. Generator ?e Weekday Sat.	Date: Variable: Du Peak Hours: Peak Hours: 7:15-8:15 4:15-5:15	1/10/80-1/17 welling Units 7:15-8:15AM;4 AM 4:45-5:45 PM	/80 - 438 :45-5:45PM PM	
	VERACE WEEK Peak Hour of Adjacent Street Traffic Peak Hour of Generator SATURDAY VEI Peak Hour of Generator SINDAY VEHIC Peak Secur of Generator Site: 210 Independent Adjacent St Generator P Weekday Sat. Sun.	VERACE WEEKDAY VEHICLE Peak A.M. Hour Between of 7 and 9 Adjacent P.M. Street Between Traffic 4 and 6 Peak A.M. Bour Generator of P.M. Generator P.M. SATURDAY VEHICLE TRUP IN Peak Hour of Generator P.M. SATURDAY VEHICLE TRUP IN Peak Hour of Generator SINDAY VEHICLE TRUP IN Peak Hour of Generator Site: Site: 210 Date: Independent Vertiable: Dr Adjacent St. Peak Hours: Generator Sat. 3:15-4:15 P Sun. 12:30-1:30	VERACE WEEKDAY VEHICLE TRIP ENDS Peak A.M. Enter Between Exit of 7 and 9 Total Adjacent P.M. Enter Street Between Exit Traffic 4 and 6 Total Peak A.M. Enter Hour Exit Enter Traffic 4 and 6 Total Peak A.M. Enter Hour Exit Enter Generator P.M. Enter Generator P.M. Enter Strict Total Peak A.M. Enter Exit Generator P.M. Enter Hour of Exit Total SATURDAY VEHICLE TRUP ENDS Peak Enter Hour of Exit Generator Feak Enter Enter Hour of Exit Generator Sita: 210 Date: 1/17/80-1/2 Sita: 210 Date: 1/17/80-1/2 Independent Veriabla: Dwelling Units Adjacent St. Peak Hours:7:30-8:30AM:4 Generator: 7:50-8:15 AM 5:15-6:15 Sun. 12:30-1:30 PM	VERACE WEEKDAY VENICLE TRIP ENDS 5.7 Peak A.M. Enter 0.1 Hour Between Extit 0.4 of 7 and 9 Total 0.5 Adjacent P.M. Enter 0.1 Street Between Extit 0.1 Traffic 4 and 6 Total 0.4 Peak A.M. Enter 0.1 Event Between Extit 0.1 Traffic 4 and 6 Total 0.4 Peak A.M. Enter 0.1 Eour Extit 0.4 of Total 0.6 Generator P.M. Enter 0.4 of P.M. Enter 0.4 Cenerator P.M. Enter 0.4 Street P.M. Enter 0.4 Of P.M. Enter 0.2 Total 0.5 SATURDAY VEHICLE TRIP ENDS 6.1 Peak Enter 0.3 Bour of Exit Generator Total 0.5 S.1 Peak Enter 0.2 S.1 Peak Enter 0.2 S.1	WERACE WEEKDAY VEHICLE TRIP ENDS 5.7 AVERACE WEEK Peak A.M. Enter 0.1 Peak Hour Between Exit 0.4 Hour of 7 and 9 Total 0.5 of Adjacent P.M. Enter 0.3 Adjacent Street Between Exit 0.1 Street Traffic 4 and 6 Total 0.4 Traffic Peak A.M. Enter 0.1 Street Traffic 4 and 6 Total 0.4 Traffic Peak A.M. Enter 0.1 Peak Hour Exit 0.1 Peak Street Traffic 4 and 6 Total 0.4 Hour of Total 0.6 of Generator Generator Peak Enter 0.4 Generator Generator Total 0.5 SATURDAY VE Pak Enter 0.3 Peak Hour of Exit 0.3 Jour of Generator Total 0.5 Generator Sun of Exit 0.3 Jour of Generator Total	MILLING LANDON VEHICLE TRIP ENDS 5.7 AVERACE MERCIAN VEHICLE Peak A.M. Enter 0.1 Peak A.M. Bour Between Exit 0.4 Hour Between of 7 and 9 Total 0.5 of 7 and 9 Adjacent P.M. Enter 0.1 Street Between Traffic 4 and 6 Total 0.4 Traffic 4 and 6 Peak A.M. Enter 0.1 Street Between Traffic 4 and 6 Total 0.4 Traffic 4 and 6 Peak A.M. Enter 0.1 Peak A.M. Bour Exit 0.4 Traffic 4 and 6 Peak A.M. Enter 0.1 Peak A.M. Bour Exit 0.4 Hour 9.M. of Total 0.6 of 9.M. Cenerator P.M. Enter 0.4 Generator StattERAY VEHICLE TRUP ENDS 6.1 SATURDAY VEHICLE TRUP IN Peak Enter 0.3 Bour of Generator Total 0.5 Generator Sina: 210 <t< td=""><td>Market Num Num Num 212 Anternation Num Num 212 VERACE WERKDAY VENICLE TRIP ENDS 5.7 Peak A.M. Bour Between Street Ext: 0f 7 and 9 Total 0.5 of 7 and 9 Total 0.5 of 7 and 9 Total 0.4 Bour Between Ext: 0.4 Hour Between Ext: 0.4 Adjacent 7.M. Enter 0.1 Street Between Ext: 0.1 Street Between Ext: 0.4 Traffic 4 and 6 Total 0.4 Feak A.M. Enter 0.1 Peak A.M. Enter 0.1 Peak A.M. Enter 0.4 Generator F.M. Enter 0.4 Generator F.M. Enter 0.2 Peak Enter Bur of Ext: Generator Total Total 0.5 Generator Total<</td></t<>	Market Num Num Num 212 Anternation Num Num 212 VERACE WERKDAY VENICLE TRIP ENDS 5.7 Peak A.M. Bour Between Street Ext: 0f 7 and 9 Total 0.5 of 7 and 9 Total 0.5 of 7 and 9 Total 0.4 Bour Between Ext: 0.4 Hour Between Ext: 0.4 Adjacent 7.M. Enter 0.1 Street Between Ext: 0.1 Street Between Ext: 0.4 Traffic 4 and 6 Total 0.4 Feak A.M. Enter 0.1 Peak A.M. Enter 0.1 Peak A.M. Enter 0.4 Generator F.M. Enter 0.4 Generator F.M. Enter 0.2 Peak Enter Bur of Ext: Generator Total Total 0.5 Generator Total<	

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TRIP GENERATION RATES

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7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet 7.M. Pea M. Peak Hour M. Peak Hour	k Hour 9.8 k Hour 10.5 10.3 10.5	Measured Trip Rate	Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	k Hour 6.4 k Hour 8 <u>.3</u> 6.4 8.5	- Measured - Trip Rate			
AVERAGE WEEK	DAY VEHICLE '	RIP ENDS	8.9	AVERACE WEEK	DAY VEHICLE	TRIP ENDS	8.6		
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter -	0.2		
Eour	Between	Exit	· 0.7	Hour	Berween	Exit	0.4		
of	7 and 9	Total	0.9	of	7 and 9	Total -	0.6		
Adjacent	2.4.	Enter	0.6	Adjacent	2.8.	Encer	0.4		
Street	Between	Exit	0.3	Street	Between	Exit	0.3		
Traffic	4 and 6	Total	0.9	Traffic	4 and 6	Total	0.7		
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	.0.2		
Hour		Exiz	0.7	Hour		Exit -	.0.4		
oi		Total	0.9	of	-	Total	0.6		
Generator	P.M.	Enter .	0.6	Generator	P.M.	Enter	0.4		
		Exit	0.3	•		Exit	0.3		
		Total	0.9			Total	0.7 📇		
SATURDAY VE	ICE TRP EN	ī:S	9.1	SATURDAY VEHICLE TRIP ENDS			9.2		
Peak		Enter	0.4	?eak		Enter	0.4		
Hour of		Exit	0.4	Eour of		Excit	0.3		
Generator		Total	0.7	Generator		Total	0.7 🗘		
SINDAY VEHI	CLE TRIP ENDS	5	7.6	SUNDAY VESI	CLE TRIP END	5	8.2		
Peak		Enter	0.4	Peak		Enter	0.4		
Hour of	- ⁶ -	Exic	0.3	Hour of		Exit	0.3 ()		
Generator		Total	0.7	Generator		Total	0.6		
Site: 21 Independent Adjacent St Generator P Weekday Sat.	2 Date: Variable: Dw Peak Hours: eak Hours: 7:15-8:15 AM 7:00-8:00 PM	1/17/80-1/2 velling Units 7:30-8:30AM; 4 5:00-6:00	24/80 - 229 5:00-6:00PM PM	Site: 213 Independent Adjacent St. Generator ?e Weekday Sat.	Date: Variable:Dwe Peak Hours: 7:15-8:15 AM 6:30-7:30 PM	10/4/79 - 10 11ing Units - 7:15-8:15AM;4 4:00-5:00 1	0/11/79 - 209 4:15-5:15PM PM		
Sun.	5:00-6:00 PM	1		Sun. 6:45-7:45 PM					

TRIP GENERATION RATES

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APARTMENTS

Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	uk Hour <u>7.</u> 2 uk Hour <u>9.</u> 7 <u>7.</u> 2 <u>9.</u> 7	Measured Trip Race	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Per reet P.M. Per M. Peak Hour M. Peak Hour	ak Hour ak Hour r r	Measured Trip Rate
AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	7.3	AVERAGE WEEK			
Peak	A.M.	Enter	0.1	Peak	A.X.	Enter	
Eour	Berween	Exic	· 0.4	Hour	Between	Exi:	
of	7 and 9	Total	0.5	of	7 and 9	Total	
Adjacent	2.4.	Enter	0.5	Adjacent	א. כ	Encer	
Street	Between	Exit	0.3	Street	Becween	Exit	
Traffic	4 and 5	Total	0.7	Traffic	4 and 6	Total	ť
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	
Hour		Exit	0.4	Hour		Exit	
) of		Total	0.5	of		Total	
Generator	P.M.	Enter	0.5	Generator	P.H.	Enter	
		Exit	0.3			Exit	
		Total	0.7			Total	
SATIRDAY VE		201	6.8	SATURDAY VE	eice rip e	NDS	
?eak		Enter	0.3	Peak		Enter	
Hour of		Exit	0.2	Eour of		Excit	
Generator		Total	0.5	Generator		Total	
SUNDAY VEHI	CE CIP END	S	6.1	SENDAY VEEL	ce rp en	S	
?eak		Enter	0.2	Peak		Enter	
. Hour of		Exit	0.3	Hour of			
Generator		Total	0.5	Generator		Total	1 1 1
Sita: 21 Independent Adjacent St Generator ? Weekday Sar	4 Date Variable: D . Peak Hours eak Hours 7:30-8:30 6:15-7:15	: 10/12/79-1 welling Units : 7:30-8:30AM; AM 4:45-5:45	0/19/79 - 126 4:45-5:45PM PM	Site: Delet Independent Adjacent St. Generator Pa Weekday Sar	ed Date: Variable: Peak Hours: eak Hours:		
Sun.	2:00-3:00	PM		Sun.			

TRIP GENERATION RATES

APARTMENTS

\						المراد المتعادين ويتكاف ويواد	AND A DESCRIPTION OF A		
7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea M. Peak Hour M. Peak Hour M. Peak Hour	k Hour <u>9.5</u> k Hour <u>10.6</u> <u>9.5</u> <u>12.</u> 5	Measured Trip Rate	Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour $\frac{6.5}{8.2}$ k Hour $\frac{8.2}{9.9}$	Measured Trip Rate		
AVERAGE WEEK	DAY VEHICLE	RIP ENDS	6.7	AVERAGE WEEK	AVERAGE WEEKDAY VEHICLE TRIP ENDS				
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter-	0.2		
Eour	Between	Exit	· 0.6	Hour	Between	Exit	0.4 (
of -	7 and 9	Total	0.6	of	7 and 9	Total	0.6		
Adjacent	5	Enter	0.5	Adjacent	P. Y.	Encer	0.5		
Street	Between	Exit	0.2	Street	Between	Exit	:0.3 m		
Traffic	4 and 6	Total	0.7	Traffic	4 and 6	Total	0.8		
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.3		
Hour		Exiz	0.6	Hour		Exit	0.4		
. ož		Total	0.6	of		Total	0.7 👾		
Generator	P.M.	Enter	0.5	Generator	P.H.	Enter	0.5		
		Exit	0.3		-	Exit	0.4		
		Total	0.8			Total	0.9 🖨		
SATURDAY VE	sicie trip e	NDS	7.5	SATURDAY VEHICLE TRIP ENDS			9.2		
?eak		Enter	0.4	?eak		Enter	0.4		
Hour of		Exit	0.4	Eour of		Exit	0.4		
Generator		Total	0.8	Generator		Total	0.8		
SUNDAY VEHI	CLE TRIP END	s	5.5	SUNDAY VEHI	CLE TRIP END	S	8.2		
Peak		Enter	0.4	Peak		Inter	0.7		
Ecur of		Exit	0.5	Hour of		Exit	0.4)		
Generator		Total	0.9	Generator		Total	1.2		
Sita: 21 Independent Adjacent St Generator P Weekday Sat.	6 Date Variable: D Peak Hours Peak Hours 7:00-8:00 A 6:00-7:00 P	: 2/5/80-2/12/ welling Units : 7:00-8:00AM; M 4:45-5:45	/80 s - 114 4:15-5:15PM PM	Site: 217 Independent Adjacent St. Generator ?e Weekday Sat.	Date: Variable: Dw Peak Hours: 8:00-9:00 AM 4:30-5:30 PM	10/24/79 - 1 elling Units 7:15-8:15AM;4 5:30-6:30 P	0/31/79 - 180 :30-5:30PM M		
Sun.	3:45-4:45 P	ΥM	1	Sun.	7:15-8:15 PM	······································			

TRIP GENERATION RATES

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APARTMENTS

	Weekday Tr djacent Str djacent Str enerator A. enerator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	uk Hour <u>10.4</u> uk Hour <u>10.</u> 7 <u>10.8</u> <u>11.</u> 6	Measured Trip Rate	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ik Hour 4.9 ik Hour 7.2 5.3 9.5	Measured Trip Rate	
A	VERACE WEEK	DAY VEHICLE	RIP ENDS	7.8	AVERAGE WEEK	AVERAGE WEEKDAY VEHICLE TRIP ENDS			
ſ	Peak	A.M.	Eater	0.2	Peak	A.M.	Enter	مثلوه ويراث	
9	Hour	Berween	Exic	[.] 0.6	Hour	Between	Ēxi:		
	of	7 and 9	Total	0.8	of	7 and 9	Total	0.3	
	Adjacent	P.M.	Enter	0.5	Adjacent	P.Y.	Enter		
	Crease	Barzaan	Exit	0.3	Change -	Berveen	Exic	l an an	
9	Traffic	4 and 5	Total	0,8	Traffic	4 and 6	Total	0.5 '	
	Peak	A.M.	Enter	0.2	?eak	A.M.	Enter	at	
	Hour		Exic	0.6	Hour		Exit		
4 1	oŕ		Total	0.8	of		Total	0. ^	
	Generator	P.M.	Enter	0.6	Generator	P.M.	Enter		
			Exit	0.3			Exi:		
			Total	0.9			Total	0.7	
	SATURDAY VE	HOL TUP E	NDS	8.0	SATURDAY VE	HILE IRIP E	NES	7 ::	
ſ	?eak	<u>معانی میلاند باد با با با با</u> ی بر این	Enter	0.3	Peak		Enter		
	Hour of		Erit	0.4	Hour of		Excit		
Ę	Generator		Total	0.7	Generator		Total	0.7	
ſ	SUNDAY VEHI	ae rep end	s	7.0	SENDAY VEHI	CE RP END	S	5.5	
ſ	?eak		Enter	0.4	?eak		Enter		
ł	, Hour of		Exic	0.3	Eour of		Eztit		
	Generator		Total	0.7	Generator		Total	0.5	
	Sita: 218 Independent Adjacent St Generator F Weekday Sat	2 Date 7ariable: Dw . Peak Hours Peak Hours: 7:15-8:15 AM 12:30-1:30 F	: 11/7/79 - 1 velling Units :7:30-8:30AM;4 1 5:00-6:00 P	1/14/79 - 124 :45-5:45PM M	Site: 219 Independent Adjacent St. Generator 20 Weekday Sar	Date: Variable: Dw Peak Hours: aak Hours: 7:30-8:30 AM 11:00-12:00	8/8/79-8/15 relling Units 7:15-8:15AM;4 1 5:00-6:00 P AM	/79 - 158 :15-5:15PM M	

TRIP GENERATION RATES

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% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet 7.M. Pea M. Peak Hour M. Peak Hour	ak Hour ak Hour r r	Measured Trip Rate	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	Measured Trip Rate		
AVERAGE WEEK	DAY VEHICLE	TRIP ENDS		AVERACE WEEK	TRIP ENDS	8.1	
Peak	A.M.	Enter		Peak	A.M.	Enter	0.2
Hour	Between	Exit	•	Hour	Between	Excit	0.3
of	7 and 9	Total	1	of	7 and 9	Total	0.5
Adjacent	2.1.	Enter		Adjacent	P.M.	Enter	0.4
Straet	Between	Ixit		Street	Between	Exic	., 0.3
Traffic	4 and 6	Total		Traffic	4 and 6	Total	0.7
Peak	J.K.	Enter		Peak	A.M.	Encer	0.1
Hour		Exit		Hour		Exit	0.3
oř	-	Total		of		Total	0.1.1
Generator	P.M.	Enter		Generator	P.M.	Enter	0.4
		Exit				Exit	0.3
	}	Total				Total	0.7
SATURDAY VE	HIGE TRIP E	NDS		SATURDAY VE	8.1		
Peak	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Enter		?eak		Enter	0.3
Hour of		Exit		Lour of		Exit	0.3
Generator		Total		Generator		Total	0.7
SUNDAY VEHI	CLE IRLP END	S		SUNDAY VEHI	CLE TRIP ENDS	5	5.7
?eak		Encer		Peak		Enter	0.3
Eour of		Ezd:		Hour of		Exit	0.2)
Generator		Total		Generator		Total	0.5
Site: Dele Independent Adjacent St Generator F Weekday	ted Date Variable: . Peak Hours Peak Hours:	:: ::		Sita: 221 Independent Adjacent St. Generator Pa Weekday Sar	Date: Variable:Dwe Peak Hours: aak Hours: 7:15-8:15 AM	8/8/79-8/15, elling Units 7:30-8:30AM; 1 5:15-6:15	/79 - 156 () 4:30-5:30PM PM
Sun.				Sun.	3:30-4:30 PM	1	

TRIP GENERATION RATES

APARTMENTS

Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet 7.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>7.3</u> k Hour <u>8.9</u> <u>7.3</u> <u>8.</u> 9	Measured Trip Rate	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ak Hour 5.8 ak Hour <u>8.3</u> 5 <u>6.7</u> 5 <u>8.</u> 5	Measured Trip Rate
AVERAGE MEEK	DAY VEHICLE	TRIP ENDS	9.2	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	7.4
Peak	A.M.	Enter	0.3	Peak	A.M.	Enter	0.1
Hour	Berveen	Exit	· 0.4	Hour	Between	Exi:	(1 , 3
d of	7 and 9	Total	0.7	of	7 and 9	Total	0.4
. diagont	אכ	Enter	0.4	Addapant		Encer	0.3
ACJSCENE		Exit	0.4	AGJACELL	7	Exit	, 0.3
d Street	Setween	Total	0.8	Street	d and h	Total	0.6
Peak		Enter	0.3	Peak	A.M.	Enter	0.1
Four		Exiz	0.4	Hour		Exit	0.4
		Total	0.7			Total	 0 !
	P.M.	Enter	0 <u>4</u>		P.M.	Enter	Ú.4
Generator		Exit		Generalde		Exit	0 ?
		Total	0.8			Total	0.6
CATTONAY IT	ים כדפר בחוד:			SATURDAY VEHICLE TRIP ENDS			6,0
Peak		Enter	1.1	Peak	a hada barbarba ana baran ana	Enter	0.4
Your of			0.5	Four of		Exit	0.2
Canararor		Total	0.4	Caretator		Total	0.6
STATAY VENT	אנועב בונגע ביש	2	0.7	CINDLY WHI	נענה נוגמש בישו	<u>s</u>	6.4
Peak			6,4	Peak	and a second	Totat	0.3
- Four of		T-2-1 +	0.5	Four of			0.3
		Toral	0.3			Total	0.6
Sita: 22 Ondependent Adjacent St Generator F Weekday	2 Date: Variable:Dw Peak Hours: 7:45-8:45 AM	<pre>8/22/79 - 8 elling Units 7:45-8:45AM; 4:00-5:00 P</pre>	/29/79 - 55 4:00-5:00PM PM	Size: 223 Independent Adjacent St. Generator 20 Weekday	Date: Variable: Peak Hours: eak Hours: 7:15-8:15 A	9/12/79-9/1 Dwelling Units 8:00-9:00AM:4 M 4:30-5:30 F	9/79 - 126 :15-5:15PM PM
Sun.	<u>10:45-11:45</u> <u>6:30-7:30 PM</u>	AM [Sun:	4:45-5:45 P 6:15-7:15 P	M M	

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea met P.M. Pea M. Peak Hour M. Peak Hour	k Hour 6.1 k Hour 7.0 6.3 8.9	Measured Trip Race	Z Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Ecu: $\frac{4.7}{10.4}$ k Hour $\frac{10.4}{4.8}$ $\frac{10.5}{10.5}$	Measured Trip Rat: (
AVERACE WEEKDAY VEHICLE TRIP ENDS			10.3	AVERAGE WEEKDAY VEHICLE TRIP ENDS			10.3
Peak	A.M	Inter	0.1	Peak	A.M.	Enter	0.2
Hour	Berween	Extt	·0.5	Hour	Between	Exit	0.3 <u>(</u>
cf.	7 and 9	Total	0.6	of	7 and 9	Total	0.5
Adjacent	2.4.	Enter	0.4	Adjacent	P. M.	Encer	0.7
Streat	Between	Exit	0.3	Cemere	Bertreen	Exit	0.4
Traffic	4 and 6	Total	0.7	Traffic	4 and 6	Total	1.1
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.2
Zour	-	Exit	0.5	Hour		Exit	0.3
of	•	Total	0.7	of		Total	0,5.5
Generator	P.M.	Enter	0.6	Generator	P.H.	Enter	0.7
		Exit	0.3			Exit	0.4
		Total	0.9			Total	1.1 🦾
SATURDAY VE	ace rep en	DS	9.6	SATURDAY VER	ice rr ex	īs	13.8
?eak		Enter	0.4	Peak		Enter	0.5
Hour of		Exic	0.4	Eour of		Exit	0.5
Generator		Total	0.8	Generator		Total	1.0
SUNDAY VEHIC	LE IRIP ENDS		7.8	SUNDAY VEHIC	5	10.8	
Peak		Enter	0.3	?eak		Enter	0.5
Eour of Exit		0.3	Hour of		Exit	0.5	
Generator Total		0.6	Generator		Total	1.0	
Site: 300 Independent Adjacent St Generator ? Weekday Sat.	Date: Variable: <u>Dr</u> Peak Hours: eak Hours: 6:45-7:45 Al 11:45-12:45	8/12/80 - 8/ welling Units 7:00-8:00AM; M 5:30-6:30 PM	'19/80 s - 450 4:00-5:00PM PM	Site: 301 Independent Adjacent St. Generator Pe Weekday Sat.	Date: Variable: <u>Dw</u> Peak Hours: ak Hours: 7:15-8:15 A 4:00-5:00 P	12/10/79 - elling Units 7:00-8:00AM;5 M 4:30-5:30	12/17/79 - 193 :00-6:00PM PM

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>6.</u> 2 k Hour <u>10.3</u> <u>6.2</u> <u>10.</u> 7	Measured Trip Race	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Per reet P.M. Per M. Peak Hour M. Peak Hour	ak Hour 7.8 ak Hour 9.1 r 8.7 r 10.0	Measured Trip Race	
AVERAGE WEEK	DAY VEHICLE	TRIP ENIS	11.0	AVERAGE WEEK	DAY VEHICLE	RIP ENDS	9.8	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.2	
Eour	Between	Exit	.0.6	Hour	Between	Exit	0.6	
of	7 and 9	Total	0.7	oí	7 and 9	Total	0.8	
Adiacent	P.Y.	Enter	0.7	Adjacent	P.Y.	Enter	0.7	
Stroop	Bertreen	Zxi:	0.5	Green	Berween	Erci:	x 0.2	
Traffic	4 and 6	Total	1.1	Traffic	4 and 5	Total	0.9	
Peak	A.X.	Enter	0.1	?eak	A.M.	Enter	0.2	
Eour		Exit	0.6	Zour		Exit	0.7	
) of	•	Total	0.7	01		Total	0. 0	
Ganerator	P.M.	Enter	0.7	Conerator	P.X.	Enter	0.4	
		Exit	0.5			Exit	0, -	
		Total	1.2			Total	1.0	
SATERDAY VE		TS I	11.8	SATURDAY VE		NES	9.4	
?eak		Enter	0.5	?eak		Eater	0.4	
Hour of		Exit	0.6	Zour of		Exit	0.3	
L Generator		Total	1.1	Generator SUNDAY VEHICLE TRIP EN		Total	0.8	
SENDAY VERE	OLE TRIP ENDS	S	11.5			S	8.5	
?eak		Enter	0.7	Peak		Enter	0.2	
Eour of		Exit	0.5	Hour of		Exis	0.5	
Generator		Total	1.2	Generator		Total	0.7	
Size: 302 Oindependent Adjacent St Generator P Weekday	Date: Variable: <u>Dw</u> . Peak Hours: eak Hours: 7:30-8:30 A	: 8/21/80 - 8/ elling Units 7:30-8:30AM; M 5:15-6:15	28/80 - 316 :00-6:00PM PM	Sita: 303 Independent Adjacent St. Generator Pe Weekday	Date: Variable:Dw Peak Hours Peak Hours: 7:00-8:00 AM	12/10/79-12/ relling Units 7:30-8:30AM;4 5:00-6:00 Pl	18/79 - 251 :30-5:30PM M	
Sat.	Sat. 10:00-11:00 AM				Sat. 4:00-5:00 PM			
i umr.	14:17-1:17	T T.T		Sun. 8:00-9:00 PM				

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

					the second s		Contraction of the local division of the loc	
7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Peal reet P.M. Peal M. Peak Hour M. Peak Hour	k Hour <u>4.</u> 8 k Hour <u>8.</u> 8 <u>4.</u> 8 <u>8.</u> 8	Measured Trip Rate	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	Measured Trip Rate			
AVERACE WEEK	AVERAGE WEEKDAY VEHICLE TRIP ENDS			AVERAGE WEEKDAY VEHICLE TRIP ENDS			7.2.	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.0	
Hour	Between	Exit	·0.4	Hour	Between	Exit	0.3 0	
of	7 and 9	Total	0.5	of	7 and 9	Total	0.3	
Adjacent	P.Y.	Enter	0.6	Adjacent	P.M.	Enter	0.5	
Street	Between	Exit	0.4	Street	Between	Exit	- Q.2	
Traffic	4 and 6	Total	0.9	Traffic	4 and 6	Total	0.7	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.2	
Rour		Exit	0.4	Hour		Exit	0.4	
oř	•	Total	0.5	of		Total	0.5 ()	
Generator	P.Y.	Enter	0.6	Generator	P.H.	Enter	0.4	
		Exit	0.4			Exit	0.3	
		Total	0.9			Total	0.7	
SATURDAY VE	HICE TRIP EN	rs	11.4	SATURDAY VE	ALE TRIP EN	ts	7.1	
?eak		Enter	0.5	Peak		Enter	0.4	
Hour of		Exit	0.5	Eour of		Exic	0.3	
Generator		Total	1.0	Generator		Total	0.7 🗘	
SUNDAY VERI	CLE TRIP ENDS		9.3	SINDAY VEHICLE TRIP ENDS			6.3	
Peak		Enter	0.4	Peak		Enter	0.4	
Eour of		Exic	0.3	Hour of		Exit	0.3	
Generator		Total	0.7	Generator		Total	0.7	
Site: 304 Independent	Date: Variable: Du	8/20/80 - 8 velling Units 7:00-8:004M	2/27/80 - 270 5:00-6:00PM	Site: 305 Date: 8/21/80 - 8/28/80 Independent Variable: Dwelling Units - 100				
Generator ?	eak Hours:	5.00 6.00 T		Generator Pack Hours:				
Sat.	7:30-8:00 AM	3:00-6:00 F	1,1	Sat. 11:30-12:30 PM				
Sun.	6:00-7:00 PM			Sun. 4:15-5:15 PM				

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

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	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	ips In: eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>4.2</u> k Hour <u>9.5</u> <u>5.1</u> <u>9.9</u>	Measured Trip Race	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ak Hour 4.5 ak Hour 9.3 r 5.1 r 9.4	Measured Trip Race
Ī	AVERAGE WEEK	VERAGE WEEKDAY VEHICLE TRIP ENDS		9.1	AVERAGE WEEK	11.3		
ſ	Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	G.l
	Hour	Between	Exit	0.3	Hour	Between	Exis	0+4
-1	of	7 and 9	Total	0.4	of	7 and 9	Total	0.5
	Adjacent	2. <u>4</u> .	Enter	0.6	Adjacent	ז. י	Enter	0.7
	Streat	Between	Exiz	0.3	STRAF	Berween	Exit	.0.4
P	Traffic	4 and 6	Total	0.9	Traffic	4 and 6	Total	1.0
ſ	Peak	А.Ч.	Enter	0.1	Peak	A.X.	Encer	0.1
	Zour		Exit	0.4	Hour		Exit	0.5
3	oi	•	Total	0.5] of		Total	0 %
	Generator	P.X.	Enter	0.6	Generator	P. <u>M</u> .	Encer	0.7
			Exit	0.3			Exiz	0,4
			Total	0.9			Total	1.1
٩	SATURDAY VE		TS	9.2	SATURDAY VE	ace trip e	NDS	-10.7
	?eak	Peak Bour of		0.3	Peak Eour of		Enter	0.5
	Eouz of			0.5			Exit	0.4
	Generator		Total	0.9	Generator		Total	0.9
	SINDAY VEHICLE IRIP ENDS		7.2	SUNDAY VEHI	S	°.8		
	Peak		Enter	0.3	Peak Hour of		Encer	0.4
	- Eour of		Exic	0.3			Exit	0.4
	Generator Total		0.7	Generator		Total	8.0	
ć	Sita: 300 Independent Adjacent St Generator ? Weekday Sat. Sum	5 Date: 7ariable: Dv Peak Hours: eak Hours: 7:00-8:00 A 10:45-11:43 5:30-6:30 F	7/8/80 - 7/ xelling Units 7:45-8:45AM; AM 4:45-5:45 AM	15/80 - 181 5:00-6:00PM PM	Site: 307 Independent Adjacent St. Generator Pe Weekday Sat. Sum	Date: Variable: Dv Peak Hours: 6:45-7:45 Al 4:00-5:00 Pl 5:00-6:00 Pl	7/8/80-7/15/ velling Units 7:15-8:15AM;4 4 5:00-6:00 P 4	80 - 139 :45-5:45PM M

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

% Weekday Trips In: Adjacent Street A.M. Peak Hour 4.9 Adjacent Street P.M. Peak Hour 7.2 Generator A.M. Peak Hour 6.2 Generator P.M. Peak Hour 7.9				% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour 5.0 k Hour 8.6 5.0 9.1	Measured Trip Rate
AVERAGE WEEK	AVEDACE LEETDAY VEHTCLE TOTO FNIK			AVERAGE NEEK	11.0		
Peak	A.M.	2	0.1	Peak	A.M.	Fatar	0 1
			U.I		Partrage		0.1
Hour	DECMEED	Exit	• 0.4	Hour	Jelveen	Exit	0.4()
of	7 and 9	Total	0.5	of	7 and 9	Total	0.5
Adjacent	P.M.	Enter	0.4	Adjacent	P.M.	Encer	0.6
Streat	Batween	Exit	0.2	Street	Between	Exíc	
Traffic	 4 and 6	Total	0.7	Traffic	4 and 6	Total	0.9
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	0.1
Eour		Exit	0.4	Your		Exit	0.4
of		Total	0.6	af		Total	0.50
Generator	2.M.	Enter	0.5	Generator	P.M.	Enter	0.6
		Exit	0.3			Exic	0.4
		Total	0.8			Total	ے 1.0
SATURDAY VE	HICE TRIP EN	DS	9.4	SATURDAY VE	HALE TRIP IN		10.6
?eak		Enter	0.6	Peak		Enter	0.4
Hour of		Exit	0.3	Eour of		Exit	0.4
Generator		Total	0.9	Generator		Total	0.8 🗘
SUNDAY VEHI	CLE IRIP ENDS	5	9.4	SUNDAY VEHICLE TRIP ENDS			9.7
Peak		Enter	0.6	Peak		Enter	0.4
Hour of Exit Generator Total		0.3	Hour of Generator		Exit	0.4	
		0.9			Total	0.8	
Sita: 30 Independent Adjacent St Generator P Weekday	Date: Variable: <u>D</u> . Peak Hours: Peak Hours: 9:45-10:45	7/25/80-8/1/ welling Units 8:00-9:00AM; ² AM 5:15-6:1	/80 5 - 234 4:30-5:30PM 15 PM	Site: 309 Independent Adjacent St. Generator Pe Weekday	Date: Variable: Dwe Peak Hours: 2015-8015 AN	7/24/80 - 7 elling Units 7:15-8:15AM;4	/31/80 - 292 :15-5:15PM PM
Sat.	5:15-6:15	PM		Sat. 5:15-6:15 PM			
j Sun.	4:45-5:45	PM		Sum. 5:15-6:15 PM			
TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

	7 Weekday Tr Adjacent Str Adjacent Str Generator A Generator P	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>9.0</u> k Hour <u>9.2</u> <u>9.0</u> <u>9.3</u>	Measured Trip Race	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ik Hour <u>9.1</u> ik Hour <u>12.3</u> <u>9.2</u> 1 <u>2.3</u>	Measured Trip Rate
Ì	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	12.2	AVERAGE WEEK	DAY VEHICLE	RIP ENDS	6.8
Ī	Peak	A.M.	Enter	0.3	Peak	A.M.	Enter	0.1
	Hour	Between	Exit	· 0.8	Hour	3etween	Ixit	0.3
Ч	of	7 and 9	Total	1.1	of	7 and 9	Total	0.6
	Adjacent	D.Y	Enter	0.7	Adjacent	ס.ע.	Enter	0.6
	Charles -	Bertieen	Ixit	0.4	Creece	Bertreen	Exia	, 0.2
D	Traffic	4 and 6	Total	1.1	Traffic	4 and 6	Total	0.8 '
	Peak	A.M.	Enter	0.3	Peak	A.M.	Encer	0.1
	Eour		Exit	0.8	Hour		Exit	0.5
) of	• •	Total	1.1	of		Total	0, (
	Canararar	P.M.	Enter	0.8	Congrator	P.H.	Enter	0.(
	Generator		Exit	0.4	Generator		Exi:	0.7
			Total	1.1			Total	0.8
€	SATURDAY VE	HICE RP E	NTS	13.9	SATURDAY VEHICLE TRIP ENDS			8.6
	Peak		Enter	0.6	?eak		Enter	0.5
	Hour of		Exit	0.7	Eour of		Exit	0.3
Ę] Ə Generator		Total	1.2	Generator		Total	0.8
	SUNDAY VEHI		S	9.8	SUNDAY VEHI	CE TRP END	S	6.2
	Peak		Enter	0.5	Peak		Enter	0.5
	, Eour of		Excl.t	0.4	Hour of		Exit	0.3
	Generator	0	Total	0.9	Generator		Total	0.7
1	Site: 310 Independent Adjacent St Generator F Weekday Sat.	0 Date Variable: I 2. Peak Hours Peak Hours: 7:30-8:30 AN 12:45-1:45 J	: 3/12/80-3/3 Dwelling Units :7:15-8:15AM; 1 5:00-6:00 1	19/80 5 - 127 +:45-5:45PM PM	Sita: 311 Independent Adjacent St. Generator Pa Weekday Sat.	Date: Variable: Du Peak Hours: 2:00-8:00 AN 1:30-2:30 Pl	3/12/80-3/19/ welling Units 7:15-8:15AM;4 4 4:45-5:45 F	80 - 216 :45-5:45PM PM

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

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% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour 10.2 k Hour 10.6 10.2 11.2	Measured Trip Race	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	ik Hour 5.4 ik Hour 8.6 5.7 8.9	Measured Trip Rate (
AVERACE WEEK	DAY VEHICLE	RIP ENDS	7.7	AVERACE WEEK	DAY VEHICLE	TRIP ENDS	10.6	
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	0.1	
Hour	Between	Exit	· 0.6	Hour	Between	Exit	0.5	
of	7 and 9	Total	0.8	of	7 and 9	Total	0.6	
Adjacent	P.X.	Enter	0.6	Adjacent	P. <u>¥</u> .	Enter	0.6	
Street	Street Between Exit		0.2	Street	Between	Exit	,0.4	
Traffic	4 and 5	Total	0.8	Traffic	4 and 6	Total	0.9	
Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	0.3	
Hour Exit			0.6	Hour		Exit	0.3	
of		Total	0.8	of		Total	0.6Ç,	
Generator	P.M.	Enter	0.6	Generator	P.M.	Enter	0.6	
		Exit	0.2			Exit	0.4	
		Total	0.9			Total	0.9	
SATURDAY VE	HICE TRIP B	US	8.9	SATURDAY VEHICLE TRIP ENDS			9.3	
?eak		Enter	0.4	Peak		Enter	0.4	
Hour of		Exit	0.4	Eour of		Exit	0.4	
Generator		Total	0.8	Generator		Total	0.8\$	
SUNDAY VEHI	CLE RIP ENDS	3	6.5	SUNDAY VEHI	CLE RIP END	s	7.9	
Peak		Enter	0.4	Peak		Enter	0.5	
Hour of		Exit	0.3	Hour of		Exic	0.3	
Generator	Generator Total			Generator		Total	0.8	
Site: 31 Independent Adjacent St Generator F Weekday	2 Date: Variable: D . Peak Hours: eak Hours: 7:15-8:15 A	3/11/80-3/1 welling Units 7:15-8:15AM; M 4:45-5:45	8/80 - 266 4:30-5:30PM PM	Sita: 313 Independent Adjacent St. Generator Ps Weekday	Date: Variable: D Feak Hours: eak Hours: 10:30-11:30	6/17/80-6/2 welling Units 7:00-8:00AM;5 AM 4:30-5:30	4/80 - 145 <u>}</u> :00-6:00PM	
Sat.	5:30-6:30 P	M		Sat. 12:15-1:15 PM				
്യ ട്രാവി.	4:13-5:15 P	M		J SUR.	4:43-3:43 PM	1		

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

Adjacent Str Adjacent Str Generator A. Generator P.	eet A.M. Fea met P.M. Pea M. Peak Hour M. Peak Hour	k Hour 11.0 7.5 11.0	Measured Trip Rate	Adjacent Str Adjacent Str Generator A. Generator P.	eet P.M. Pe M. Peak Hou M. Peak Hou	ak Hour 12.7 10.1 r 15.5	Measure Trip Ra
VERAGE WEEK	DAY VEHICLE	TRIP ENDS	9.7	AVERAGE NEEK	DAY VEHICLE	RP ENS	6.6
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.1
Eour	Between	Exit	· 0.6	Hour	Between	Exit	0.6
of	7 and 9	Total	0.7	of	7 and 9	Total	0.7
Adjacent	P.N.	Enter	0.7	Adjacent	P.X.	Enter	0.6
2 maar	Perseun	Exit	0.4	Street	Berveen	īri :	, 0.2
Traffic	4 and 5	Total	1.1	Traffic	4 and 6	Total	0.8
Peak	A.X.	Enter	0.1	Peak	A.M.	Enter	0.1
Eour		Exit	0.6	Hour		Exit	0.6
of	↓ ↓ ↓	Total	0.7	e-		Total	r ·
	P.M.	Enter	0.7		P.H.	Enter	0.7
Gaintarar		Exit	0.4	Generator		Ēxit	0.3
		Total	1.1			Total	1.0
SATERDAY VE	ה סופי החוי	NTS	10.1	SATIRDAY JE		NES	7.0
?eak		Enter	0.5	?eak		Enter	0.4
Hour of		Exit	0.5	Hour of		Exd :	0.3
Generator		Total	1 0	Generator		Total	0.7
SUNDAY VEHI	ae rip end	S	6.8	SENDAY VEHI		S	5.7
?eak		Enter	0 /	Peak		Enter	0.3
. Hour of		Exi:	0.4	Hour of		Ex:1=	0.3
Gamerator		Total	0.7	Caperator		Total	0.6
Size: 31	4 Date	: 9/25/79-10/ elling Units	3/79 - 154	Site: 315 Independent	Date Variable: Dr Peak Hours	1/24/80-2/ velling Units	1/80 - 132

TRIP GENERATION RATES

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% Weekday Tr	ips In:	-		Weekday Tr	ips In:		
Adjacent Str Adjacent Str Generator A. Generator ?.	eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>9.8</u> k Hour <u>10.6</u> <u>10.1</u> <u>10.6</u>	Measured Trip Race	Adjacent Str Adjacent Str Generator A. Generator P.	eet A.M. Pea eet P.M. Pea M. Peak Hour M. Peak Hour	k Eour 8.5 k Eour 10.2 9.9 10.6	Measured Trip Rate (.
AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	8.7	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	13.5
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.4
Hour	Berween	Exit	· 0.8	Hour	Between	Exit	0.8 ()
of	7 and 9	Total	0.9	of	7 and 9	Total	1.1
Adjacent	P.M.	Enter	0.7	Adjacent	P.Y.	Enter	0.9
	Adjadent I.m. Zrit		0.2	Street	Bertreen	Exit	. 0.5
Traffic	4 and 6	Total	0.9	Traffic	4 and 6	Total	1.4
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.4
Eour	and and a second se	Exit	0.8	Hour		Exit	0.9
of · Total		Total	0.9	of		Total	1.3
Generator	P.M.	Inter	0.7	Generator	P.Y.	Enter	0.9
		Exic	0.2			Exit	0.5
		Total	0.9	1		Total	1.4
SATURDAY VE		TIS I	10.6	SATURDAY VEHICLE TRIP ENDS			13.9
?eak		Enter	0.5	?eak		Enter	0.7
Hour of		Exic	0.3	Eour of		Exit	0.6
Generator		Total	0.8	Generator		Total	1.2
SUNDAY VEHI	CLE IRIP ENDS	5	9.3	SUNDAY VEHI	CLE TRIP END	5	12.3
Peak	·	Enter	0.7	Peak		Enter	0.9
Hour of		Exic	0.4	Hour of		Exit	0.5)
Generator		Total	1.1	Generator		Total	1.5
Site: 31 Independent Adjacent St Generator P	6 Date: Variable: Dr . Peak Hours: Peak Hours:	3/6/80-3/13 velling Units 7:15-8:15AM;	/80 - 129 5:00-6:00PM	Site: 317 Independent Adjacent St. Generator Pe	Date: Variable: Dwe Peak Hours: eak Hours:	10/12/79-10 211ing Units 7:30-8:30AM;4	0/19/79 - 95 :30-5:30PM
Weekday Sat	7:30-8:30 A	4 5:00-6:00	PM	Weekday 7:15-8:15 AM 5:00-6:00 PM			
Sun.	<u>12:15-1:15</u>	ч РМ		Sun.	3:45-4:45	PM	

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

VERAGE WEEK Peak Pour	DAY VEHICLE				10.0	Measured Trip Rate	
Peak Pour		AVERAGE WEEKDAY VEHICLE TRIP ENDS		AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	10.9
20115		Enter	0.1	?eak	A.M.	Enter	0.3
	Berween	Exit	· 0.7	Hour	Between	Exit	0.6
of	7 and 9	Total	0.8	of	7 and 9	Total	0.9
. diagone	ייי <u>ר</u>	Enter	0.6		י ב	Encer	0,6
Adjacent	5 + 6 A +	Rovi +	0.2	Acjacent	- ++++	Frit	. 0.4
Streed	Jerveen	Total		Street	Between	Toral	1 0
Traffic	4 and 5	locat	0.8	Traffic	4 and 5		1.0
Peak	7.X.	Enter	0.1	Peak	A.M.	Enter	(). 3
Hour		Exit	0.9	Hour		Exis	0.6
of	e	Total	1.0	of		Total	0.0
Generator	P.M.	Enter	0.7	Generator	P.H.	Enter	0.1
		Exit	0.3		- -	Exit	C 4
		Total	1.0			Total])
ATTRAY VE		TES	7.3 SATURDAY VEHICLE TRIP ENDS			NES	11.3
?eak		Enter	0.3	Peak		Enter	0.5
Hour of		Exit	0.4	Lour of		Exit	0.4
Generator		Total	0.7	Generator		Total	0.9
UNDAY VEHI		3	5.4	SINDAY VEHI	CIE TRIP ENI	S	9.2
Peak		Enter	03	Peak		Inter	0.5
Eour of		Ereit	0.3	Hour of		Exit	0.4
Ganemator		Total	0.6	Canarator	- Total		0.9
Size: 318 Independent Adjacent St Generator ? Weekday Sat.	Date: Variable: Du . Peak Hours: eak Hours: 7:00-8:00 AN 2:00-3:00 PN	10/12/79-10 velling Units 7:30-8:30AM; 1 5:00-6:00	/19/79 - 101 4:30-5:30PM PM	Siza: 3 Independent Adjacent St. Generator Pe Weekday Sat.	19 Date: Variable: D Peak Hours: Pak Hours: 7:30-8:30 A 5:30-6:30 E	2/21/80-2/28 welling Units 7:30-8:30AM;5 M 4:30-5:30	/80 - 309 :00-6:00PM PM
	of Adjacent Streec Traffic Peak Eour of Generator ATURDAY VE Peak Hour of Generator EATURDAY VE Peak Hour of Generator Peak Eour of Generator State St	of 7 and 9 Adjacent 7.M. Street 3etween Traffic 4 and 6 Peak A.M. Eour 0 of P.M. Generator P.M. ATURDAY VEHICLE TRUP EN Peak Hour of Generator Paak Hour of Generator UNDAY VEHICLE TRUP ENE Paak Eour of Generator Site: 318 Date: Mekday 7:00-8:00 AN Sat. 2:00-3:00 PN Sun. 1:00-2:00 PN	of 7 and 9 Total Adjacent 7.M. Enter Street Between Exit Traffic 4 and 6 Total Peak A.M. Enter Eour Exit Enter diacent P.M. Enter Eour Exit Enter of Total Exit of P.M. Enter Generator P.M. Enter Exit Total AftRDAY VEHICLE TRIP ENDS Paak Paak Enter Hour of Exit Generator Total UNDAY VEHICLE TRIP ENDS Paak Four of Exit Generator Total UNDAY VEHICLE TRIP ENDS Paak Enter Eour of Exit Enter Eour of Exit Generator Total Sita: 318 Date: 10/12/79-10 Independent Variable: Dwelling Units Mekday 7:00-8:00 AM 5:00-6:00 Sat. 2:00-3:00 PM Sut. 1:00-2:00 PM	of 7 and 9 Total 0.7 of 7 and 9 Total 0.8 Adjacent 7.M. Enter 0.6 Street Between Exit 0.2 Traffic 4 and 6 Total 0.8 Peak A.M. Enter 0.1 Hour Exit 0.9 of Total 1.0 Generator P.M. Enter 0.7 Exit 0.3 Total 1.0 ATURDAY VEHICLE TRUE DNS 7.3 Paak Enter Hour of Exit 0.4 Generator Hour of Exit 0.4 0.7 INDAY VEHICLE TRUE DNS 7.3 Paak Enter Paak Enter 0.3 0.7 INDAY VEHICLE TRUE ENES 5.4 Paak Enter Paak Enter 0.3 0.6 Sita: 318 Date: 10/12/79-10/19/79 Independent Variable: Dwelling Units - 101 0.6 Sita: 318 Date: 10/12/79-10/19/79 Independent Variable: Dwelling Units - 101 0.6 Sita: 318 Date: 10/12/79-10/19/79 Independent Variable: Dwelling Units - 101 0.6	of 7 and 9 Total 0.8 of Adjacent 7.M. Enter 0.6 Adjacent Street 3etween Exit 0.2 Street Traffic 4 and 5 Total 0.8 Traffic Peak A.M. Enter 0.1 Peak Hour Exit 0.9 Hour of Total 1.0 of Generator P.M. Enter 0.7 Generator Of Total 1.0 of Generator Of Total 1.0 of Generator Of P.M. Enter 0.7 Generator Of Total 1.0 of Generator Generator P.M. Enter 0.3 Peak Hour of Exit 0.4 Hour of Generator Generator Total 0.7 Generator Generator INDAY VEHICLE TRIP ENDS 5.4 SUNDAY VEHICLE SUNDAY VEHICLE Paak Enter 0.3 Peak Hour of Generator Total 0.6 Generator NEAV VEHICLE TRIP ENDS 5.4 SUNDAY VEHICLE Sunday </td <td>add and 9 Total 0.7 model of 7 and 9 Total 0.8 of 7 and 9 Adjacent 7.M. Enter 0.6 Adjacent 7.M. Street Between Exit 0.2 Street Between Traffic 4 and 6 Total 0.8 Traffic 4 and 6 Peak A.M. Enter 0.1 Peak A.M. Hour Exit 0.9 Hour 0 of Total 1.0 of 7.M. Generator P.M. Enter 0.7 Generator of Total 1.0 of 7.M. Generator P.M. Enter 0.7 Generator Zrit 0.3 Total 1.0 0 AttREAY VEHICLE TYLP DUS 7.3 SATURDAY VEHICLE TRUP E Paak Enter 0.3 Peak Hour of Exit 0.4 Hour of Generator Total 0.7 Generator INDAY VEHICLE TRUP ENDS 5.4 SUNDAY VEHICLE TRUP END Paak Enter 0.3 Feak Hour of Generator Generator</td> <td>and the second secon</td>	add and 9 Total 0.7 model of 7 and 9 Total 0.8 of 7 and 9 Adjacent 7.M. Enter 0.6 Adjacent 7.M. Street Between Exit 0.2 Street Between Traffic 4 and 6 Total 0.8 Traffic 4 and 6 Peak A.M. Enter 0.1 Peak A.M. Hour Exit 0.9 Hour 0 of Total 1.0 of 7.M. Generator P.M. Enter 0.7 Generator of Total 1.0 of 7.M. Generator P.M. Enter 0.7 Generator Zrit 0.3 Total 1.0 0 AttREAY VEHICLE TYLP DUS 7.3 SATURDAY VEHICLE TRUP E Paak Enter 0.3 Peak Hour of Exit 0.4 Hour of Generator Total 0.7 Generator INDAY VEHICLE TRUP ENDS 5.4 SUNDAY VEHICLE TRUP END Paak Enter 0.3 Feak Hour of Generator Generator	and the second secon

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

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% Weekday Tr Adjacent Str	ips In: eet A.M. Pea	k Hour 9.1		Z Weekday Trips In: Adjacent Street A.M. Peak Hour 7.5 Measure				
Adjacent Str Generator A.	eet P.M. Pea M. Peak Hour	k Hour <u>9.9</u> <u>9.1</u>	Measured Trip Rate	Adjacent Str Generator A.	eet P.M. Pea M. Peak Hour	k Hour 8.8 7.6	Trip Rate	
Generator ?.	M. Peak Hour	10.0		Generator P.	M. Peak Hour	9.6	5.	
AVERAGE NEEK	DAY VEHICLE	TRIP ENDS	8.4	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	11.1	
Peak	A.M.	Eater	0.1	Peak	A.M.	Enter	0.2	
Hour	Between	Exit	• 0.7	Hour	Between	Exit	0.6	
of	7 and 9	Total	0.8	of	7 and 9	Total	0.8	
Adjacent	P.N.	Enter	0.6	Adjacent	י ע	Encer	0.6	
Stroot	Betteen	Exit	0.2	Street	Between	Exit	20.4	
Traffic	4 and 6	Total	0.8	Traffic	4 and 5	Total	1.0	
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.3	
Hour		Exic	0.7	Hour		Exit	0.6	
of	•	Total	0.8	of		Total	0.¢¢	
Caretator	P. <u>M</u> .	Enter	0.6	Caparator	P.M.	Encer	0.7	
Generator		Exit	0.2	Generator		Exit	0.4	
		Total	0.8			Total	1.1	
SATURDAY VE	HCI RP R	IDS	7.7	SATURDAY VEHICLE TRIP ENDS			11.8	
?eak	······································	Enter	0.5	Peak		Enter	0.6	
Hour of		Exic	0.3	Eour of		Exit	0.5	
Generator		Total	0.8	Generator		Total	1.09	
SUNDAY VEHI	CLE IRIP END	5	6.3	SUNDAY VEHI	IE RIP END	S	9.0	
Peak	<u></u>	Enter	. 0.3	Peak		Enter	0.7	
Ecur of		Ezic	0.3	Hour of		Exic	0.45	
Generator		Total	0.6	Generator		Total	1.0	
Site: 320) Date:	2/5/80-2/12	/80	Site: 321	Date:	10/24/79-10)/31/79	
Incepencient	Variable: D	welling Units	- 111	Incependent	Variable: Dw	elling Units	- 168	
Adjacent St Generator P	eak Hours:	/:13-8:13AM;	4:30-3:30PM	Generator Peak Hours:				
sat.	$\frac{1:10-8:10}{1:00-2:00}$ P	M 4:40-0:40 M	F 21	Weekday /:45-8:45 AM 5:15-6:15 PM Sat. 3:45-4:45 PM				
Sun.	3:15-4:15 P	<u>м</u>	······································	Sun. 1:15-2:15 PM				

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

TERAGE WEEK	DAY VEHICLE	TRIP ENDS	9.7	AVERAGE WEEKDAY VEHICLE TRIP ENDS			9.4
Peak	A.M.	Enter	0.1	Peak	A.M.	Enter	0.2
Hour	Between	Exit	· 0.7	Hour	Between	Exit	0.5
oí	7 and 9	Total	0.8	of	7 and 9	Total	0.7
Adjacent	P.X.	Enter	0.7	Adjacent	P.M.	Enter	0.4
Street	Berveen	Exit	0.3	Street	Berween	Exit	÷0.3
Traffic	4 and 6	Total	1.0	Traffic	4 and 6	Total	0.8
Peak	A.M.	Enter	0.2	Peak	A.M.	Inter	0.3
Lour		Exic	0.7	Hour		Exit	0.7
of	•	Total	0.9	of		Total	1.1
Generator	Р.М.	Enter	0.7	Generator	2.4.	Eater	0.7
		Exit	0.3			Exit	0.3
		Total	1.0			Total	1.0
ATURDAY VE	ice RP e	NIS	8.2	SATURDAY VE	HALE TRIP E	NTS -	9.8
?eak		Enter	0.4	Peak		Enter	0.4
Hour of		Exit	0.3	Eour of		Exit	0.5
Generator		Total	0.7	Generator		Total	0.8
UNDAY VEHIC	ie rip end	S	7.3	SUNDAY VEHI	CE TRE END	S	7.7
?eak		Enter	0.5	Peak	+	Enter	0.4
Ecur of		Essie	0.4	Hour of		Exit	0.3
Generator		Total	1.0	Generator		Total	0.7
ita: 322	Date Variable:	: 11/7/79-11/1 Dwelling Units	4/79 - 115	Sita: 323 Independent	Date: Variable: Dw	9/4/79-9/11/ elling Units	79

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TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

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X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator ?.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Eour 7_1 k Hour 7.0 8.3 8.2	Measured Trip Race	7 Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	Measured Trip Rate		
AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	11.1	AVERAGE WEEK	DAY VEHICLE	TRIP ENDS	10.5
Peak	A.M.	Enter	0.3	Peak	A.M.	Enter	0.1
Eour	Between	Exit	· 0.5	Hour	Between	Exit	0.5 _C
of	7 and 9	Total	0.8	af	7 and 9	Total	0.6
Adjacent	Adjacent 2.M. Enter			Adjacent	P.M.	Enter	0.7
Street	Between	Exit	0.3	Street	Berween	Exit	<u>,</u> 0.4
Traffic 4 and 6 Total			0.8	Traffic	4 and 6	Total	1.00
?eak	A.X.	Enter	0.3	Peak	A.M.	Enter	0.1
Eour		Exit	0.6	Hour		Exit	0.5
of	•	Total	0.9	of		Total	0 🔊
Generator	P.M.	Enter	0.5	Generator	P.X.	Enter	0.7
		Exit	0.4			Exit	0.4
、		Total	0.9			Total	1.0
SATURDAY VE	ice rip en	TS I	9.9	SATURDAY VEHICLE TRIP ENDS			10.7
?eak		Enter	0.4	Peak		Enter	0.4
Hour of		Exit	0.4	Eour of		Exit	0.4
Generator		Total	0.8	Generator		Total	0.8
SURDAY VEHIC	ie trip ends		8.1	SUNDAY VEHIC	le RP end	5	9.1
Peak		Enter	0.3	Peak		Enter	0.5
Hour of		Exic	0.4	Hour of		Exit	0.2)
Generator		Total	0.7	Generator		Total	0.9
Site: 324 Independent Adjacent St. Generator P Weekday Sat. Sun	4 Date: Variable: Dv Peak Hours: eak Hours: 7:30-8:30 AM 6:30-7:30 PM	8/8/79-8/ velling Units 7:45-8:45AM; 5:00-6:00 P	16/79 - 194 4:15-5:15PM M	Site: 32. Independent Adjacent St. Generator Pe Weekday Sat. Sur	5 Date: Variable: Dwo Peak Hours: ak Hours: 7:45-8:45 AM 7:30-8:30 PM	8/22/79-8/29 elling Units - 7:30-8:30AM;4 5:00-6:00 PM	9/79 - 108) :30-5:30PM

TRIP GENERATION RATES

SINGLE-FAMILY DETACHED HOUSING

	% Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour <u>8.</u> 2 k Hour <u>10.1</u> <u>8.2</u> <u>10.</u> 4	M≥asured Trip Race	X Weekday Tr Adjacent Str Adjacent Str Generator A. Generator P.	rips In: reet A.M. Pea reet P.M. Pea M. Peak Hour M. Peak Hour	k Hour 8.9 k Hour 9.0 8.9 <u>9.5</u>	Measured Trip Rate
ſ	AVERAGE NEER	DAY VEHICLE	TRIP ENDS	12.2	AVERAGE WEEK	TAY VEHICLE	RIP ENIS	12.2
Ĩ	Peak	A.M.	Enter	0.2	Peak	A.H.	Enter	
d	Hour	Between	Exit	0.8	Hour	3etween	Exit	
	of	7 and 9	Total	1.0	of	7 and 9	Total	1.1
	Adjacent	2 Y.	Enter	0.8	Adjacent	P.Y.	Encer	
	Straat	Berueen	Zxit	0.5		Between	Exít	/
2	Traffic	4 and 6	Total	1.2	Traffic	4 and 6	Totai	1.1
	Peak	A.M.	Enter	0.2	Peak	A.M.	Enter	
	Eour		Exit	0.8	Hour		Exit	and and a second se
. 1) of	*	Total	1.0	of		Total	1.1
	Generator	P.M.	Enter	0.8	Ganerator	P.M.	Eater	
			Excit	0.5		· · · ·	Exit	
			Total	1.3			Total	1.2
Ś	SATURDAY VE	HICLE TRUP EN	TIS .	הוו	1.0 SATURDAY VEHICLE TRUP E			12.1
	?esk	*	Zater	0.6	Peak		Enter	
	Hour of		Exit	0.4	Eour of		Exit	
Ę	Generator		Total	1 0	Generator		Total	1.1
	SUNDAY VEHI		5	10.4	SUNDAY VEHI	CLE TRIP ENDS	5	10.1
	Peak		Enter	0.5	?eak		Encer	
I	j Eour of		Ezci :	0.5	Hour of		Exic	
	Generator		Total	1.0	Generator		Total	1.0
(Size: 320 Andependent Adjacent St Generator ?	6 Date: Variable: <u>Dw</u> . Peak Hours: Peak Hours:	9/19/79 - elling Units 7:30-8:30AM	9/26/79 - 105 ;4:30-5:30PM	Sita: 32 Independent Adjacent St. Generator Pa	7 Date: Variable: Dw Peak Hours: Pak Hours:	11/15/79-11/2 elling Units 7:15-8:15AM;4	22/79 - 95 :15-5:15PM
	Weekday Sat. Sun.	7:30-8:30 AM 4:00-5:00 PM 5:00-6:00 PM	1 4:45-5:45 1 1	PM	Weekday Sat. Sun.	7:15-8:15 AM 4:00-5:00 PM 5:15-6:15 PM	3:30-4:30 Pl	<u>1</u>

APPENDIX B

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Comprehensive Virginia Statistics Stratified by Land Use

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Table B-1

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Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 50,000-99,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Indepention Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	101.2	116.6	90.4	2	80
Peak	A.M.	Enter	1.4	1.7	1.1	2	80 ()
Hour	Between	Exit	1.3	1.6	1.0	2	80
of	7 and 9	Total	2.6	3.3	2.2	2	80
Adjacent	P.M.	Enter	5.0	5.1	5.0	2	80
Street	Between	Exit	5.2	5.5	5.0	2	80 0
Traffic	4 and 6	Total	10.2	10.6	10.0	2	80
Peak	A.M.	Enter	3.8	3.8	3.8	2	80
Hour		Exit	3.5	3.6	3.4	2	80
of		Total	7.4	7.5	7.2	2	80
Generator	P.M.	Enter	5.5	5.6	5.5	2	80
		Exit	5.3	5.7	5.0	2	80
	c.	Total	10.8	11.3	10.5	2	80 👻
SATURDAY V	EHICLE TRIP	ENDS	129.7	147.8	116.9	2	80
Peak		Enter	5.7	6.1	5.1	2	80
Hour of		Exit	5.6	5.8	5.2	2	80 🗘
Generator		Total	11.3	11.9	10.4	2	80
SUNDAY VER	HICLE TRIP E	NDS	74.4	100.9	55.8	2	80
Peak		Enter	3.9	4.1	3.8	2	80
Hour of	Hour of Exit		3.5	4.1	3.1	2	80
Generator Total		7.4	8.2	6.9	2.	80	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		2.6	2.8	2.4	2	80 🗇	
Adjacent S	Adjacent Street P.M. Peak Hour			11.0	9.1	2	80
Generator	Generator A.M. Peak Hour			8.3	6.2	2	80
Generator	P.M. Peak Ho	ur	10.7	11.7	9.7	2	80

Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 100,000-199,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	AVERAGE WEEKDAY VEHICLE TRIP ENDS			104.9	53.9	7	156.3
Peak	A.M.	Enter	1.0	1.6	0.5	7	156.3
Hour	Between	Exit	0.8	1.5	0.3	7	156.3
of	7 and 9	Total	1.7	3.1	1.0	7	156.3
Adjacent	P.M.	Enter	3.7	5.8	2.4	7	156.3
Street	Between	Exit	3.7	5.4	2.5	7	156.3
Traffic	4 and 6	Total	7.3	11.1	4.9	7	156.3
Peak	A.M.	Enter	2.7	3.7	2.1	7	156.3
Hour		Exit	2.5	3.1	2.1	7	156.3
of	-	Total	5.2	6.8	4.2	7	156.0
Generator	P.M.	Enter	4.0	5.8	2.4	7	156.3
		Exit	3.9	5.9	2.7	7	156.3
		Total	7.9	11.7	5.1	7	136.3
SATURDAY V	EHICLE TRIP	ENDS	92.5	115.0	58.8	7	156.3
Peak		Enter	4.5	6.3	2.5	7	156.3
Hour of		Exit	4.3	5.3	2.5	7	156.3
Generator		Total	8.8	10.9	5.0	. 7	156.3
SUNDAY VEI	HICLE TRIP EN	NDS	46.4	87.7	20.5	7	156.3
Peak		Enter	2.7	6.2	1.4	7	156.3
Hour of	Hour of Exit		2.5	5.0	0.9	7	156.3
Generator Total		5.2	11.2	2.3	7	156.3	
% WEEKDAY TRIPS IN:		Average %	Maximm %	Minimum %			
Adjacent Street A.M. Peak Hour		2.3	3.8	1.5	7	156.3	
Adjacent Street P.M. Peak Hour		9.6	10.8	8.2	7	156.3	
Generator .	Generator A.M. Peak Hour			7.7	6.3	7	156.3
Generator	P.M. Peak Hou	ur	10.3	11.2	9.4	7	156.3

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Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 200,000-299,999 Square Feet

	_		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Indepenci Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	45.3	48.1	43.8	3	278.5
Peak	A.M.	Enter	0.4	0.5	0.2	3	278.5
Hour	Between	Exit	0.2	0.3	0.1	3	278.5
of	7 and 9	Total	0.6	0.8	0.3	3	278.5
Adjacent	P.M.	Enter	2.0	2.2	1.8	3	278.5
Street	Between	Exit	2.1	2.3	1.9	3	278.5
Traffic	4 and 6	Total	4.2	4.5	3.7	3	278.5
Peak	A.M.	Enter	1.8	2.0	1.8	3	278.5
Hour		Exit	1.7	1.8	1.5	3	278.5 ,
of	P.M.	Total	3.5	3.8	3.3	3	278.5
Generator		Enter	2.3	2.6	2.0	3	278.5
		Exit	2.1	2.3	1.9	3	278.5
		Total	4.4	4.6	3.9	3	278.5
SATURDAY V	EHICLE TRIP	ENDS	62.6	74.8	56.3	3	278.5
Peak		Enter	3.3	4.4	2.4	3	278.5
Hour of		Exit	2.9	3.2	2.3	3	278.5 🔿
Generator		Total	6.1	7.6	4.7	3	278.5
SUNDAY VER	HICLE TRIP E	NDS	10.7	15.6	5.3	3	278.5
Peak		Enter	0.6	0.8	0.4	3	278.5
Hour of	Hour of Exit		0.7	0.8	0.4	3	278.5
Generator Total		1.2	1.6	0.8	3	278.5	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		1.3	1.6	0.6	3	278.5 🕤	
Adjacent Street P.M. Peak Hour			9.2	10.1	8.5	3	278.5
Generator A.M. Peak Hour			7.8	8.5	6.8	3	278.5
Generator 1	P.M. Peak Ho	ur	9.6	10.5	8.9	3	278.5

Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 300,000-399,999 Square Feet

		Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable	
AVERAGE WE	AVERAGE WEEKDAY VEHICLE TRIP ENDS		72.5	N/A	N/A	1	314
Peak	A.M.	Enter	1.0	N/A	N/A	1	314
Hour	Between	Exit	0.8	N/A	N/A	1	314
of	7 and 9	Total	1.7	N/A	N/A	1	314
Adjacent	P.M.	Enter	3.7	N/A	N/A	1.	314
Street	Between	Exit	3.6	N/A	N/A	1	314
Traffic	4 and 6	Total	7.4	N/A	N/A	1	314
Peak	A.M.	Enter	3.0	N/A	N/A	1	314
Hour		Exit	3.0	N/A	N/A	1	314
of		Total	6.0	N/A	N/A	1	314
Generator	P.M.	Enter	3.7	N/A	N/A	1	314
		Exit	3.6	N/A	N/A	1	314
		Total	7.4	N/A	N/A	1	314
SATURDAY V	ÆHICLE TRIP	ENDS	91.9	N/A	N/A	1	314
Peak		Enter	4.9	N/A	N/A	1	314
Hour of		Exit	4.7	N/A	N/A	1	314
Generator		Total	9.5	N/A	N/A	1	314
SUNDAY VE	HICLE TRIP E	NDS	23.1	N/A	N/A	1	314
Peak		Enter	1.3	N/A	N/A	1	314
Hour of		Exit	1.5	N/A	N/A	1	314
Generator Total		2.8	N/A	N/A	1	314	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		2.4	N/A	.N/A	1	314	
Adjacent Street P.M. Peak Hour		10.2	N/A	N/A	1	314	
Generator	A.M. Peak Ho	ur	8.3	N/A	N/A	1	314
Generator 1	P.M. Peak Ho	ur	10.2	N/A	N/A	1	314

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Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 400,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WEEKDAY VEHICLE TRIP ENDS			47.2	N/A	N/A	1	472.9
Peak	A.M.	Enter	0.3	N/A	N/A	1	472.9
Hour	Between	Exit	0.2	N/A	N/A	· 1	472.9
of	7 and 9	Total	0.5	N/A	N/A	1	472.9
Adjacent	P.M.	Enter	1.9	N/A	N/A	1	472.9
Street	Between	Exit	1.9	N/A	N/A	1	472.9
Traffic	4 and 6	Total	3.8	N/A	N/A	1	472.9
Peak	A.M.	Enter	2.0	N/A	N/A	1	472.9
Hour		Exit	1.6	N/A	N/A	1	472.9
of		Total	3.5	N/A	· N/A	1	472.9
Generator	P.M.	Enter	2.2	N/A	N/A	1	472.9
		Exit	2.1	N/A	N/A	1	472.9
		Total	4.2	N/A	N/A	1	472.9
SATURDAY V	EHICLE TRIP	ENDS	59.5	N/A	N/A	1	472.9
Peak.		Enter	2.4	N/A	N/A	1	472.9
Hour of		Exit	2.8	N/A	N/A	1	472.° ©
Generator		Total	5.2	N/A	N/A	1	472.9
SUNDAY VE	HICLE TRIP E	NDS	10.2	N/A	N/A	1	472.9
Peak		Enter	0.6	N/A	N/A	1	472.9
Hour of		Exit	0.8	N/A	N/A	1	472.9
Generator Total		1.3	N/A	N/A	1	472.9	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %		
Adjacent S	Adjacent Street A.M. Peak Hour		1.0	N/A	N/A	1	472.90
Adjacent S	Adjacent Street P.M. Peak Hour		8.0	N/A	N/A	1	472.9
Generator	A.M. Peak Ho	ur	7.5	N/A	N/A	1	472.9
Generator	P.M. Peak Ho	ur	9.0	N/A	N/A	1	472.9

Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: 500,000-999,999 Square Feet

		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable	
AVERAGE WE	EKDAY VEHICI	LE TRIP ENDS	36.5	44.8	27.6	6	751.2
Peak	A.M.	Enter	0.4	0.6	0.2	6	751.2
Hour	Between	Exit	0.2	0.4	0.1	6	751.2
of	7 and 9	Total	0.6	1.1	0.3	6	751.2
Adjacent	P.M.	Enter	1.6	2.0	1.2	6	751.2
Street	Between	Exit	1.5	2.0	1.1	6	751.2
Traffic	4 and 6	Total	3.2	4.0	2.3	6	751.2
Peak	A.M.	Enter	1.4	1.9	1.1	6	751.2
Hour		Exit	1.1	1.5	0.8	6	751.2
of	•	Total	2.5	3.2	1.9	6	751.2
Generator	P.M.	Enter	1.7	2.1	1.4	6	751.2
	-	Exit	1.7	2.1	1.2	6	751.2
		Total	3.4	4.1	2.5	6	751.2
SATURDAY V	EHICLE TRIP	ENDS	51.1	70.4	33.3	6	751.2
Peak		Enter	2.4	3.7	1.0	6	751.2
Hour of		Exit	2.5	3.2	1.6	6	751.2
Generator		Total	5.0	6.9	2.9	6	751.2
SUNDAY VEH	HICLE TRIP E	NDS	10.0	20.0	4.1	6	751.2
Peak		Enter	0.6	1.7	0.2	6	751.2
Hour of		Exit	0.7	1.7	0.2	6	751.2
Generator Total		1.3	3.4	0.4	6	751.2	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent St	reet A.M. P	eak Hour	1.7	3.2	1.1	6	751.2
Adjacent St	reet P.M. P	eak Hour	8.7	9.5	7.3	6	751.2
Generator A	A.M. Peak Ho	ur	7.0	7.5	6.2	6	751.2
Generator I	P.M. Peak Ho	ur	9.3	9.7	8.9	6	751.2

Table B-7

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Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: Over 1,250,000 Square Feet

		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independra Variable	
AVERAGE WE	EKDAY VEHICI	LE TRIP ENDS	34.0	N/A	N/A	1	1,268.2
Peak	A.M.	Enter	0.4	N/A	N/A	1	1,268.2
Hour	Between	Exit	0.1	N/A	N/A	1	1,268.2
of	7 and 9	Total	0.5	N/A	N/A	1	1,268.2
Adjacent	P.M.	Enter	1.1	N/A	N/A	1	1,268.2
Street	Between	Exit	1.3	N/A	N/A	1	1,268.2
Traffic	4 and 6	Total	2.5	N/A	N/A	1	1,268.2
Peak	A.M.	Enter	1.3	N/A	N/A	1	1,268.2
Hour		Exit	0.8	N/A	N/A	1	1,268.2
of		Total	2.1	N/A	N/A	1	1,268.2
Generator	P.M.	Enter	1.9	N/A	N/A	1	1,268.2
		Exit	1.2	N/A	N/A	1	1,268.2
		Total	3.1	N/A	N/A	1	1,268.2
SATURDAY V	EHICLE TRIP	ENDS	42.2	N/A	N/A	1	1,268.2
Peak		Enter	1.8	N/A	N/A	1	1,268.2
Hour of		Exit	2.1	N/A	N/A	1	1,268.2
Generator		Total	3.8	N/A	N/A	1	1,268.2
SUNDAY VEF	HICLE TRIP E	NDS	21.8	N/A	N/A	1	1,268.2
Peak		Enter	1.5	N/A	N/A	1	1,268.2
Hour of		Exit	1.7	N/A	N/A	1	1,268.2
Generator	Generator Total		3.2	N/A	N/A	1	1,268.2
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent St	reet A.M. P	eak Hour	1.5	N/A	N/A	1	1,268.2
Adjacent St	Adjacent Street P.M. Peak Hour		7.3	N/A	N/A	1	1,268.2
Generator A	A.M. Peak Ho	ur	6.3	N/A	N/A	1	1,268.2
Generator I	P.M. Peak Ho	ur	9.1	N/A	N/A	1	1,268.2

Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: Neighborhood, Under 100,000 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WEEKDAY VEHICLE TRIP ENDS			101.2	116.6	90.4	2	80
Peak	A.M.	Enter	1.4	1.7	1.1	2	80
Hour	Between	Exit	1.3	1.6	1.0	2	80
of	7 and 9	Total	2.6	3.3	2.2	2	80
Adjacent	P.M.	Enter	5.0	5.1	5.0	2	80
Street	Between	Exit	5.2	5.5	5.0	2	80
Traffic	4 and 6	Total	10.2	10.6	10.0	2	80
Peak	A.M.	Enter	3.8	3.8	3.8	2	80
Hour		Exit	3.5	3.6	3.4	2	80
of		Total	7.4	7.5	7.2	2	80
Generator	P.M.	Enter	5.5	5.6	5.5	2	80
		Exit	5.3	5.7	5.0	2	80
		Total	10.8	11.3	10.5	2	80
SATURDAY V	EHICLE TRIP	ENDS	129.7	147.8	116.9	2	80
Peak		Enter	5.7	6.1	5.1	2	80
Hour of		Exit	5.6	5.8	5.2	2	80
Generator		Total	11.3	11.9	10.4	2	80
SUNDAY VER	HICLE TRIP E	NDS	74.4	100.9	55.8	2	80
Peak		Enter	3.9	4.1	3.8	2	80
Hour of		Exit	3.5	4.1	3.1	2	80
Generator Total		7.4	8.2	6.9	2	80	
% WEEKDAY	TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Si	Adjacent Street A.M. Peak Hour		2.6	2.8	2.4	2	80
Adjacent St	treet P.M. P	eak Hour	10.1	11.0	9.1	2	80
Generator A	A.M. Peak Ho	ur	7.3	8.3	6.2	2	80
Generator 1	P.M. Peak Ho	ur	10.7	11.7	9.7	2	80

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Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	AVERAGE WEEKDAY VEHICLE TRIP ENDS			104.9	43.8	12	226.4
Peak	A.M.	Enter	0.7	1.6	0.2	12	226.4
Hour	Between	Exit	0.5	1.5	0.1	12	226.4
of	7 and 9	Total	1.2	3.1	0.3	12	226.4
Adjacent	P.M.	Enter	2.9	5.8	1.8	12	226.4
Street	Between	Exit	2.9	5.4	1.9	12	226.4
Traffic	4 and 6	Total	5.7	11.1	3.7	12	226.4
Peak	A.M.	Enter	2.4	3.7	1.8	12	226.4
Hour		Exit	2.1	3.1	1.5	12	226.4
of		Total	4.5	6.8	3.3	12	226.4
Generator	P.M.	Enter	3.1	5.8	2.0	12	226.4
		Exit	3.0	5.9	1.9	12	226.4
		Total	6.1	11.7	3.9	12	226.4
SATURDAY V	EHICLE TRIP	ENDS	77.5	115.0	56.3	12	226.4
Peak		Enter	3.8	6.3	2.4	12	226.4
Hour of		Exit	3.6	5.3	2.3	12	226.4 🔿
Generator		Total	7.4	10.9	4.7	12	226.4
SUNDAY VER	HICLE TRIP E	NDS	26.4	87.7	5.3	12	226.4
Peak		Enter	1.5	6.2	0.4	12	226.4
Hour of		Exit	1.5	5.0	0.4	12	226.4
Generator	Generator Total		3.0	11.2	0.8	12	226.4
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent St	Adjacent Street A.M. Peak Hour		1.9	3.8	0.6	12	226.4 😇
Adjacent Si	Adjacent Street P.M. Peak Hour		9.4	10.8	8.2	12	226.4
Generator A	A.M. Peak Ho	ur	7.4	8.5	6.3	12	226.4
Generator 1	P.M. Peak Ho	ur	10.0	11.2	9.4	12	226.4

Average Trips per 1000 Square Feet GLFA for Virginia Shopping Centers Size: Regional, 500,000 and Over Square Feet

		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable	
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	35.9	44.8	27.6	7	825
Peak	A.M.	Enter	0.4	0.6	0.2	7	825
Hour	Between	Exit	0.2	0.4	0.1	7	825
of	7 and 9	Total	0.6	1.1	0.3	7	825
Adjacent	P.M.	Enter	1.5	2.0	1.1	7	825
Street	Between	Exit	1.5	2.0	1.1	7	825
Traffic	4 and 6	Total	3.0	4.0	2.3	7	825
Peak	A.M.	Enter	1.4	1.9	1.1	7	825
Hour		Exit	1.0	1.5	0.8	7	825
of		Total	2.5	3.2	1.9	7	825
Generator	P.M.	Enter	1.8	2.1	1.4	7	825
		Exit	1.6	2.1	1.2	7	825
		Total	3.3	4.1	2.5	7	825
SATURDAY V	EHICLE TRIP	ENDS	49.1	70.4	33.3	7	825
Peak		Enter	2.3	3.7	1.0	7	825
Hour of		Exit	2.4	3.2	1.6	7	825
Generator		Total	4.7	6.9	2.9	7	825
SUNDAY VEH	HICLE TRIP E	NDS .	12.6	21.8	4.1	7	825
Peak		Enter	0.8	1.7	0.2	7	825
Hour of		Exit	0.9	1.7	0.2	7	825
Generator	Generator Total		1.8	3.4	0.4	7	825
% WEEKDAY	TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent St	reet A.M. P	eak Hour	1.6	3.2	1.1	7	825
Adjacent Street P.M. Peak Hour		8.4	9.5	7.3	7	825	
Generator A	A.M. Peak Ho	ır	6.8	7.5	6.2	7	825
Generator I	R.M. Peak Ho	ur	9.2	9.7	8.9	7	825

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Table B-11

Average Trips per Dwelling Unit for Virginia Apartments

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	6.9	9.2	5.1	21	228 -
Peak	A.M.	Enter	0.1	0.3	0.1	20	231
Hour	Between	Exit	0.4	0.7	0.2	20	231
of	7 and 9	Total	0.5	0.9	0.3	21	228
Adjacent	P.M.	Enter	0.4	0.6	0.3	20	231
Street	Between	Exit	0.2	0.4	0.1	20	231
Traffic	4 and 6	Total	0.6	0.9	0.4	21	228
Peak	A.M.	Enter	0.1	0.3	0.1	20	231
Hour		Exit	0.4	0.7	0.2	20	231
of		Total	0.6	0.9	0.3	21	228
Generator	P.M.	Enter	0.4	0.6	0.3	20	231
		Exit	0.2	0.4	0.1	20	231
		Total	0.7	0.9	0.5	21	228
SATURDAY V	JEHICLE TRIP	ENDS	7.2	9.2	4.4	21	228
Peak		Enter	0.3	0.4	0.1	20	231
Hour of		Exit	0.3	0.4	0.2	20	231 \ominus
Generator		Total	0.6	0.8	0.3	21	228
SUNDAY VE	HICLE TRIP E	NDS	6.1	8.8	4.2	21	228
Peak		Enter	0.3	0.7	0.2	20	231
Hour of		Exit	0.3	0.5	0.1	20	231
Generator	Generator Total		0.6	1.2	0.3	21	228
% WEEKDAY	TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent S	treet A.M. P	eak Hour	7.6	10.4	4.1	21	228 🗇
Adjacent S	treet P.M. P	eak Hour	9.1	11.6	7.2	21	228
Generator	A.M. Peak Ho	ur	8.1	10.8	4.9	21	228
Generator	P.M. Peak Ho	ur	9.9	12.5	8.2	21	228

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Average Trips per Dwelling Unit for Virginia Single-Family Detached Housing

		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable	
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	10.0	13.5	6.6	28	186
Peak	A.M.	Enter	0.2	0.3	0.0	27	189
Hour	Between	Exit	0.5	0.8	0.3	27	189
of	7 and 9	Total	0.7	1.1	0.3	28	186
Adjacent	P.M.	Enter	0.6	0.9	C.4	27	189
Street	Between	Exit	0.3	0.5	0.2	27	189
Traffic	4 and 6	Total	0.9	1.4	0.7	28	186
Peak	A.M.	Enter	0.2	0.4	0.1	27	189
Hour		Exit	0.6	0.9	0.3	27	189
of		Total	0.7	1.2	0.5	28	186
Generator	P.M.	Enter	0.6	0.9	0.4	27	189
		Exit	0.3	0.5	0.2	27	189
	,	Total	1.0	1.4	0.7	28	186
SATURDAY V	EHICLE TRIP	ENDS	10.2	13.9	7.0	28	186
Peak		Enter	0.5	0.7	0.3	27	189
Hour of		Exit	0.4	0.7	0.3	27	189
Generator		Total	0.9	1.2	0.7	28	186
SUNDAY VEH	LICLE TRIP EN	VDS	8.6	12.3	5.4	28	186
Peak		Enter	0.4	0.9	0.2	27	189
Hour of		Exit	0.4	0.6	0.3	27	189
Generator Total		0.8	1.5	0.6	28	186	
% WEEKDAY TRIPS IN:		Average %	Maximun %	Minimum %		A CONTRACTOR AND A	
Adjacent Street A.M. Peak Hour		7.0	11.2	4.2	28	186	
Adjacent Street P.M. Peak Hour		9.2	12.7	7.0	28	186	
Generator A	.M. Peak Hou	.r	7.5	13.4	4.8	28	186
Generator I	.M. Peak Ho	JL	9.9	15.5	7.9	28	186

APPENDIX C

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Comprehensive Virginia Statistics Stratified by Land Use and Urban Area

Table C-1

Average Trips per 1000 Square Feet GLFA for Northern Virginia Shopping Centers Size: Regional, 500,000 and Over Square Feet

-			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independat Variable
AVERAGE WE	AVERAGE WEEKDAY VEHICLE TRIP ENDS			42.8	34.0	2	976.6
Peak	A.M.	Enter	0.4	0.4	0.3	2	976.6
Hour	Between	Exit	0.1	0.1	0.1	2	976.6
of	7 and 9	Total	0.5	0.5	0.5	2	976.6
Adjacent	P.M.	Enter	1.3	1.7	1.1	2	976.6
Street	Between	Exit	1.4	1.7	1.3	2	976.6
Traffic	4 and 6	Total	2.8	3.3	2.5	2	976.6
Peak	A.M.	Enter	1.5	1.9	1.3	2	976.6
Hour		Exit	1.0	1.4	0.8	2	976.6
of		Total	2.5	3.2	2.1	2	976.6
Generator	P.M.	Enter	1.9	2.1	1.9	2	976.6
		Exit	1.5	2.1	1.2	2	976.6
		Total	3.4	4.1	3.1	2	976.6
SATURDAY V	/EHICLE TRIP	ENDS	45.4	51.3	42.2	2	976.6
Peak		Enter	2.1	2.7	1.8	2	976.6
Hour of		Exit	2.2	2.6	2.1	2	976.6 🔿
Generator		Total	4.3	5.3	· 3.8	2	976.6
SUNDAY VE	HICLE TRIP E	NDS	21.2	21.8	20.0	2	976.6
Peak		Enter	1.6	1.7	1.5	2	976.6
Hour of		Exit	1.7	1.7	1.7	2	976.6
Generator	Generator Total		3.3	3.4	3.2	2	976.6
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %		
Adjacent S	treet A.M. P	eak Hour	1.3	1.5	1.1	2	976.6 🗔
Adjacent S	treet P.M. P	eak Hour	7.5	7.8	7.3	2	976.6
Generator	A.M. Peak Ho	ur	6.8	7.5	6.3	2	976.6
Generator	P.M. Peak Ho	ur	9.3	9.6	9.1	2	976.6

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Average Trips per 1000 Square Feet GLFA for Southeast Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximm Rate	Minimum Rate	Number of Studies	Average Size of Independeri Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	49.1	53.9	47.2	2	326.0
Peak	Peak A.M. Enter		0.4	0.7	0.3	2	326. 1
Hour	Between	Exit	0.2	0.3	0.2	2	326.0
of	7 and 9	Total	0.6	1.0	0.5	2	326.0
Adjacent	P.M.	Enter	2.0	2.4	1.9	2	326.0
Street	Between	Exit	2.0	2.5	1.9	2	326.0
Traffic	4 and 6	Total	4.1	4.9	3.8	2	326.0
Peak	A.M.	Enter	2.0	2.1	2.0	2	326.0
Hour		Exit	1.7	2.1	1.6	2	326.0
of		Total	3.7	4.2	3.5	2	326
Generator	P.M.	Enter	2.2	2.4	2.2	2	326.0
		Exit	2.2	2.7	2.1	2	326.0
		Total	4.5	5.1	4.2	2	326.0
SATURDAY V	EHICLE TRIP	ENDS	59.3	59.5	58.8	2	326.0
Peak		Enter	2.4	2.5	2.4	2	326.0
Hour of		Exit	2.7	2.8	2.5	2	326.0
Generator		Total	5.1	5.2	5.0	2	326.0
SUNDAY VEH	HICLE TRIP EN	ĪDS	13.0	20.5	10.2	2	326.0
Peak		Enter	0.8	1.4	0.6	2	326.0
Hour of		Exit	0.8	0.9	0.8	2	326.0
Generator	Generator Total		1.6	2.3	1.3	2	326.0
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Si	Adjacent Street A.M. Peak Hour		1.2	1.8	1.0	2	326.0
Adjacent St	Adjacent Street P.M. Peak Hour		8.4	9.2	8.0	2	326.0
Generator A.M. Peak Hour		7.5	7.7	7.5	2	326.0	
Generator 1	P.M. Peak Hou	11	9.1	9.5	9.0	2	326.0

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Table C-3

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Average Trips per 1000 Square Feet GLFA for Peninsula Shopping Centers Size: Regional, 500,000 and Over Square Feet

-			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independ Variable
AVERAGE W	EEKDAY VEHICI	E TRIP ENDS	29.4	31.1	27.6	2	813.9
Peak	A.M.	Enter	0.2	0.2	0.2	2	813.9
Hour	Between	Exit	0.1	0.1	0.1	2	813.9
of	7 and 9	Total	0.3	0.3	0.3	2	813.9
Adjacent	P.M.	Enter	1.3	1.4	1.2	2	813.9
Street	Between	Exit	1.2	1.3	1.1	2	813.9 🗘
Traffic	4 and 6	Total	2.5	2.7	2.3	2	813.9
Peak	A.M.	Enter	1.2	1.3	1.1	2	813.9
Hour		Exit	0.8	0.8	0.8	2	813.9
of		Total	2.0	2.1	1.9	2	813.9
Generator	P.M.	Enter	1.4	1.5	1.4	2	813.9
		Exit	1.3	1.4	1.2	2	813.9
		Total	2.7	2.8	2.5	2	813.9 🖨
SATURDAY	VEHICLE TRIP	ENDS	36.8	40.1	33.3	2	813.9
Peak		Enter	1.4	1.8	1.0	2	813.9
Hour of		Exit	1.7	1.9	1.6	2	813.9 🔾
Generator		Total	3.2	3.4	2.9	2	813.9
SUNDAY VE	HICLE TRIP EN	1DS	5.2	5.3	5.1	2	813.9
Peak		Enter	0.2	0.3	0.2	2	813.9
Hour of		Exit	0.3	0.3	0.2	2	813.9
Generator	Generator Total		0.5	0.6	0.4	2	813.9
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %		
Adjacent S	Adjacent Street A.M. Peak Hour		1.1	1.1	1.1	2	813.9 🗇
Adjacent S	Adjacent Street P.M. Peak Hour		8.6	8.7	8.4	2	813.9
Generator	A.M. Peak Hou	ır	6.9	7.0	6.8	2	813.9
Generator	P.M. Peak Hou	ır	9.2	9.2	9.2	2	813.9

Average Trips per 1000 Square Feet GLFA for Peninsuía Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	81.7	N/A	N/A	1	175.6
Peak	A.M.	Enter	1.6	N/A	N/A	l	175.6
Hour	Between	Exit	1.5	N/A	N/A	1	175.6
of	7 and 9	Total	3.1	N/A	N/A	1	175.6
Adjacent	P.M.	Enter	3.4	N/A	N/A	1	175.6
Street	Between	Exit	3.6	N/A	N/A	1	175.6
Traffic	4 and 6	Total	7.0	N/A	N/A	1	175.6
Peak	A.M.	Enter	2.6	N/A	N/A	1	175.6
Hour		Exit	2.9	N/A	N/A	1	175.6
of		Total	5.5	N/A	N/A	1	175.0
Generator	P.M.	Enter	4.0	N/A	N/A	1	175.6
		Exit	4.2	N/A	N/A	1	175.6
		Total	8.2	N/A	N/A	1	175.6
SATURDAY V	EHICLE TRIP	ENDS	83.1	N/A	N/A	1	175.6
Peak		Enter	3.6	N/A	N/A	1	175.6
Hour of		Exit	3.9	N/A	N/A	1	175.6
Generator		Total	7.5	N/A	N/A	1	175.6
SUNDAY VE	HCLE TRIP E	NDS	51.0	N/A	N/A	1	175.6
Peak		Enter	2.7	N/A	N/A	1	175.6
Hour of		Exit	2.5	N/A	N/A	1	175.6
Generator Total		5.2	N/A	N/A	1	175.6	
% WEEKDAY	TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Street A.M. Peak Hour		3.8	N/A	N/A	1	175.6	
Adjacent Street P.M. Peak Hour		8.6	N/A	N/A	1	175.6	
Generator	A.M. Peak Ho	ur	6.8	N/A	N/A	1	175.6
Generator	P.M. Peak Ho	ur	10.1	N/A	N/A	1	175.6

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Table C-5

Average Trips per 1000 Square Feet GLFA for Peninsula Shopping Centers Size: Neighborhood, Under 100,000 Square Feet

			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	116.6	N/A	N/A	1	66.0
Peak	A.M.	Enter	1.7	N/A	N/A	1	66.0
Hour	Between	Exit	1.6	N/A	N/A	1	66.0
of	7 and 9	Total	3.3	N/A	N/A	1	66.0
Adjacent	P.M.	Enter	5.1	N/A	N/A	1	66.0
Street	Between	Exit	5.5	N/A	N/A	1	66.0
Traffic	4 and 6	Total	10.6	N/A	N/A	1	66.0
Peak	A.M.	Enter	3.8	N/A	N/A	1	66.0
Hour		Exit	3.4	N/A	N/A	1	66.0
of		Total	7.2	N/A	N/A	. 1	66.0
Generator	P.M.	Enter	5.5	N/A	N/A	1	66.0
		Exit	5.7	N/A	N/A	1	66.0
		Total	11.3	N/A	N/A	1	66.0
SATURDAY V	EHICLE TRIP	ENDS	147.8	N/A	N/A	1	66.0
Peak		Enter	5.1	N/A	N/A	1	66.0
Hour of		Exit	5.2	N/A	N/A	1	66.0 [.] O
Generator		Total	10.4	N/A	N/A	1	66.0
SUNDAY VE	HICLE TRIP E	NDS	100.9	N/A	N/A	1	66.0
Peak		Enter	4.1	N/A	N/A	1	66.0
Hour of	Hour of Exit		4.1	N/A	N/A	1	66.0
Generator	Generator Total		8.2	N/A	N/A	1	66.0
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %		
Adjacent S	Adjacent Street A.M. Peak Hour		2.8	N/A	N/A	1	66.0 K
Adjacent S	treet P.M. P	eak Hour	9.1	N/A	N/A	1	66.0
Generator A	A.M. Peak Ho	ur	6.2	N/A	N/A	1	66.0
Generator 1	P.M. Peak Ho	ur	9.7	N/A	N/A	1	66.0

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Average Trips per 1000 Square Feet GLFA for Richmond Shopping Centers Size: Regional, 500,000 and Over Square Feet

			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	37.6	42.3	33.6	2	762.6
Peak	A.M.	Enter	0.6	0.6	0.5	2	762.6
Hour	Between	Exit	0.4	0.4	0.3	2	762.6
of	7 and 9	Total	0.9	1.1	0.8	2	762.6
Adjacent	P.M.	Enter	1.8	2.0	1.6	2	762.6
Street	Between	Exit	1.7	1.8	1.6	2	762.6
Traffic	4 and 6	Total	3.5	3.8	3.2	2.	762.6
Peak	A.M.	Enter	1.4	1.6	1.2	2	762.6
Hour		Exit	1.1	1.3	0.9	2	762.6
of		Total	2.5	3.0	2.1	2	762.6
Generator	P.M.	Enter	1.8	2.0	1.6	2	762.6
		Exit	1.7	1.9	1.6	2	762.6
		Total	3.5	3.9	3.2	2 •	762.6
SATURDAY V	EHICLE TRIP	ENDS	60.6	70.4	52.4	2	762.6
Peak		Enter	3.1	3.7	2.6	2	762.6
Hour of		Exit	3.1	3.2	3.0	2	762.6
Generator		Total	6.2	6.9	5.7	2	762.6
SUNDAY VEH	HCLE TRIP E	NDS	6.5	9.3	4.1	2	762.6
Peak		Enter	0.3	0.5	0.2	2	762.6
Hour of		Exit	0.5	0.9	0.2	2	762.6
Generator Total		0.9	1.4	0.4	2	752.6	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Street A.M. Peak Hour		2.5	3.2	1.8	2	762.6	
Adjacent Street P.M. Peak Hour		9.2	9.5	8.9	2	762.6	
Generator A	A.M. Peak Ho	ur	6.6	7.0	5.2	2	762.6
Generator I	P.M. Peak Ho	ur	9.4	9.7	9.1	2	762.6

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Average Trips per 1000 Square Feet GLFA for Richmond Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHIC	E TRIP ENDS	72.5	N/A	N/A	1	314.0
Peak	A.M.	Enter	1.0	N/A	N/A	1	314.0
Hour	Between	Exit	0.8	N/A	N/A	1	314.0
of	7 and 9	Total	1.7	N/A.	N/A	1	314.0
Adjacent	P.M.	Enter	3.7	N/A	N/A	1	314.0
Street	Between	Exit	3.6	N/A	N/A	1	314.0
Traffic	4 and 6	Total	7.4	N/A	N/A	1	314.0
Peak	A.M.	Enter	3.0	N/A	N/A	1	314.0
Hour		Exit	3.0	N/A	N/A	1	314.0
of		Total	6.0	· N/A	N/A	1	314.0
Generator	P.M.	Enter	3.7	N/A	N/A	1	314.0
		Exit	3.6	N/A	N/A	1	314.0
	·	Total	7.4	N/A	N/A	1	314.0
SATURDAY V	EHICLE TRIP	ENDS	91.9	N/A	N/A	1	314.0
Peak		Enter	4.9	N/A	N/A	1	314.0
Hour of		Exit	4.7	N/A	N/A	1	314.0 〇
Generator		Total	9.5	N/A	N/A	1	314.0
SUNDAY VER	HICLE TRIP E	NDS	23.1	N/A	N/A	1	314.0
Peak		Enter	1.3	N/A	N/A	1	314.0
Hour of	Hour of Exit		1.5	N/A	N/A	1	314.0
Generator Total		2.8	N/A	N/A	1	314.0	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Street A.M. Peak Hour		2.4	N/A	N/A	1	314.0 😳	
Adjacent St	Adjacent Street P.M. Peak Hour		10.2	N/A	N/A	1	314.0
Generator A	A.M. Peak Ho	ur	8.3	N/A	N/A	1	314.0
Generator I	P.M. Peak Ho	ur	10.2	N/A	N/A	1	314.0

Average Trips per 1000 Square Feet GLFA for Roanoke Shopping Centers Size: Regional, 500,000 and Over Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	44.8	N/A	N/A	1	669.0
Peak	A.M.	Enter	0.4	N/A	N/A	1	669.0
Hour	Between	Exit	0.3	N/A	N/A	1	669.0
of	7 and 9	Total	0.7	N/A	N/A	1	669.0
Adjacent	P.M.	Enter	2.0	N/A	N/A	1	669.0
Street	Between	Exit	2.0	N/A	N/A	1	669.0
Traffic	4 and 6	Total	4.0	N/A	N/A	1	669.0
Peak	A.M.	Enter	1.8	N/A	N/A	1	669.0
Hour		Exit	1.5	N/A	N/A	1	669.0
of		Total	3.2	N/A	N/A	1	669.0
Generator	P.M.	Enter	2.0	N/A	N/A	1	669.0
		Exit	2.0	N/A	N/A	1	669.0
		Total	4.0	N/A	N/A	1	669.0
SATURDAY V	EHICLE TRIP	ENDS	63.9	N/A	N/A	1	669.0
Peak		Enter	2.9	N/A	N/A	1	669.0
Hour of		Exit	3.2	N/A	N/A	1	669.0
Generator		Total	6.1	N/A	N/A	1	669.0
SUNDAY VER	HICLE TRIP E	NDS	19.2	N/A	N/A	1	669.0
Peak		Enter	1.1	N/A	N/A	1	669.0
Hour of Exit		Exit	1.1	N/A	N/A	1	669.0
Generator Total		2.3	N/A	N/A	1	669.0	
% WEEKDAY	TRIPS IN:	. 	Average %	Maximum %	Minimum %		
Adjacent Street A.M. Peak Hour		1.6	N/A	N/A	1	669.0	
Adjacent Street P.M. Peak Hour		8.8	N/A	N/A	1	669.0	
Generator A	A.M. Peak Ho	ur	7.2	N/A	N/A	1	669.0
Generator 1	P.M. Peak Ho	ur	8.9	N/A	N/A	1	669.0

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Average Trips per 1000 Square Feet GLFA for Roanoke Shopping Centers Size: Community, 100,000-499,999 Square Feet

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			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independ(i Variable
AVERAGE WE	EKDAY VEHIC	LE TRIP ENDS	78.9	N/A	N/A	1	164.7
Peak	A.M.	Enter	1.1	N/A	N/A	1	164.7
Hour	Between	Exit	1.1	N/A	N/A	1	164.7
of	7 and 9	Total	2.1	N/A	N/A	1	164.7
Adjacent	P.M.	Enter	4.4	N/A	N/A	1	164.7
Street	Between	Exit	4.1	N/A	N/A	1	164.7 0
Traffic	4 and 6	Total	8.5	N/A	N/A	1	164.7
Peak	A.M.	Enter	2.6	N/A	N/A	1	164.7
Hour	_	Exit	2.4	N/A	N/A	1	164.7
of		Total	5.0	N/A	N/A	1	164.7
Generator	P.M.	Enter	4.4	N/A	N/A	1	164.7
		Exit	4.1	N/A	N/A	1	164.7
		Total	8.5	N/A	N/A	1	164.7 🤤
SATURDAY V	EHICLE TRIP	ENDS	103.5	N/A	N/A	1	164.7
Peak	<u></u>	Enter	4.6	N/A	N/A	1	164.7
Hour of		Exit	4.9	N/A	N/A	1	164.8 🔿
Generator		Total	9.5	N/A	N/A	1	164.7
SUNDAY VER	HICLE TRIP E	NDS	45.3	N/A	N/A	1	164.7
Peak		Enter	2.4	N/A	N/A	1	164.7
Hour of	Hour of Exit		2.3	N/A	N/A	1	164.7
Generator Total		4.7	N/A	N/A	1	164.7	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		2.7	N/A	N/A	1	164.7 〇	
Adjacent St	Adjacent Street P.M. Peak Hour		10.8	N/A	N/A	1	164.7
Generator A	A.M. Peak Ho	ur	6.4	N/A	N/A	1	164.7
Generator I	P.M. Peak Ho	ur	10.8	N/A	N/A	1	164.7

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Average Trips per 1000 Square Feet GLFA for Tri-Cities Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independeri Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	62.2	104.9	44.2	2	192.1
Peak	A.M.	Enter	0.8	1.6	0.4	2	192
Hour	Between	Exit	0.5	1.2	0.3	2.	192.1
of	7 and 9	Total	1.3	2.8	0.7	2	192.1
Adjacent	P.M.	Enter	3.2	5.8	2.1	2	192.1
Street	Between	Exit	3.2	5.4	2.3	2	192.1
Traffic	4 and 6	Total	6.5	11.1	4.5	2	192.1
Peak	A.M.	Enter	2.5	3.7	2.0	2	192.1
Hour		Exit	2.2	3.1	1.8	2	192.1
of		Total	4.7	6.8	3.8	2	192.1
Generator	P.M.	Enter	3.3	5.8	2.3	2	192.1
		Exit	3.4	5.9	2.3	2	192.1
		Total	6.7	11.7	4.6	2	192.
SATURDAY V	EHICLE TRIP	ENDS	74.6	115.0	57.6	2	192.1
Peak		Enter	3.9	5.7	3.2	2	192.1
Hour of		Exit	3.7	5.3	3.1	2	192.1
Generator		Total	7.6	10.9	6.2	2	192.1
SUNDAY VEF	LICLE TRIP EN	NDS	22.6	51.0	10.6	2	192.1
Peak		Enter	1.2	2.6	0.6	2	192.1
Hour of		Exit	1.2	2.4	0.7	2	192.1
Generator	Generator Total		2.4	5.1	1.3	2	192.1
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		2.1	2.7	1.6	2	192.1	
Adjacent Street P.M. Peak Hour		10.4	10.6	10.1	2	192.1	
Generator A	A.M. Peak Ho	ur	7.5	8.5	6.5	2	192.1
Generator I	P.M. Peak Ho	ur	10.8	11.2	10.5	2	192.1

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Average Trips per 1000 Square Feet GLFA for Lynchburg Shopping Centers Size: Community, 100,000-499,999 Square Feet

	· · · · ·		Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independ Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	68.8	N/A	N/A	1	145.0
Peak	A.M.	Enter	0.5	N/A	N/A	1	145.0
Hour	Between	Exit	0.5	N/A	N/A	1	145.0
of	7 and 9	Total	1.0	N/A	N/A	1	145.0
Adjacent	P.M.	Enter	3.5	N/A	N/A	1	145.0
Street	Between	Exit	3.7	N/A	N/A	1	145.0
Traffic	4 and 6	Total	7.1	N/A	N/A	1	145.0
Peak	A.M.	Enter	2.5	N/A	N/A	1	145.0
Hour		Exit	2.2	N/A	N/A	1	145.0
of		Total	4.7	·· N/A	N/A	1	145.0
Generator	P.M.	Enter	3.7	N/A	N/A	1	145.0
-		Exit	3.8	N/A	N/A	1	145.0
		Total	7.5	N/A	N/A	1	145.0
SATURDAY V	ÆHICLE TRIP	ENDS	96.5	N/A	N/A	1	145.0
Peak		Enter	4.6	N/A	N/A	1	145.0
Hour of		Exit	4.5	N/A	N/A	1	145.0 🔿
Generator		Total	9.1	N/A	N/A	1	145.0
SUNDAY VE	HICLE TRIP E	NDS	49.2	N/A	N/A	1	145.0
Peak		Enter	2.7	N/A	N/A	1	145.0
Hour of	Hour of Exit		3.2	N/A	N/A	1	145.0
Generator	Generator Total		5.9	N/A	N/A	1	145.0
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent S	Adjacent Street A.M. Peak Hour		1.5	N/A	N/A	1	145.0 🔾
Adjacent S	Adjacent Street P.M. Peak Hour		10.4	N/A	N/A	1	145.0
Generator	A.M. Peak Ho	ur	6.8	N/A	N/A	1	145.0
Generator	P.M. Peak Ho	ur	10.9	N/A	N/A	1	145.0
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Average Trips per 1000 Square Feet GLFA for Lynchburg Shopping Centers Size: Neighborhood, Under 100,000 Square Feet

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	90.4	N/A	N/A	1	94.0
Péak	A.M.	Enter	1.1	N/A	N/A	1	94.1
Hour	Between	Exit	1.0	N/A	N/A	1	94.0
of	7 and 9	Total	2.2	N/A	N/A	1	94.0
Adjacent	P.M.	Enter	5.0	N/A	N/A	1	94.0
Street	Between	Exit	5.0	N/A	N/A	1	94.0
Traffic	4 and 6	Total	10.0	N/A	N/A	1	94.0
Peak	A.M.	Enter	3.8	N/A	N/A	1	94.0
Hour		Exit	3.6	N/A	N/A	1	94.0
of		Total	7.5	N/A	N/A	1	94.0
Generator	P.M.	Enter	5.6	N/A	N/A	1 .	94.0
		Exit	5.0	N/A	N/A	1	94.0
		Total	10.5	N/A	N/A	1	94.0
SATURDAY V	EHICLE TRIP	ENDS	116.9	N/A	N/A	1	94.0
Peak		Enter	6.1	N/A	N/A	1	94.0
Hour of		Exit	5.8	N/A	N/A	1	94.0
Generator		Total	11.9	N/A	N/A	1	94.0
SUNDAY VEH	HCLE TRIP E	NDS	55.8	N/A	N/A	1	94.0
Peak		Enter	3.8	N/A	N/A	1	94.0
Hour of	Hour of Exit		3.1	N/A	N/A	1	94.0
Generator Total		6.9	N/A	N/A	1	94.0	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		2.4	N/A	N/A	1	94.0	
Adjacent Street P.M. Peak Hour		11.0	N/A	N/A	1	94.0	
Generator A	A.M. Peak Ho	ur	8.3	N/A	N/A	1	94.0
Generator I	P.M. Peak Ho	ur	11.7	N/A	N/A	1	94.0

2632

Average Trips per 1000 Square Feet GLFA for Small Urban Area (Less than 50,000) Shopping Centers Size: Community, 100,000-499,999 Square Feet

			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independin Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	57.1	82.3	43.8	4	220.3
Peak	A.M.	Enter	0.5	0.7	0.2	4	220.3
Hour	Between	Exit	0.3	0.6	0.1	4	220.3
of	7 and 9	Total	0.8	1.2	0.3	4	220.3
Adjacent	P.M.	Enter	2.5	3.9	1.8	4	220.3
Street	Between	Exit	2.6	4.0	1.9	4 ·	220.3
Traffic	4 and 6	Total	5.1	7.9	3.7	4	220.3
Peak	A.M.	Enter	2.2	3.3	1.8	4	220.3
Hour		Exit	2.0	2.8	1.5	4	220.3
of		Total	4.1	6.1	3.3	4	220.3
Generator	P.M.	Enter	2.9	4.2	2.0	4	220.3
-		Exit	2.6	4.2	1.9	4	220.3
		Total	5.5	8.5	3.9	4	220.3
SATURDAY V	ÆHICLE TRIP	ENDS	78.1	105.6	56.3	4	220.3
Peak		Enter	4.2	6.3	2.4	4	220.3
Hour of		Exit	3.4	4.8	2.3	4	220.3.
Generator		Total	7.6	10.8	4.7	4	220.3
SUNDAY VE	HICLE TRIP E	NDS	27.0	87.7	5.3	4	220.3
Peak		Enter	1.7	6.2	0.4	4	220.3
Hour of Exit		1.6	5.0	0.4	4	220.3	
Generator Total		3.2	11.2	0.8	4	220.3	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		1.3	1.7	0.6	4	220.3	
Adjacent Street P.M. Peak Hour		8.9	9.6	8.2	4	220.3	
Generator A	A.M. Peak Ho	ur	7.2	8.1	6.3	4	220.3
Generator	P.M. Peak Ho	ur	9.6	10.3	8.9	4	220.3

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2633

Average Trips per Dwelling Unit for Northern Virginia Apartments

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICL	E TRIP ENDS	6.8	7.7	5.9	4	350
Peak	A.M.	Enter	0.1	0.1	0.1	4	350
Hour	Between	Exit	0.4	0.6	0.2	4	350
of	7 and 9	Total	0.5	0.7	0.3	4	350
Adjacent	P.M.	Enter	0.4	0.5	0.3	4	350
Street	Between	Exit	0.2	0.3	0.1	4	350
Traffic	4 and 6	Total	0.6	0.7	0.5	4	350
Peak	A.M.	Enter	0.1	0.1	0.1	4	350
Hour		Exit	0.5	0.6	0.3	4	350
of		Total	0.6	0.7	0.4	4	350
Generator	P.M.	Enter	0.4	0.5 .	0.4	4	350
		Exit	0.2	0.3	0.2	4	350
		Total	0.7	0.8	0.6	4	350
SATURDAY V	EHICLE TRIP	ENDS	7.2	8.5	6.1	4	350
Peak		Enter	0.3	0.4	0.3	4	350
Hour of		Exit	0.2	0.3	0.2	4	350
Generator		Total	0.6	0.7	0.5	4	350
SUNDAY VEH	HICLE TRIP EN	NDS	6.0	7.1	5.1	4	350
Peak		Enter	0.3	0.3	0.2	4	350
Hour of Exit		0.2	0.2	0.2	4	350	
Generator Total		0.5	0.6	0.5	4	350	
% WEEKDAY TRIPS IN:		Average %	Maximm %	Minimum %			
Adjacent Street A.M. Peak Hour		7.9	10.1	4.5	4	350	
Adjacent Street P.M. Peak Hour		8.6	9.6	7.7	4	350	
Generator A	A.M. Peak Ho	ur	8.6	10.3	6.3	4	350
Generator I	P.M. Peak Ho	ur	9.8	10.2	9.1	4	350

Average Trips per Dwelling Unit for Southeast Apartments

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			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independe- Variable
AVERAGE WE	EKDAY VEHIC	LE TRIP ENDS	6.9	8.3	5.9	2	200
Peak	A.M.	Enter	0.1	0.1	0.1	2	200
Hour	Between	Exit	0.2	0.2	0.2	2 _	200
of	7 and 9	Total	0.3	0.3	0.3	2	_200
Adjacent	P.M.	Enter	0.4	0.4	0.3	2	200
Street	Between	Exit	0.2	0.2	0.2	2	200
Traffic	4 and 6	Total	0.6	0.7	0.5	2	200
Peak	A.M.	Enter	0.1	0.1	0.1	2	200
Hour		Exit	0.2	0.3	0.2	2	200
of		Total	0.4	0.4	0.3	2	200
Generator	P.M.	Enter	0.4	0.4	0.4	2	200
		Exit	0.2	0.2	0.2	2	200
·	•	Total	0.6	0.7	0.6	2	200
SATURDAY V	EHICLE TRIP	ENDS	7.1	8.6	6.2	2	200
Peak		Enter	0.3	0.3	0.3	2	200
Hour of		Exit	0.3	.0.3	0.2	2	200 Þ
Generator		Total	0.6	0.6	0.5	2	200
SUNDAY VE	HICLE TRIP E	NDS	6.7	8.8	5.3	2	200
Peak		Enter	0.3	0.4	0.2	2	200
Hour of		Exit	0.3	0.3	0.3	2	200
Generator Total		0.6	0.7	0.5	2	200	
% WEEKDAY TRIPS IN:		Average %	Maximm %	Minimum %			
Adjacent Street A.M. Peak Hour		4.4	4.7	4.1	2	200	
Adjacent Street P.M. Peak Hour		8.3	8.4	8.2	2	200	
Generator A.M. Peak Hour		5.1	5.4	4.9	2	200	
Generator	P.M. Peak Ho	Jur	8.9	9.6	8.2	2	200

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Average Trips per Dwelling Unit for Peninsula Apartments

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	5.4	5.9	5.1	3	259
Peak	A.M.	Enter	0.1	0.1	0.1	3	259
Hour	Between	Exit	0.3	0.4	0.3	3	259
of	7 and 9	Total	0.4	0.5	0.4	3	259
Adjacent	P.M.	Enter	0.3	0.4	0.3	3	259
Street	Between	Exit	0.2	0.2	0.1	3	259
Traffic	4 and 6	Total	0.5	0.6	0.5	3	259
Peak	A.M.	Enter	0.1	0.2	0.1	3	259
Hour		Exit	0.3	0.4	0.3	3	259
of		Total	0.4	0.5	0.4	3	259
Generator	P.M.	Enter .	0.4	0.4	0.3	3	259
		Exit	0.2	0.3	0.1	3	259
	د د	Total	0.6	0.6	0.5	3	259
SATURDAY V	EHICLE TRIP	ENDS	5.6	7.0	4.4	3	259
Peak		Enter	0.2	0.3	0.1	3	259
Hour of		Exit	0.2	0.3	0.2	3	259
Generator		Total	0.5	0.6	0.3	3	259
SUNDAY VEF	IICLE TRIP E	NDS	5.0	5.6	4.2	3	259
Peak		Enter	0.2	0.3	0.2	3	259
Hour of		Exit	0.2	0.3	0.1	3	259
Generator Total		0.4	0.5	0.3	3	259	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		7.6	9.5	6.9	3	259	
Adjacent Street P.M. Peak Hour		9.9	10.7	9.1	3	259	
Generator A	A.M. Peak Ho	ur	7.9	9.5	7.2	3	259
Generator I	P.M. Peak Ho	ur	10.3	10.9	9.2	3	259

Table C-17

Average Trips per Dwelling Unit for Richmond Apartments

F			1			1	·····
			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independed Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	6.7	8.9	5.7	3	320
Peak	Peak A.M. Enter		0.1	0.2	0.1	3	320 ()
Hour	Between	Exit	0.5	0.7	0.4	3	320
of	7 and 9	Total	0.6	0.9	0.5	3	320
Adjacent	P.M.	Enter	0.5	0.6	0.3	3	320
Street	Between	Exit	0.2	0.3	0.1	3	320 C
Traffic	4 and 6	Total	0.7	0.9	0.4	3	320
Peak	A.M.	Enter	0.1	0.2	0.1	3	320
Hour		Exit	0.5	0.7	0.4	3	320
of		Total	0.7	·· 0.9	0.6	3	320
Generator	P.M.	Enter	0.5	0.6	0.4	3	320
		Exit	0.2	0.3	0.2	3	320
		Total	0.7	0.9	0.5	3	320
SATURDAY V	EHICLE TRIP	ENDS	7.3	9.1	6.1	3	320
Peak		Enter	0.3	0.4	0.3	3	320
Hour of		Exit	0.3	0.4	0.2	3	320 🔿
Generator		Total	0.6	0.7	0.5	3	320
SUNDAY VER	HICLE TRIP E	NDS	6.0	7.6	5.1	3	320
Peak		Enter	0.3	0.4	0.2	3	320
Hour of Exit		0,3	0.3	0.2	3	320	
Generator Total		0.5	0.7	0.5	3	320	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent St	reet A.M. P	eak Hour	9.5	9.8	9.0	3	320 🔿
Adjacent St	reet P.M. P	eak Hour	10.3	11.6	7.9	3	320
Generator A	A.M. Peak Ho	ur	9.9	10.3	9.6	3	320
Generator 1	P.M. Peak Ho	ur	10.7	11.6	9.5	3	320

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Average	Trips	per	Dwelling	Unit	for
	Roand	oke /	Apartments	5	

				Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independeri Variable
f	AVERAGE WE	EKDAY VEHICL	E TRIP ENDS	8.1	8.6	7.3	2	168
	Peak	A.M.	Enter	0.2	0.2	0.1	2	168
	Hour	Between	Exit	0.4	0.4	0.4	2	168
	of	7 and 9	Total	0.5	0.6	0.5	2	168
	Adjacent	P.M.	Enter	0.4	0.5	0.4	2	168
	Street	Between	Exit	0.3	0.3	0.3	2	168
	Traffic	4 and 6	Total	0.7	0.7	0.7	2	168
ſ	Peak	A.M.	Enter	0.2	0.2	0.1	2	168
	Hour		Exit	0.4	0.4	0.4	2	168
	of		Total	0.5	0.6	0.5	2	168
	Generator	P.M.	Enter	0.4	0.5	0.4	2	168
			Exit	0.3	0.3	0.3	2	168
•			Total	0.7	0.7	0.7	2	168
ľ	SATURDAY V	EHICLE TRIP	ENDS	8.3	9.2	6.8	2	168
	Peak		Enter	0.4	0.4	0.3	2	168
)	Hour of		Exit	0.2	0.3	0.2	2	168
	Generator		Total	0.6	· 0 .7	0.5	2	168
ſ	SUNDAY VEI	HICLE TRIP EN	NDS	7.4	8.2	6.1	2	168
ſ	Peak		Enter	0.3	0.4	0.2	2	168
1	Hour of		Exit	0.3	0.3	0.3	2	168
	Generator Total		0.6	0.6	0.5	. 2	168	
F	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
5	Adjacent Street A.M. Peak Hour		6.7	7.2	6.4	2	168	
	Adjacent S	treet P.M. Pe	eak Hour	8.8	9.7	8.3	2	168
	Generator	A.M. Peak Hou	IT	6.7	7.2	6.4	2	168
	Generator	P.M. Peak Hor	JT	8.9	9.7	8.5	2	168

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Table C-19

Average Trips per Dwelling Unit for Tri-Cities Apartments

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WE	EEKDAY VEHIC	LE TRIP ENDS	6.7	N/A	N/A	1	114
Peak	A.M.	Enter	0.1	N/A	N/A	1	114 ()
Hour	Between	Exit	0.6	N/A	N/A	1	114
of	7 and 9	Total	0.6	N/A	N/A	1	114
Adjacent	P.M.	Enter	0.5	N/A	N/A	1	114
Street	Between	Exit	0.2	N/A	N/A	1	114
Traffic	4 and 6	Total	0.7	N/A	N/A	1	114
Peak	A.M.	Enter	0.1	N/A	N/A	1	114
Hour		Exit	0.6	N/A	N/A	1	114
of		Total	0.6	N/A	N/A	1	114
Generator	P.M	Enter	0.5	N/A	N/A	1	114
		Exit	0.3	N/A	N/A	1	114
		Total	0.8	N/A	N/A	1	114
SATURDAY V	EHICLE TRIP	ENDS	7.5	N/A	N/A	1	114
Peak		Enter	0.4	N/A	N/A	1	114
Hour of		Exit	0.4	N/A	N/A	1	114 🔿
Generator		Total	0.8	N/A	N/A	1	114
SUNDAY VER	HICLE TRIP E	NDS	5.5	N/A	N/A	1	114
Peak		Enter	0.4	N/A	N/A	1	114
Hour of	Hour of Exit		0.5	N/A	N/A	1	114
Generator Total		0.9	N/A	N/A	1	114	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent St	Adjacent Street A.M. Peak Hour		9.5	N/A	N/A	1	114 0
Adjacent Street P.M. Peak Hour		10.6	N/A	N/A	1	114	
Adjacent St	reet P.M. Po	eak hour					1
Adjacent St Generator A	<u>reet P.M. Po</u> A.M. Peak Hou	eak hour ur	9.5	N/A	N/A	1	114

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Average Trips per Dwelling Unit for Lynchburg Apartments

			Average Trip Rate	Maximm Rate	Minimm Rate	Number of Studies	Average Size of Independeri Variable
AVERAGE W	EEKDAY VEHIC	LE TRIP ENDS	8.6	9.2	7.8	2	152
Peak	A.M.	Enter	0.2	0.2	0.2	2	152
Hour	Between	Exit	0.5	0.6	0.4	2	152
of	7 and 9	Total	0.7	0.8	0.6	2	152
Adjacent	P.M.	Enter	0.5	0.5	0.5	2	152
Street	Between	Exit	0.3	0.3	0.3	2	152
Traffic	4 and 6	Total	0.8	0.8	0.8	2	152
Peak	A.M.	Enter	0.3	0.3	0.2	2	152
Hour		Exit	0.5	0.6	0.4	2	152
of		Total	0.8	0.8	0.7	2	152
Generator	P.M.	Enter	0.5	0.6	0.5	2	152
		Exit	0.4	0.4	0.3	2	152
		Total	0.9	0.9	0.9	2	152
SATURDAY	VEHICLE TRIP	ENDS	8.7	9.2	8.0	2	152
Peak		Enter	0.3	0.4	0.3	2	152
Hour of		Exit	0.4	0.4	0.4	2	152
Generator	•	Total	0.7	0.8	0.7	2	152
SUNDAY VE	HICLE TRIP E	NDS	7.7	8.2	7.0	2	152
Peak		Enter	0.6	0.7	0.4	2	152
Hour of	Hour of Exit		0.4	0.4	0.3	2	152
Generator Total		1.0	1.2	0.7	2	152	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		8.0	10.4	6.5	2	152	
Adjacent S	Adjacent Street P.M. Peak Hour				0.0		1.50
Adjacent S	Street P.M. P	eak Hour	9.1	10.7	8.2	2	152
Adjacent S Adjacent S Generator	Street P.M. P A.M. Peak Ho	'eak Hour	9.1 9.0	10.7	8.2	2	152

Average Trips per Dwelling Unit for Small Urban Area (Less than 50,000) Apartments

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WE	AVERAGE WEEKDAY VEHICLE TRIP ENDS			9.2	7.0	4	124
Peak	A.M.	Enter	0.2	0.3	0.1	3	112
Hour	Between	Exit	0.3	0.4	0.3	3	112
of	7 and 9	Total	0.4	0.7	0.3	4	124
Adjacent	P.M.	Enter	0.4	0.4	0.3	3	112
Street	Between	Exit	0.3	0.4	0.3	3	112
Traffic	4 and 6	Total	0.6	0.8	0.5	4	124
Peak	A.M.	Enter	0.2	0.3	0.1	3	112
Hour		Exit	0.4	0.4	0.3	3	112
of		Total	0.5	0.7	0.4	. 4	124
Generator	P.M.	Enter	•0.4	0.4	0.4	3	112
		Exit	0.3	0.4	0.3	3	112
		Total	0.7	0.8	0.6	4	124
SATURDAY V	EHICLE TRIP	ENDS	7.7	8.1	6.9	4	124
Peak		Enter	0.4	0.4	0.3	3	112
Hour of		Exit	0.3	0.4	0.2	3	112 O
Generator		Total	0.7	0.7	0.6	4	124
SUNDAY VER	HICLE TRIP EN	NDS	5.9	6.4	5.5	4	124
Peak		Enter	0.3	0.3	0.3	3	112
Hour of	Hour of Exit		0.3	0.3	0.2	3	112
Generator Total		0.5	0.6	0.5	4	124	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Street A.M. Peak Hour		5.8	7.3	4.9	4	124 🗢	
Adjacent St	Adjacent Street P.M. Peak Hour		8.2	8.9	7.2	4	124
Generator A	A.M. Peak Ho	ur	6.2	5.3	7.3	4	124
Generator I	P.M. Peak Ho	ur	9.0	9.5	8.5	. 4	124

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Average Trips per Dwelling Unit for Northern Virginia Single-Family Detached Housing

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independeri Variable
AVERAGE WE	EKDAY VEHICL	E TRIP ENDS	10.2	11.0	7.2	6	263
Peak	A.M.	Enter	0.1	0.2	0.0	6	263
Hour	Between	Exit	0.5	0.6	0.3	6	263
of	7 and 9	Total	0.6	0.8	0.3	6	263
Adjacent	P.M.	Enter	0.6	0.7	0.4	6	263
Street	Between	Exit	0.3	0.5	0.2	6	263
Traffic	4 and 6	Total	0.9	1.1	0.7	6	263
Peak	A.M.	Enter	0.1	0.2	0.1	6	263
Hour		Exit	0.5	0.7	0.3	6	263
of		Total	0.6	0.9	0.5	6	263
Generator	P.M.	Enter	0.6	0.7	0.4	6	263
		Exit	0.4	0.5	0.3	6	263
		Total.	1.0	1.2	0.7	6	263
SATURDAY V	EHICLE TRIP	ENDS	10.7	13.8	7.1	6	263
Peak		Enter	0.5	0.5	0.4	6	263
Hour of		Exit	0.4	0.6	0.3	6	263
Generator		Total	0.9	1.1	0.7	6	263
SUNDAY VER	HICLE TRIP E	NDS	9.2	11.5	6.3	6	263
Peak		Enter	0.4	0.7	0.2	6	263
Hour of	Hour of Exit		0.4	0.5	0.3	6	263
Generator Total		0.8	1.2	0.6	6	263	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %			
Adjacent Si	Adjacent Street A.M. Peak Hour		5.9	7.8	4.7	6	263
Adjacent S	Adjacent Street P.M. Peak Hour		8.9	10.4	7.0	6	263
Generator	A.M. Peak Ho	ur	6.3	8.7	4.8	6	263
Generator	P.M. Peak Ho	ur	9.7	10.7	8.8	6	263



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Average Trips Per Dwelling Unit for Southeast Single-Family Detached Housing

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independer Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	10.3	11.0	9.1	4	212
Peak	A.M. Enter		0.1	0.1	0.1	4	212 ()
Hour	Between	Exit	0.4	0.4	0.3	4	212
of	7 and 9	Total	0.5	0.5	0.4	4	212
Adjacent	P.M.	Enter	0.6	0.7	0.4	4	212
Street	Between	Exit	0.3	0.4	0.2	4	212
Traffic	4 and 6	Total	0.9	1.0	0.7	4	212
Peak	A.M	Enter	0.1	0.2	0.1	4	212
Hour		Exit	0.4	0.5	0.4	4	212
of		Total	0.5	0.6	0.5	4	212
Generator	P.M.	Enter	0.6	0.7	0.5	4	212
		Exit	0.3	0.4	0.3	4	212
		Total	0.9	1.1	0.8	4	212
SATURDAY V	EHICLE TRIP	ENDS	10.0	10.7	9.2	4	212
Peak		Enter	0.5	0.6	0.3	4	212
Hour of		Exit	0.4	0.5	0.3	4	212 🔾
Generator		Total	0.8	0.9	0.8	4	212
SUNDAY VER	HICLE TRIP E	NDS	9.1	9.8	7.2	4	212
Peak		Enter	0.4	0.6	0.3	4	212
Hour of Exit		0.4	0.4	0.3	4	212	
Generator Total		0.8	0.9	0.7	4	212	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		4.7	5.0	4.2	4	212 😳	
Adjacent Street P.M. Peak Hour		8.5	9.5	7.2	4	212	
Generator	A.M. Peak Ho	ur	5.3	6.2	5.0	4	212
Generator :	P.M. Peak Ho	ur	9.0	9.9	7.9	4	212

Average Trips per Dwelling Unit for Peninsula Single-Family Detached Housing

		Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable	
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	8.7	12.2	6.8	4	189
Peak	A.M.	Enter	0.1	0.3	0.1	4	189
Hour	Between	Exit	0.6	0.8	0.5	4	189
of	7 and 9	Total	0.7	1.1	0.6	4	189
Adjacent	P.M.	Enter	0.6	0.7	0.6	4	189
Street	Between	Exit	0.3	0.4	0.2	4	189
Traffic	4 and 6	Total	0.9	1.1	0.8	4	189
Peak	A.M.	Enter	0.2	0.3	0.1	4	189
Hour		Exit	0.6	0.8	0.3	4	189
of		Total	0.8	1.1	0.6	4	189
Generator	P.M.	Enter	0.6	0.8	0.6	4 ·	189
		Exit	0.3	0.4	. 0.2	4	189
	,	Total	0.9	1.1	0.8	4	189
SATURDAY V	EHICLE TRIP	ENDS	9.7	13.9	8.6	4	189
Peak		Enter	0.5	0.6	0.4	4	189
Hour of		Exit	0.4	0.7	0.3	4	189
Generator		Total	0.9	1.2	0.8	4	189
SUNDAY VEH	HICLE TRIP EN	NDS	7.2	9.8	6.2	4	189
Peak		Enter	0.4	0.5	0.4	4	189
Hour of		Exit	0.3	0.4	0.3	4	189
Generator Total		0.8	0.9	0.7	4	189	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %		
Adjacent Street A.M. Peak Hour		8.6	10.2	5.4	4	189	
Adjacent Street P.M. Peak Hour		10.2	12.3	8.6	4	189	
Generator A	A.M. Peak Ho	r	8.6	10.2	5.7	4	189
Generator I	P.M. Peak Hor	ur	10.4	12.3	8.9	4	189

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Average Trips per Dwelling Unit for Richmond Single-Family Detached Housing

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			Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independent Variable
AVERAGE WE	EKDAY VEHIC	LE TRIP ENDS	8.4	9.7	6.6	3	138
Peak	A.M.	Enter	0.1	0.1	0.1	3	_ 138 _ C
Hour	Between	Exit	0.6	0.8	0.6	3	138
of	7 and 9	Total	0.7	0.9	0.7	3	138
Adjacent	P.M.	Enter	0.7	0.7	0.6	3	138
Street	Between	Exit	0.3	0.4	0.2	3	138
Traffic	4 and 6	Total	1.0	1.1	0.8	3	138
Peak	A.M.	Enter	0.1	0.1	0.1	3	138
Hour		Exit	0.6	0.8	0.6	3	138
of		Total	0.8	0.9	0.7	3	138
Generator	P.M.	Enter	0.7	0.7	0.7	3	138
		Exit	0.3	0.4	0.2	3	138
		Total	1.0	1.1	0.9	3	138
SATURDAY V	EHICLE TRIP	ENDS	9.3	10.6	7.0	3	138
Peak	<u></u>	Enter	0.5	0.5	0.4	3 .	138
Hour of		Exit	0.4	0.5	0.3	3	138 ⊖
Generator		Total	0.8	1.0	0.7	3	138
SUNDAY VEH	HCLE TRIP E	NDS	7.2	9.3	5.7	3	138
Peak		Enter	0.4	0.7	0.3	3	138 🕥
Hour of	Hour of Exit		0.3	0.4	0.3	3	138
Generator Total		0.8	1.1	0.6	3	138	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		8.8	10.1	7.4	3	138	
Adjacent Street P.M. Peak Hour		11.3	12.7	10.6	3	138	
Generator A	A.M. Peak Ho	ur	9.0	10.1	7.5	3	138
Generator I	P.M. Peak Ho	ur	12.0	15.5	10.6	3	138

Average Trips per Dwelling Unit for Roanoke Single-Family Detached Housing

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			Average Trip Rate	Maximum Rate	Minimm Rate	Number oī Studies	Average Size of Independen Variable
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	10.4	13.5	7.5	2	98
Peak	A.M.	Enter	0.3	0.4	0.1	2	98
Hour	Between	Exit	0.7	0.8	0.7	2	98
of	7 and 9	Total	1.0	1.1	0.8	2	98
Adjacent	P.M.	Enter	0.7	0.9	0.6	2	98
Street	Between	Exit	0.4	0.5	0.2	· 2	98
Traffic	4 and 6	Total	1.1	1.4	0.8	2	98
Peak	A.M.	Enter	0.3	0.4	0.1	2	98
Hour		Exit	0.9	0.9	0.9	2	98
of		Total	1.2	1.3	1.0	2	98
Generator	P.M.	Enter	0.8	0.9 ·	0.7	2	98
		Exit	0.4	0.5	0.3	2	98
	•	Total	1.2	1.4	1.0	2	98
SATURDAY V	EHICLE TRIP	ENDS	10.5	13.9	7.3	2	98
Peak		Enter	0.5	0.7	0.3	2	98
Hour of		Exit	0.5	0.6	0.4	2	98
Generator		Total	1.0	1.2	0.7	2	98
SUNDAY VEH	HICLE TRIP E	NDS	8.7	12.3	5.4	2	98
Peak		Enter	0.6	0.9	0.3	2	98
Hour of Exit		0.4	0.6	0.3	2	98	
Generator Total		1.0	1.5	0.6	2	98	
% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimum %			
Adjacent Street A.M. Peak Hour		9.5	11.2	8.5	2	98	
Adjacent Street P.M. Peak Hour		10.4	10.8	10.2	2	98	
Generator A	A.M. Peak Ho	ur	11.2	13.4	9.9	2	98
Generator 1	P.M. Peak Ho	ur	11.5	13.0	10.6	2	98

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Average Trips per Dwelling Unit for Tri-Cities Single-Family Detached Housing

			Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independent Variable
AVERAGE W	EEKDAY VEHIC	LE TRIP ENDS	10.2	10.9	8.4	2	210
Peak	A.M.	Enter	0.3	0.3	0.1	2	_ 210 ()
Hour	Between	Exit	0.6	0.7	0.6	2	210
of	7 and 9	Total	0.9	0.9	0.8	2 -	210
Adjacent	P.M.	Enter	0.6	0.6	0.6	2	210
Street	Between	Exit	0.4	0.4	0.2	2	210 CI
Traffic	4 and 6	Total	1.0	1.0	0.8	2	210
Peak	A.M.	Enter	0.3	0.3	0.1	2	210
Hour	••• · · · · · · · · · · · · · · · · · ·	Exit	0.6	0.7	0.6	2	210
of	~	Total	0.9	0.9	0.8	2	210
Generator	P.M.	Enter	0.6	0.7	0.6	2	210
		Exit	0.4	0.4	0.2	2	210
		Total	1.0	1.1	0.8	2	210
SATURDAY	VEHICLE TRIP	ENDS	10.3	11.3	7.7	2	210
Peak		Enter	0.5	0.5	0.5	2	210
Hour of		Exit	0.4	0.4	0.3	2	210 ⊖
Generator		Total	0.9	0.9	0.8	2	210
SUNDAY VE	HICLE TRIP E	NDS	8.5	9.2	6.3	2	210
Peak		Enter	0.5	0.5	0.3	2	210
Hour of	Hour of Exit		0.4	0.4	0.3	2	210
Generator Total		0.8	0.9	0.6	2	210	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Street A.M. Peak Hour		8.7	9.1	8.6	2	210 🙂	
Adjacent Street P.M. Peak Hour		9.5	9.9	9.4	2	210	
Generator	A.M. Peak Hor	r	8.7	9.1	8.6	2	210
Generator	P.M. Peak Hou	ır	10.0	10.0	10.0	2	210

Average Trips per Dwelling Unit for Lynchburg Single-Family Detached Housing

		Average Trip Rate	Maximum Rate	Minimm Rate	Number of Studies	Average Size of Independer Variable	
AVERAGE WE	EKDAY VEHICI	E TRIP ENDS	10.6	11.1	9.7	2	142
Peak	A.M.	Enter	0.2	0.2	0.1	2	142
Hour	Between	Exit	0.6	0.7	0.6	2	142
of	7 and 9	Total	0.8	0.8	0.8	2	142
Adjacent	P.M.	Enter	0.6	0.7	0.6	2	142
Street	Between	Exit	0.3	0.4	0.3	2	142
Traffic	4 and 6	Total	1.0	1.0	1.0	2	142
Peak	A.M.	Enter	0.2	0.3	0.2	2	142
Hour		Exit	0.6	0.7	0.6	2	142
of .	-	Total	0.9	0.9	0.9	2	142
Generator	P.M.	Enter .	0.7	0.7	0.7	2	142
		Exit	0.4	0.4	0.3	2	142
		Total	1.0	1.1	1.0	2	142
SATURDAY V	EHICLE TRIP	ENDS	10.3	11.8	8.2	2	142
Peak		Enter	0.5	0.6	0.4	2.	142
Hour of		Exit	0.4	0.5	0.3	2	142
Generator		Total	0.9	1.0	0.7	2	142
SUNDAY VER	HICLE TRIP E	NDS	8.3	9.0	7.3	2	142
Peak		Enter	0.6	0.7	0.5	2	142
Hour of	Hour of Exit		0.4	0.4	0.4	2	142
Generator Total		1.0	1.0	1.0	2	142	
% WEEKDAY	% WEEKDAY TRIPS IN:		Average %	Maximum %	Minimm %		
Adjacent Street A.M. Peak Hour		7.8	8.3	7.5	2	142	
Adjacent Street P.M. Peak Hour		9.4	10.3	8.8	2	142	
Generator	A.M. Peak Ho	ur	8.3	9.3	7.6	2	142
Generator P.M. Peak Hour		9.9	10.3	9.5	2	142	

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Average Trips per Dwelling Unit for Small Urban Area (Less than 50,000) Single-Family Detached Housing

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-	· · · · ·	антан (такатан (такат	Average Trip Rate	Maximum Rate	Minimum Rate	Number of Studies	Average Size of Independia Variable
AVERAGE WE	EKDAY VEHICI	È TRIP ENDS	10.8	12.2	9.4	5	141
Peak	A.M.	Enter	0.2	0.3	0.1	4	152
Hour	Between	Exit	0.6	0.8	0.5	4	152
of	7 and 9	Total	0.8	1.1	0.6	5	141
Adjacent	P.M.	Enter	0.6	0.8	0.4	4	152
Street	Between	Exit	0.3	0.5	0.3	4	152
Traffic	4 and 6	Total	0.9	1.2	0.8	5	141
Peak	A.M.	Enter	0.3	0.3	0.1	. 4	152
Hour	** • •	Exit	0.7	0.8	0.5	4	152
of		Total	1.0	1.1	0.7	5	141
Generator	P.M.	Enter	0.6	0.8	0.5	4	152
		Exit	0.4	0.5	0.3	4	152
		Total	1.0	1.3	0.9	5	141.
SATURDAY V	EHICLE TRIP	ENDS	10.5	12.1	9.8	5	141
Peak		Enter	0.4	0.6	0.4	4	152
Hour of		Exit	0.4	0.5	0.4	4	152 🕂
Generator		Total	0.9	1.1	0.8	5	141
SUNDAY VER	HICLE TRIP E	NDS	8.7	10.4	7.7	5	141
Peak		Enter	0.4	0.5	0.3	4	152
Hour of Exit		Exit	0.4	0.5	0.3	4	152
Generator Total		0.8	1.0	0.7	5	141	
% WEEKDAY TRIPS IN:		Average %	Maximm %	Minimum %			
Adjacent Street A.M. Peak Hour		7.5	8.9	. 6.2	5	141 🖨	
Adjacent St	reet P.M. P	eak Hour	8.6	10.1	7.0	5	141
Generator A	A.M. Peak Ho	ur	8.8	11.1	6.4	5	141
Generator I	P.M. Peak Ho	ur	9.6	10.5	8.2	5	141