Interim Report

-- OPTIMIZING TRAFFIC COUNT PROGRAM --

A Methodology for Estimating AADT Volumes From
Short-Duration Counts

by

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(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

Estimates of annual average daily traffic (AADT) volumes are
important in the planning and operations of state highway departments.
These estimates are used in the planning of new construction and improve-
ments of existing facilities, and, in some cases, in the allocation of
maintenance funds. It is, therefore, important that any method used in
obtaining the estimates provide data of sufficient accuracy for the
intended use. This importance of having reliable and current data on
traffic volumes at hand is generally recognized, and over the years data
collection programs have tended to expand. This expansion has led to
huge amounts of money being spent annually for the collection and
analysis of traffic data. Renewed efforts are, however, now being made
to reduce the annual expenditure on traffic counts while at the same
time maintaining the desired level of accuracy.

A study is, therefore, being carried out by the Council to develop
an optimal counting program for the state. This interim report presents
the results of that portion of the study in which the feasibility of
estimating AADT volumes from short counts was established. The proce-
dure was first to use 1980 data for 16 continuous count stations to
determine periods that are stable throughout the year for different
short counts. It was found that stable periods for short counts oc-
curred mainly on Mondays, Tuesdays, and Wednesdays, and expansion
factors were then developed for short counts of different durations and
different starting times for these days. The expansion factors were
then used to estimate 1981 AADT's from short counts extracted from data
obtained in 1981 continuous counts. The results indicate that relative
errors of less than 10% were obtained for AADT's estimated from counts
of 6-, 8-, 10-, and 12-hour durations on Mondays, Tuesdays, and Wednes-
days. The results for Tuesdays and Wednesdays tended to be more accu-
rate than those for Mondays, and counts taken between February and
November tended to give more accurate results than those taken in
January and December.

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INTRODUCTION

Data obtained from traffic counts are used in formulating decisions
that affect federal, state, and local highway projects. In particular,
existing and projected traffic volumes and vehicle miles traveled are
used in decisions on the allocation of funds for the repair, resurfac-
ing, and reconstruction of highways. Traffic count data are also
important to highway safety personnel, as they are frequently used in
conjunction with accident statistics to produce traffic accident rates.
These rates are important indications of accident probabilities and are
frequently used to identify hazardous locations. It is, therefore,
imperative that the counts be accurate indications of the traffic
volumes and vehicle miles of travel that they are taken to represent.

The present count system for interstate, arterial, and primary
roads of the state of Virginia consists of the following:

1. Manual counts conducted by observers using hand counters to
    record hourly volume, vehicle classification, and directional
    traffic data during 12-hour periods. Under this program,
    counts are made at 1,345 stations; 211 of them on interstate
    roads and 1,134 on primary roads. Nine counts a year are
    carried out at 80 stations (key counts), four counts a year at
    1,023 stations (seasonal counts), and two counts a year at 242
    stations (coverage counts).

    The Department of Highways and Transportation is, how-
    ever, initiating a program that eventually will change the
    manual system of collection to a mechanical system at all
    sites.

2. Continuous traffic volumes taken with automatic recording
    equipment. Traffic volumes in 15-minute intervals at 16
    stations are printed on paper tapes that are retrieved weekly.
    There are plans, however, for increasing the number of perma-
    nent count stations to 59.

Studies carried out by the Virginia Highway and Transportation Research Council have revealed several deficiencies in the above program, including the high cost, which have resulted in a lack of confidence in the efficiency of the program and the accuracy of the published data.(1,2)

The Council, therefore, is developing an optimal counting program for the state that will produce results within the required levels of accuracy, and that can be implemented at an acceptable cost. The first task in this effort has been to examine the feasibility of using short counts for estimating average annual daily traffic (AADT) volumes, as such a capability will provide benefits in cost and convenience. In this case, short counts are counts taken continuously for less than 24 hours at a given station. This interim report documents the results of this first part of the study in terms of the accuracy obtained with short counts when they are used to estimate AADT's and the variation of this accuracy with count parameters such as time of day and day of week.

PURPOSE AND OBJECTIVES

The primary purpose of this portion of the study was to determine the feasibility of using short counts for estimating AADT's within ±10% of the true volumes.

The objectives were to determine --

    1. suitable times in the year to make short counts,

    2. suitable day or days in the week for making them,

    3. suitable periods of the day,

    4. the optimum duration for short counts, and

    5. suitable expansion factors for use with them.

ACCURACY OF AADT's ESTIMATED FROM SHORT COUNTS

The techniques of estimation generally require the use of sample data to obtain an estimator, which in turn is used to estimate an unknown parameter of the population. The overall accuracy of the estimated parameter is, therefore, dependent upon the accuracy of the estimator. Thus, the accuracy of annual flows estimated from short counts is dependent upon the accuracy of the short counts; and it

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follows that in the procedure under discussion estimates of AADT's should be made from only those short counts that are accurate enough to provide the required level of accuracy. In this study the accuracy of the estimator (short count) for any given day and time of count was determined in terms of its coefficient of variation (C) given by

$$C = \sqrt{\frac{\sum\limits_{i=1}^{n_d} \left((V_{idj} - \bar{V}_d)^2 \right)}{n_d - 1}} \Bigg/ \bar{V}_d, \tag{1}$$

where

V_{idj} = ith volume for count of duration d taken at a specific site on a specific day j and started at a specific time,

V_d = mean of V's $_{idj}$, and

n_d = number of counts for count duration, d, taken at a specific site on a specific day and started at a specific time.

If the average annual daily traffic is estimated directly from the short count without applying correction factors, the error associated with this estimate is given as

$$\text{Error (\%)} \quad (\rho) = \frac{(V_{idj}) \ (24)/d - \text{AADT}}{\text{AADT}} (100), \tag{2}$$

where

AADT = true AADT at the site the short counts are taken, and

d = duration of count j.

Values of p are usually very high, but they can be used to determine appropriate expansion factors that can be applied to short counts to improve the accuracy of the estimates.

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ESTIMATING ANNUAL FLOWS FROM SHORT COUNTS

One of two basic methods is generally used in estimating AADT's from short counts. One method, usually referred to as the indirect method, consists of two parts: the 24-hour flow is first estimated from the short count and then the AADT is projected from the estimated 24-hour flow. In the second method, usually referred to as the direct method, the AADT is obtained directly from the short count volume These methods are discussed below.

Indirect Method

The first step in the indirect method is to develop suitable expansion factors that can be used to multiply the short count volume to obtain an estimated 24-hour count. These factors are dependent on the type of road, the day of the count, the duration of the count, and the time the count is taken. A basic model for such a factor is

$$E_{sjd} = E' + \beta_{sjd}, \tag{3}$$

where

$$E_{sjd} = X_{sj} / P_{sjd} (24),$$

E_{sjd} = short count to 24-hour flow expansion factor, for site s on day j for duration d,

E' = mean expansion factor to 24-hour flow over all sites and all days,

X_{sj} = 24-hour daily flow at site s on day j,

P_{sjd} = flow for duration d at site s on day j (vph)

$$\frac{V_{ijd}}{d}$$

where

d = duration (hr.), and

β_{sjd} = a normally distributed random variable with zero mean and constant variance.

It has been shown by Phillips that the error term (β_{sjd}) is a randomly distributed random variable with zero mean and has no correlation with the daily flow.(3,4)

The second step is to determine the daily expansion factor that can be applied to the estimated 24-hour volume count to obtain an estimate of the AADT. This factor is given as

$$D_{sj} = D + \sigma_{sj}, \tag{4}$$

where

$$D_{sj} = AADT_s/EAADT_s,$$

= actual daily expansion factor at site s on day j,

$EAADT_s$ = estimated annual average daily traffic at site s,

$AADT_s$ = true average annual daily traffic at site s,

D = mean daily correction factor for all sites and all days, and

α_{sj} = a normally distributed random variable with zero mean.

The daily factors are also dependent upon the type of road and the day and month on which the count is taken.

A single multiplication factor for the indirect method is given as

$$
\begin{aligned}
F_{sjd} &= (E_{sjd})\ (D_{sj}) \\
&= (E' + \beta_{sjd})\ (D + \alpha_{sjd}) \\
&= (E'D + D\,\beta_{sjd} \quad E'\ \alpha_{sjd} + \beta_{sjd}\ \alpha_{sjd}
\end{aligned}
\tag{5}
$$

It has been determined that the variables β_{sjd} and α_{sjd} are not correlated,[3] which means that any characteristics that may be determined for the expansion factor for a short count at a particular site and day cannot be used to make any inference on the characteristics of the mean correction factor.

Direct Method

In this method a single multiplicative factor is determined as

$$A_{sjd} = A' + \alpha_{sjd}, \tag{6}$$

where

$$A_{sjd} = AADT/\frac{(X_{sjd})\ (24)}{d},$$

A_{sjd} = actual daily direct expansion factor for AADT from a short-count duration of d at site s on day j,

   d = duration of the count, and

X_{sjd} = volume for duration d at site s on day j.

If direct expansion factors can be determined, their use will have a significant impact on the cost of data collection for estimating AADT's. Problems associated with this determination were related to the noncorrelation of α_{sjd} and β_{sjd} and the variation of traffic at a given site from day to day and month to month. If, however, it is possible to identify periods of the day during which counts of specific durations are stable during the whole year, it will be possible to develop expansion factors that can be used to estimate AADT's from short counts taken during these periods. The probability of establishing such stable periods will, however, be dependent upon the accuracy and confidence level demanded for the counts.

STUDY METHODOLOGY

Data obtained in 1980 at 16 continuous count stations were used to determine the coefficients of variation of short duration counts for use in examining the stability of different duration counts taken at different times of the day and different days of the week. The station locations and their AADT's for 1981 are shown in Table 1. The AADT's were estimated from short counts using equation (7), which estimates the AADT at a site directly from a short count without the application of correction factors. The relative error of the estimated AADT's was then determined by comparing it with the true AADT at the site using equation (8).

$$\text{EAADT}_{sd} = \frac{V_{ijd}(24)}{d}, \tag{7}$$

where

EAADT_{sd} = estimated AADT from the ith short count of of duration d at site s (no correction factor applied),

V_{ijd} = volume of ith short count of duration d taken on day j, and

   d = duration of count.

$$p = \frac{(EAADT_{sd} - AADT_s)(100)}{AADT_s} , \qquad (8)$$

where

p = relative error, and

$AADT_s$ = true AADT from continuous counts at site s.

The average relative error $(\bar{p}_{it})$ was then determined for all EAADT's estimated for a given site from short counts having the same duration and taken on the same day and started at the same time of day. The values of $(\bar{p}_{it})$ were then used to determine expansion factors for different durations and starting times, and these factors were then used to estimate 1981 AADT's from short counts extracted from the 1981 data. The accuracies of the estimated AADT's thus obtained were then determined in terms of their relative errors.

Estimation of AADT

The first step in the estimation of the AADT from short counts is to identify suitable periods for taking short counts in terms of suitable days of the week and suitable times of the day for different durations of short counts. A stable period for a given short count in this study is defined as a period during which short counts have coefficients of variation (COV) of 5% or less. This ensures that there is a 95% chance that any short count started during a stable period will be between ±10% of the true mean value of the count. Each counting period is identified by the time the count starts.

Tables 2 through 4 give a representative sample of the COV's obtained. The stable periods are located within the heavy rules in the tables. For some stations the distributions of stable periods tended to be similar during the day although minor variations of the actual COV values were observed. It is believed that if a suitable method for classifying highways is developed, the links of stations exhibiting similar distributions of stable periods will fall under the same class. Work is now in progress to develop such a classification system. The COV's obtained were, therefore, examined to determine suitable stable periods for different short counts.

STATION NO.	DIRECTION	ROUTE	CLASS OF ROAD	LOCATION DESCRIPTION	AADT (1981)
1	Both	60	VA I	1.7 Miles East of E.C.L. Richmond	12089
2	Both	45	VA II	2.2 Miles South of Route 60	1745
3	North	29	Arterial	3.6 Miles South of S.C.L. Lynchburg	9199
4	East	460	Arterial	0.1 Mile East of Route 652	6714
5	North	220	Arterial	0.6 Mile South of S.C.L. Fincastle	3063
6	Both	256	VA II	1.3 Miles East of Route 276	2607
7	Both	33	Arterial	6.3 Miles East of Swift Run Gap	2704
8	Both	20	VA 1	3.4 Miles West of Route 3	3435
9	East	60	VA I	1.2 Miles East of Rout 147	13206
10	North	301	Arterial	0.2 Mile South of Route 17	3099
11	North	17	Arterial	0.9 Mile North of N.C.L. Tappahannock	2863
12	Both	208	VA II	0.3 Mile South of Route 608	2417
13	Both	156	VA II	3.6 Miles South of Route 60	470
14	East	6	VA I	0.8 Mile West of W.C.L. Richmond	9179
15	North	81	Interstate	2.4 Miles South of Route 659	10748
16	West	64	Interstate	1.2 Miles East of Route 15	5648

Table 1: – Locations and 1981 AADTS of Countinuous Count Stations.

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Station No: ___2___   Route: ___45___

Location: 2.2 Miles   Day of Count ___Monday___

South of Route 60   Year of Count ___1980___

Starting Hour Of Count	COV						
	Duration of Count						
	4 Hr.	6 Hr.	8 Hr.	10 Hr.	12 Hr.	14 Hr.	16 Hr.
0	11.91	31.74	20.67	26.32	16.58	10.96	4.90
1	23.37	14.44	35.49	20.39	12.74	7.25	3.96
2	48.23	22.20	27.47	16.90	11.05	4.92	4.17
3	18.99	35.93	20.32	12.58	7.05	3.77	5.25
4	21.70	27.35	16.69	10.83	4.62	3.99	5.14
5	36.40	20.25	12.39	6.84	3.58	5.10	4.78
6	25.49	14.92	9.30	3.34	2.88	4.16	3.40
7	20.47	11.41	5.52	2.31	4.12	3.85	2.99
8	14.35	7.51	0.93	0.96	2.59	1.83	1.31
9	6.01	8.07	8.03	3.87	3.64	4.25	
10	6.50	10.54	7.10	4.08	4.53	4.98	
11	10.22	9.32	3.97	3.58	4.32		
12	12.69	7.45	3.64	4.34	4.79		
13	9.76	2.70	2.37	3.39			
14	7.79	2.65	3.52	4.15			
15	1.58	1.31	0.44				
16	6.36	3.53	1.78				
17	9.69	5.09					
18	6.19	2.51					
19	6.87						
20	12.39						

Table 2: – Coefficients of Variations of Short Counts for Station 2 on Mondays.

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Station No: 3   Route: 29

Location: 3.6 Miles   Day of Counts Tuesday

South of S.C.L. Lynchburg   Year of Count 1980

Starting Hour Of Count	COV Duration of Count						
	4 Hr.	6 Hr.	8 Hr.	10 Hr.	12 Hr.	14 Hr.	16 Hr.
0	2.01	5.08	15.83	11.90	3.62	1.82	2.91
1	6.13	13.13	15.51	8.14	0.05	2.88	1.87
2	7.56	17.20	12.57	3.77	1.87	2.47	1.16
3	12.68	15.46	7.84	0.51	3.31	2.21	0.99
4	18.52	13.20	3.98	1.83	2.95	1.12	0.15
5	16.54	8.29	0.40	3.29	2.17	0.93	0.04
6	13.15	3.40	2.56	3.58	1.59	0.54	0.35
7	5.98	4.25	6.73	4.76	2.93	1.68	0.83
8	7.67	13.11	11.80	7.48	5.32	3.88	3.74
9	18.65	17.60	12.09	8.26	6.14	4.80	
10	23.23	17.84	10.78	7.57	5.63	5.36	
11	33.43	13.28	8.18	5.58	4.01		
12	16.15	7.39	4.09	2.11	2.03		
13	5.79	1.65	0.49	1.80			
14	0.39	2.42	4.01	3.58			
15	4.72	6.17	7.12				
16	7.92	9.09	7.91				
17	8.10	9.14					
18	9.56	7.53					
19	11.99						
20	7.77						

Table 3: - Coefficients of Variations of Short Counts for Station 3 on Tuesdays.

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Station No: 3   Route: 29

Location: 3.6 Miles   Day of Counts Thursday

South of S.C.L. Lynchburg   Year of Count 1980

Starting Hour Of Count	COV Duration of Count						
	4 Hr.	6 Hr.	8 Hr.	10 Hr.	12 Hr.	14 Hr.	16 Hr.
0	19.33	45.96	82.30	74.58	67.93	59.88	54.25
1	41.89	80.70	85.78	75.70	64.11	57.81	52.21
2	67.55	89.44	83.90	70.64	61.79	55.64	51.24
3	89.49	89.61	77.94	65.48	58.78	52.89	50.13
4	92.23	85.68	71.53	62.28	55.92	51.40	48.00
5	90.84	78.32	65.43	58.57	52.61	49.86	45.73
6	85.95	70.91	61.37	54.95	50.46	47.10	44.12
7	73.50	58.92	52.66	46.78	44.68	40.70	39.06
8	54.41	45.36	40.87	38.30	36.03	33.31	32.14
9	38.12	35.28	32.80	33.14	29.67	28.68	
10	29.28	29.01	24.14	28.10	25.66	24.73	
11	26.10	26.26	28.40	24.91	23.89		
12	26.88	27.81	26.84	24.05	23.05		
13	27.85	30.10	25.46	24.16			
14	29.02	27.37	23.81	22.61			
15	30.34	24.14	22.66				
16	26.78	21.92	20.51				
17	22.64	20.70					
18	16.08	14.86					
19	7.97						
20	5.82						

Table 4: - Coefficients of Variations of Short Counts for Station
3 on Thursdays.

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Stable Days of the Week

An examination of the results showed clearly that for all stations Thursday had the lowest number of stable periods of all weekdays (Monday to Friday), and that the COV's for Thursday were generally much higher than those for any other weekday, with some stations having no stable periods at all on Thursdays (see Table 4). Friday had the next least number of stable periods on a weekday. These results indicate that short counts taken on a Thursday or a Friday will tend to be very unreliable and should not be used for estimating AADT's, except where the user of the counts is prepared to accept large errors in the estimates.

The results also show that, in general, there are much fewer stable periods during the weekend (Saturday and Sunday) than during Monday through Wednesday. Obviously, then, the best days for taking counts are Mondays, Tuesdays, and Wednesdays.

Stable Count Periods and Duration of Counts

In view of the above, only Mondays through Wednesdays were considered for use in identifying stable count periods. In this task, two general patterns of stable count periods were found. In the first pattern, all the stable count periods were enclosed in a single cluster as shown in Table 2; while in the second pattern, the periods were in two distinct clusters -- one in the morning and the other in the afternoon, as shown in Table 3.

The exact timing of the stable count periods was found to be dependent upon the type of highway and the day of the count. In general, however, the length of the stable periods increased as the duration of the count increased to 12 hours, and became rather erratic for some stations when the duration was longer than 12 hours.

The results, in general, do not indicate any specific count duration as being the best, as very low COV's were obtained for most count durations, if the short count was started during a stable period for that specific count duration on a given day. For some stations, however, counts taken for durations less than 6 hours and longer than 12 hours tended to have very short stable periods. The stable periods selected for the estimation of AADT's were, therefore, those for counts of 6-, 8-, 10- and 12-hour duration taken on Mondays, Tuesdays, and Wednesdays.

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Direct Expansion Factors (f_{jtd}) and EAADT

Using the 1980 data for the stable periods identified, direct expansion factors were developed for short counts of 6-, 8-, 10-, and 12-hour durations for specific starting times on Mondays, Tuesdays, and Wednesdays. The expansion factors (f_{jtd}) for a given station were determined from equation (9) using the average relative error ($\bar{p}_{jt}$) for a given duration d and a given weekday and starting time.

$$f_{jtd} = \frac{24}{(1 + p_{jtd})\, d} , \qquad (9)$$

where

f_{jtd} = direct expansion factor for short count duration d taken at a given site on a specific day (j) and starting at a specific time (t).

The EAADT's for 1981 were then obtained by multiplying the expansion factors by the appropriate short-count volumes extracted from the 1981 continuous count data. Tables 5 through 7 show representative samples of the results.

Comparison of EAADTS and AADT

In order to determine the accuracy of the estimated AADT's (EAADTS), they were individually compared with the true AADT's of the respective links for 1981 by determining their relative errors. Samples of the results are also shown in Tables 5 through 7. An examination of the results indicates that relative errors greater than 10% tend to occur for short counts started between the hours of 5 p.m. and 5 a.m. It was also observed that EAADT's obtained from short counts taken on holidays tended to have relative errors higher than 10%. The percentage of EAADT's at each station having relative errors greater than 10% was also determined for each direction and each day. The results, given in Appendix A, indicate that there was a higher percentage of EAADT's with relative errors greater than 10% on Mondays, and that AADT's estimated from short counts taken between February and November tended to be more accurate than those estimated from counts taken in January and December.

A close examination of the expansion factors indicated that those for the same duration at a given site were approximately equal. A representative value was, therefore, determined for each duration at each site by using the average value of the expansion factors for all stable starting times. Starting times for short counts were then selected, based on convenience and accuracy. Appendix B shows the representative values of the expansion factors and recommended starting times.

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Day	Date	Count Duration	Start Time	Short Count Volume	Average Relative Error ($\bar{P}_{jt}$)	Expansion Factor (f_{jtd})	Estimated AADT (EAADT)	Relative Error (%)
Mon.	1/19/81	6	11 A.M.	5585	0.7298	2.31	12915	6.83
Mon.	2/2/81	8	1 P.M.	5851	0.5239	1.97	11518	-4.72
Mon.	3/2/81	10	8 A.M.	8041	0.6040	1.50	12031	-0.48
Mon.	5/25/81	12	12 Noon	7731	0.3148	1.52	11760	-2.72
Tues.	1/6/81	6	11 A.M.	5088	0.7121	2.34	11887	-1.67
Tues.	5/5/81	8	7 A.M.	6043	0.4284	2.10	12692	4.99
Tues.	6/2/81	10	7 A.M.	7992	0.5164	1.58	12649	4.63
Tues.	8/11/81	6	1 P.M.	5068	0.7128	2.34	11836	-2.09
Wed.	1/28/81	6	7 A.M.	3857	0.3501	2.96	11427	-5.48
Wed.	2/18/81	8	5 A.M.	4675	0.1373	2.64	12332	2.01
Wed.	4/15/81	10	2 A.M.	4016	-0.2363	3.14	12621	4.4
Wed.	7/29/81	12	1 A.M.	4736	-0.2042	2.51	11902	-1.55

Table 5: – Selected Sample of Expansion Factors and Estimated AADTS with their Relative Errors for Station 1.

Day	Date	Count Duration	Start Time	Short Count Volume	Average Relative Error $(\bar{p}_{jt})$	Expansion Factor (f_{jtd})	Estimated AADT (EADDT)	Relative Error (%)
Mon.	1/5/81	6	2 P.M.	689	0.5408	2.6	1789	2.52
Mon.	2/16/81	8	3 P.M.	639	0.1598	2.59	1653	-5.27
Mon.	3/9/81	10	9 A.M.	1059	0.6149	1.49	1574	-9.80
Mon.	4/13/81	12	6 A.M.	1351	0.6082	1.24	1680	-3.72
Tues.	5/12/81	6	9 A.M.	580	0.4717	2.72	1576	-9.68
Tues.	6/16/81	8	10 A.M.	881	0.6412	1.83	1610	-7.74
Tues.	7/21/81	10	2 P.M.	847	0.1549	2.08	1760	0.86
Tues.	8/25/81	12	11 A.M.	1122	0.2935	1.55	1735	-0.57
Wed.	9/9/81	6	1 P.M.	789	0.6729	2.39	1887	8.14
Wed.	10/28/81	8	8 A.M.	889	0.5684	1.91	1700	-2.58
Wed.	11/18/81	10	10 A.M.	1156	0.5115	1.59	1836	5.21
Wed.	12/2/81	12	10 A.M.	1145	0.3749	1.45	1666	-4.53

Table 6: - Selected Sample of Expansion Factors and Estimated AADTS with their

Relative Errors for Station 2.

Day	Date	Count Duration	Start Time	Short Count Volume	Average Relative Error ($\bar{p}_{jt}$)	Expansion Factor (f_{jtd})	Estimated AADT (EADDT)	Relative Error (%)
Mon.	1/12/81	6	1 P.M.	2830	0.4357	2.79	7885	-14.28
Mon.	1/19/81	8	7 A.M.	4345	0.5283	1.96	8529	- 7.28
Mon.	2/16/81	10	9 A.M.	5332	0.4303	1.68	8947	- 2.74
Mon.	4/13/81	12	9 A.M.	6601	0.3274	1.51	9946	8.12
Tues.	3/24/81	6	7 A.M.	3369	0.5185	2.63	8875	- 3.52
Tues.	5/19/81	8	12 Noon	4112	0.3541	2.22	9110	- 0.97
Tues.	7/14/81	10	6 A.M.	6146	0.5052	1.59	9800	6.53
Tues.	10/27/81	12	7 A.M.	6957	0.4727	1.36	9448	2.71
Wed.	6/24/81	6	7 A.M.	3726	0.5217	2.63	9794	6.47
Wed.	8/19/81	8	1 P.M.	4073	0.2857	2.33	9504	3.32
Wed.	11/11/81	10	10 A.M.	4915	0.3461	1.78	8763	- 4.74
Wed.	12/9/81	12	7 A.M.	6673	0.4682	1.36	9090	- 1.18

Table 7: - Selected Sample of Expansion Factors and Estimated AADTS with their

Relative Errors for Station 3.

DISCUSSION

The methodology provides a tool that can be used by highway and traffic engineers and transportation planners to estimate the AADT at a particular highway link by taking only a 6-, 8-, 10- or 12-hour count on one of the recommended days. To use this tool, however, one must know the appropriate expansion factor to be applied to the specific short count. Although the expansion factors given in this report were developed for specific continuous count stations, it has been shown that factors for a given station can be used at other stations which have similar traffic volume characteristics.(3,4) The development of a proper classification system will facilitate the grouping of highway links with similar traffic volume characteristics into the same class. The factors developed for a given station in this study can, therefore, be used for all other highway links that are grouped in the same class. It will, therefore, be possible to estimate the AADT of any highway link in the state from a short count, as it is envisaged that all highway links will be grouped with one or another of the links at which the continuous counts are located. The development of such a classification procedure will facilitate a wider use of the factors recommended in this report. Such a classification system is now being developed as part of this study.

WORK IN PROGRESS

The major part of the work now in progress is the breaking down of highway segments into highway links such that the traffic characteristics along a given link remain reasonably constant. This aspect of the work has been completed for the Richmond, Bristol, Fredericksburg, and Staunton districts. Work continues in the remaining districts.

At the completion of this task, a classification model which has already been developed will be used to group highway links of similar traffic characteristics in the same class. A traffic count program for the state will then be developed which will facilitate the determination of the average AADT of all links within a given class and, therefore, the vehicle miles traveled on the links in a given class. A comparison of the estimated cost for the program with that of the current traffic count programs will then be carried out.

It is estimated that the draft final report for the study will be ready by the end of February 1985.

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CONCLUSIONS

The results of the study show that this methodology can be used to estimate AADT's from short counts with reasonable accuracy. These short counts should, however, be taken during stable periods such as have been shown to exist at certain times on Mondays, Tuesdays, and Wednesdays, although AADT's estimated from short counts taken on Tuesdays and Wednesdays tend to be more accurate than those on Mondays.

Counts of 6-, 8-, 10-, and 12-hour durations are suitable for the estimation of AADT's. The appropriate expansion factors for a given highway should, however, be used. These expansion factors are dependent upon the characteristics of the traffic volume on the highway link.

REFERENCES

1. Robertson, R. M., and R. F. Jordan, Jr., "Evaluation of the Traffic Count Program," Virginia Highway and Transportation Research Council. Charlottesville, Virginia, September 1978.

2. Jordan, R. F., Jr., "Transportation Data Requirements: An Evaluation of Manual Traffic Counts on Primary Highways."

3. Garwyn, Phillips, "Accuracy of Annual Traffic Flow Estimates from Short Period Counts," TRRL Supplementary Report 514, Transport and Road Research Laboratory. 1979.

4. _____, "Accuracy of Annual Traffic Flow Estimates from Automatic Counts," TRRL Supplementary Report 515, Transport and Road Research Laboratory. 1979.

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APPENDIX A

PERCENTAGES OF ESTIMATED AADT's HAVING RELATIVE ERRORS
GREATER THAN 10%

	DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	6.6667	16.6667	10.0000	16.6667	5.0000	10.0000	10.0000	0.0000	0.0000	5.0000	0.0000	12.5000
	8-HR	0.0000	9.0909	4.5455	9.0909	0.0000	9.0909	9.0909	0.0000	0.0000	2.2727	0.0000	9.0909
	10-HR	0.0000	3.0303	0.0000	9.0909	0.0000	13.6364	0.0000	0.0000	0.0000	6.8182	0.0000	11.3636
	12-HR	0.0000	0.0000	0.0000	2.7778	0.0000	12.5000	5.5556	0.0000	0.0000	8.3333	0.0000	12.5000
	OVERA	1.5152	6.8182	3.4091	9.0909	1.1364	11.3636	6.0606	0.0000	0.0000	5.6818	0.0000	11.3636
TUESDAY	6-HR	12.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	13.3333
	8-HR	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	13.3333
	10-HR	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	12.0000
	12-HR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	OVERA	20.5882	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	12.9412
WEDNESDAY	6-HR	37.5000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	12.5000	10.0000
	8-HR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	10-HR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	12-HR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	OVERA	9.3750	6.2500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.1250	2.5000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	7.3810	2.3810	6.8627
8-HR	4.3290	3.4014	0.0000
10-HR	3.8961	3.2653	0.0000
12-HR	3.7698	0.0000	0.0000
OVERA	4.7619	3.0012	1.7157

TOTAL PERCENT FOR STATION

3.8848

Table A-1. Percentage of estimated AADT's having relative errors greater than 10% at Station 1.

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DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY												
6-HR	4.1667	4.1667	16.6667	5.5556	16.6667	13.3333	16.6667	3.3333	16.6667	16.6667	30.0000	22.2222
8-HR	4.1667	4.1667	16.6667	.0000	16.6667	16.6667	16.6667	3.3333	33.3333	16.6667	23.3333	44.4444
10-HR	.0000	.0000	6.6667	3.7037	.0000	8.8889	11.1111	.0000	22.2222	16.6667	2.2222	22.2222
12-HR	.0000	.0000	12.5000	.0000	.0000	5.0000	15.6250	.0000	18.7500	6.2500	.0000	12.5000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	1.7241	1.7241	12.4138	2.2989	6.8966	10.3448	14.6552	1.3793	22.4138	13.7931	11.7241	24.1379
TUESDAY												
6-HR	8.3333	50.0000	20.0000	.0000	22.2222	.0000	5.5556	.0000	5.5556	66.6667	11.1111	.0000
8-HR	8.3333	33.3333	3.3333	.0000	.0000	.0000	.0000	4.1667	5.5556	25.0000	22.2222	.0000
10-HR	25.0000	20.0000	4.0000	.0000	6.6667	.0000	.0000	5.0000	13.3333	.0000	33.3333	6.6667
12-HR	31.2500	43.7500	10.0000	.0000	.0000	.0000	.0000	.0000	16.6667	.0000	25.0000	.0000
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	16.6667	36.9048	9.5238	.0000	7.9365	.0000	1.5873	2.3810	9.5238	26.1905	22.2222	1.5873
WEDNESDAY												
6-HR	11.1111	8.3333	.0000	.0000	8.3333	33.3333	20.0000	16.6667	33.3333	.0000	.0000	.0000
8-HR	14.2857	21.4286	.0000	.0000	3.5714	28.5714	22.8571	3.5714	47.6190	.0000	4.7619	3.5714
10-HR	33.3333	37.5000	.0000	.0000	.0000	12.5000	20.0000	.0000	33.3333	.0000	16.6667	16.6667
12-HR	41.6667	50.0000	.0000	.0000	.0000	12.5000	20.0000	.0000	33.3333	.0000	16.6667	18.7500
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	25.0000	30.0000	.0000	.0000	2.5000	21.2500	21.0000	3.7500	38.3333	.0000	10.0000	10.0000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	13.7037	14.2857	11.3636
8-HR	15.1852	7.9365	12.6623
10-HR	6.4198	9.5238	14.0152
12-HR	5.2778	11.3095	15.9091
OVERA	9.4253	10.7710	13.5227

TOTAL PERCENT FOR STATION

10.9879

Table A-2. Percentage of estimated AADT's having relative errors greater than 10% at station 2.

* No estimates made

	DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	50.0000	8.3333	12.5000	37.5000	.0000	8.3333	.0000	.0000	50.0000	.0000	.0000	.0000
	8-HR	26.6667	6.6667	5.0000	15.0000	.0000	13.3333	.0000	.0000	20.0000	.0000	.0000	.0000
	10-HR	23.3333	16.6667	12.5000	17.5000	.0000	16.6667	.0000	.0000	25.0000	.0000	.0000	.0000
	12-HR	19.4444	13.8889	8.3333	10.4167	.0000	11.1111	.0000	.0000	20.8333	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	25.8065	12.9032	9.6774	16.9355	.0000	12.9032	.0000	.0000	25.8065	.0000	.0000	.0000
TUESDAY	6-HR	12.5000	16.6667	15.0000	16.6667	8.3333	15.0000	8.3333	.0000	.0000	8.3333	18.7500	12.5000
	8-HR	42.8571	42.8571	22.8571	9.5238	4.7619	5.7143	4.7619	.0000	.0000	14.2857	17.8571	10.7143
	10-HR	38.8889	33.3333	17.7778	7.4074	3.7037	2.2222	.0000	.0000	.0000	11.1111	16.6667	8.3333
	12-HR	20.0000	20.0000	12.0000	6.6667	.0000	6.0000	6.6667	.0000	.0000	6.6667	12.5000	5.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	30.0000	28.8889	16.6667	8.8889	3.3333	6.0000	4.4444	.0000	.0000	10.0000	15.8333	8.3333
WEDNESDAY	6-HR	50.0000	50.0000	18.7500	10.0000	.0000	6.2500	5.0000	.0000	.0000	.0000	18.7500	35.0000
	8-HR	41.6667	33.3333	12.5000	13.3333	.0000	4.1667	13.3333	.0000	.0000	.0000	12.5000	23.3333
	10-HR	50.0000	31.8182	13.6364	12.7273	.0000	6.8182	10.9091	.0000	.0000	.0000	15.9091	23.6364
	12-HR	41.6667	27.0833	10.4167	10.0000	.0000	8.3333	11.6667	.0000	.0000	.0000	12.5000	20.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	45.4545	32.5758	12.8788	11.5152	.0000	6.8182	10.9091	.0000	.0000	10.0000	14.3939	23.6364

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	13.5135	11.5854	15.1042
8-HR	7.0270	13.9373	12.1528
10-HR	9.1892	10.8401	12.6894
12-HR	6.7568	7.8049	10.9375
OVERA	8.4568	10.6504	12.2475

TOTAL PERCENT FOR STATION

10.6539

Table A-3. Percentage of estimated AADT's having relative errors greater than 10% at station 3.

MONDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	25.0000	.0000	.0000	.0000	33.3333	.0000	.0000	.0000	50.0000	.0000	.0000	33.3333
8-HR	12.5000	12.5000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	16.6667
10-HR	6.2500	6.2500	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	8.3333
12-HR	4.1667	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	5.5556
14-HR	9.0909	6.8182	.0000	.0000	.0000	.0000	9.0909	.0000	4.5455	.0000	4.5455	18.1818
16-HR	4.1667	4.1667	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	5.5556
OVERA	7.5000	5.0000	.0000	.0000	1.1111	.0000	3.3333	.0000	3.3333	.0000	1.6667	12.2222

TUESDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	.0000	15.6250	.0000	.0000	.0000	.0000	.0000	25.0000	.0000	12.5000	12.5000	33.3333
8-HR	.0000	9.3750	.0000	.0000	.0000	.0000	.0000	25.0000	.0000	4.1667	18.7500	29.1667
10-HR	.0000	10.0000	.0000	.0000	.0000	.0000	.0000	10.0000	.0000	.0000	10.0000	30.0000
12-HR	.0000	5.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	5.0000	16.6667
14-HR	.0000	2.5000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	13.3333
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	6.6667
OVERA	.0000	6.6964	.0000	.0000	.0000	.0000	.0000	8.9286	.0000	2.3810	7.1429	20.8333

WEDNESDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	16.6667	8.3333	.0000	6.6667	.0000	16.6667	22.2222	.0000	.0000	.0000	.0000	41.6667
8-HR	25.0000	18.7500	.0000	.0000	.0000	.0000	25.0000	.0000	.0000	.0000	.0000	43.7500
10-HR	20.0000	10.0000	2.5000	.0000	.0000	.0000	20.0000	.0000	.0000	.0000	.0000	35.0000
12-HR	15.0000	10.0000	.0000	.0000	.0000	.0000	16.6667	.0000	.0000	.0000	.0000	27.5000
14-HR	12.5000	12.5000	.0000	.0000	.0000	.0000	16.6667	.0000	.0000	.0000	.0000	25.0000
16-HR	16.6667	16.6667	.0000	.0000	.0000	.0000	22.2222	.0000	.0000	.0000	.0000	25.0000
OVERA	17.1053	11.8421	.6579	.5263	.0000	1.3158	19.2982	.0000	.0000	2.3810	.0000	31.5789

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	10.5263	8.0882	9.8485
8-HR	3.9474	6.6176	9.6591
10-HR	1.9737	5.0000	7.5000
12-HR	.8772	2.3529	5.9091
14-HR	4.0670	1.4706	5.6818
16-HR	1.3158	.5882	6.8182
OVERA	2.8070	3.7815	7.0574

TOTAL PERCENT FOR STATION

4.7074

Table A-4. Percentage of estimated AADT's having relative errors greater than 10% at station 4.

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU.	SEP.	OCT.	NOV.	DEC.
MONDAY												
6-HR	12.5000	16.6667	.0000	.0000	3.3333	.0000	.0000	20.0000	26.6667	37.5000	32.0000	.0000
8-HR	6.2500	4.1667	.0000	4.1667	.0000	.0000	3.1250	31.2500	37.5000	53.1250	45.0000	12.5000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	3.5714	7.1429	23.8095	39.2857	28.5714	7.1429
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	26.6667	25.0000	20.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	25.0000	25.0000	10.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	33.3333	25.0000	10.0000	.0000
OVERA	4.8611	5.5556	.0000	.9259	.9259	.0000	1.3889	13.8889	28.7037	37.5000	28.8889	4.1667
TUESDAY *												
6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
WEDNESDAY												
6-HR	2.7778	.0000	.0000	21.6667	18.7500	14.5833	18.3333	11.1111	33.3333	54.1667	33.3333	37.5000
8-HR	.0000	.0000	.0000	21.8182	15.9091	9.0909	16.3636	18.1818	36.3636	43.1818	45.4545	45.4545
10-HR	.0000	.0000	.0000	20.0000	13.8889	11.1111	15.5556	14.8148	36.1111	41.6667	55.5556	38.8889
12-HR	.0000	.0000	.0000	17.1429	7.1429	14.2857	14.2857	14.2857	21.4286	39.2857	35.7143	28.5714
14-HR	.0000	.0000	.0000	13.3333	.0000	16.6667	10.0000	5.5556	16.6667	29.1667	25.0000	20.8333
16-HR	.0000	.0000	.0000	5.7143	.0000	7.1429	.0000	.0000	.0000	10.7143	7.1429	7.1429
OVERA	.6410	.0000	.0000	17.6923	11.0577	12.0192	13.4615	11.5385	26.4423	38.9423	35.5769	32.2115

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	13.1707	.0000	20.9259
8-HR	17.0732	.0000	20.8081
10-HR	10.1045	.0000	20.0000
12-HR	6.8293	.0000	15.8730
14-HR	5.4878	.0000	11.4815
16-HR	6.0976	.0000	3.1746
OVERA	11.3144	.0000	16.5812

TOTAL PERCENT FOR STATION

14.4984

Table A-5. Percentage of estimated AADT's having relative errors greater than 10% at station 5.

* No estimates made for Tuesday.

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY												
6-HR	.0000	.0000	.0000	41.6667	33.3333	.0000	11.1111	.0000	.0000	.0000	6.6667	33.3333
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.0000	.0000	.0000	41.6667	33.3333	.0000	11.1111	.0000	.0000	.0000	6.6667	33.3333
TUESDAY												
6-HR	16.6667	.0000	.0000	22.2222	22.2222	13.3333	.0000	.0000	.0000	.0000	33.3333	22.2222
8-HR	12.5000	.0000	.0000	25.0000	16.6667	15.0000	37.5000	.0000	.0000	.0000	12.5000	8.3333
10-HR	8.3333	.0000	.0000	14.8148	11.1111	6.6667	22.2222	5.5556	.0000	.0000	11.1111	3.7037
12-HR	2.2727	.0000	.0000	15.1515	9.0909	7.2727	18.1818	9.0909	.0000	9.0909	.0000	3.0303
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.9259	.0000	.0000	17.2840	12.3457	8.8889	20.3704	5.5556	.0000	3.7037	9.2593	6.1728
WEDNESDAY												
6-HR	.0000	.0000	.0000	50.0000	.0000	.0000	33.3333	33.3333	66.6667	25.0000	50.0000	.0000
8-HR	.0000	.0000	.0000	12.5000	.0000	.0000	16.6667	16.6667	33.3333	25.0000	25.0000	.0000
10-HR	.0000	.0000	.0000	21.4286	14.2857	7.1429	33.3333	9.5238	47.6190	32.1429	25.0000	3.5714
12-HR	.0000	.0000	.0000	30.0000	15.0000	15.0000	36.6667	13.3333	43.3333	32.5000	20.0000	5.0000
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.0000	.0000	.0000	26.2500	12.5000	10.0000	33.3333	13.3333	45.0000	31.2500	23.7500	3.7500

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	10.6061	11.7647	20.9302
8-HR	.0000	11.0294	10.4651
10-HR	.0000	6.8627	15.6146
12-HR	.0000	6.9519	16.7442
OVERA	10.6061	8.0610	15.9302

TOTAL PERCENT FOR STATION

11.7801

Table A-6. Percentage of estimated AADT's having relative errors greater than 10% at station 6.

* No estimates made.

A-7

MONDAY DURATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR		81.2500	87.5000	100.0000	75.0000	100.0000	50.0000	.0000	15.0000	93.7500	75.0000	100.0000	50.0000
8-HR		68.7500	100.0000	100.0000	75.0000	100.0000	50.0000	.0000	10.0000	87.5000	68.7500	87.5000	50.0000
10-HR		.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA		75.0000	93.7500	100.0000	75.0000	100.0000	50.0000	.0000	12.5000	90.6250	71.8750	93.7500	50.0000

TUESDAY DURATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR		39.2857	42.8571	42.8571	42.8571	35.7143	32.1429	3.5714	3.5714	37.1429	10.7143	33.3333	21.4286
8-HR		27.7778	33.3333	33.3333	30.5556	25.0000	25.0000	.0000	.0000	28.8889	8.3333	25.9259	16.6667
10-HR		9.3750	12.5000	12.5000	9.3750	9.3750	9.3750	.0000	.0000	12.5000	3.1250	8.3333	6.2500
12-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA		20.0000	23.3333	23.3333	21.6667	18.3333	17.5000	.8333	.8333	20.6667	5.8333	17.7778	11.6667

WEDNESDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	100.0000	100.0000	100.0000	65.0000	78.1250	34.3750	.0000	6.2500	35.0000	18.7500	81.2500	58.3333
8-HR	100.0000	100.0000	100.0000	60.0000	87.5000	29.1667	.0000	.0000	46.6667	12.5000	75.0000	50.0000
10-HR	100.0000	100.0000	100.0000	60.0000	80.0000	30.0000	.0000	.0000	48.0000	10.0000	65.0000	46.6667
12-HR	71.4286	71.4286	71.4286	42.8571	50.0000	17.8571	.0000	.0000	42.8571	3.5714	46.4286	28.5714
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	92.3077	92.3077	92.3077	56.9231	73.0769	27.8846	.0000	1.9231	42.3077	11.5385	67.3077	46.1538

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	68.6170	28.8889	55.0000
8-HR	65.9574	21.2346	54.0000
10-HR	.0000*	7.7778	52.4000
12-HR	.0000*	.0000	36.8571
OVERA	67.2872	15.1852	49.3846

TOTAL PERCENT FOR STATION

36.3516

Table A-7. Percentage of estimated AADT's having relative erros greater than 10% at station 7.

* No estimates made. Note: Most stable periods between 12 midnight and 5 a.m.

A-8

MONDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	50.0000	50.0000	40.0000	25.0000	.0000	25.0000	.0000	.0000	16.6667	12.5000	25.0000	33.3333
8-HR	50.0000	50.0000	45.0000	25.0000	.0000	25.0000	.0000	.0000	16.6667	12.5000	30.0000	33.3333
10-HR	20.0000	20.0000	20.0000	10.0000	.0000	10.0000	.0000	.0000	6.6667	5.0000	12.0000	13.3333
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	38.4615	38.4615	33.8462	19.2308	.0000	19.2308	.0000	.0000	12.8205	9.6154	21.5385	25.6410

TUESDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857	14.2857

WEDNESDAY DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	23.7179	50.0000	.0000
8-HR	25.0000	.0000	.0000
10-HR	10.2564	.0000	.0000
OVERA	18.9349	14.2857	.0000

TOTAL PERCENT FOR STATION

13.9130

Table A-8. Percentage of estimated AADT's having relative errors greater than 10% at station 8.

* No estimates made

A-9

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	DURATION												
	6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	100.0000	25.0000	.0000
	8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	7.1429	1.7857	.0000
TUESDAY	DURATION												
	6-HR	50.0000	.0000	.0000	.0000	.0000	25.0000	.0000	.0000	33.3333	75.0000	20.0000	20.0000
	8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	3.8462	.0000	.0000	.0000	.0000	1.9231	.0000	.0000	2.5641	5.7692	.0000	1.5385
WEDNESDAY	DURATION												
	6-HR	50.0000	.0000	.0000	.0000	.0000	12.5000	.0000	.0000	25.0000	25.0000	33.3333	100.0000
	8-HR	25.0000	.0000	.0000	.0000	.0000	12.5000	10.0000	.0000	25.0000	25.0000	16.6667	37.5000
	10-HR	50.0000	16.6667	.0000	.0000	.0000	25.0000	5.0000	66.6667	12.5000	12.5000	16.6667	25.0000
	12-HR	100.0000	33.3333	.0000	.0000	.0000	25.0000	20.0000	.0000	25.0000	25.0000	33.3333	50.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	40.0000	10.0000	.0000	.0000	.0000	10.0000	6.0000	6.6667	15.0000	15.0000	16.6667	32.5000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	10.2564	15.2174	18.1818
8-HR	.0000	.0000	12.5000
10-HR	.0000	.0000	10.7955
12-HR	.0000	.0000	27.2727
14-HR	.0000	.0000	.0000
16-HR	.0000	.0000	.0000
OVERA	.7326	1.1706	11.3636

TOTAL PERCENT FOR STATION

3.8510

A-10

Table A-9. Percentage of estimated AADT's having relative errors greater than 10% at station 9.

MONDAY

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	100.0000	87.5000	68.7500	41.6667	62.5000	18.7500	33.3333	33.3333	75.0000	50.0000	81.2500	58.3333
8-HR	66.6667	66.6667	50.0000	16.6667	.0000	12.5000	33.3333	22.2222	66.6667	37.5000	50.0000	50.0000
10-HR	50.0000	50.0000	39.5833	13.8889	.0000	8.3333	27.7778	16.6667	47.2222	33.3333	37.5000	38.8889
12-HR	46.1538	46.1538	32.6923	12.8205	.0000	7.6923	28.2051	15.3846	46.1538	34.6154	34.6154	35.8974
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	57.1429	55.7143	42.1429	17.1429	7.1429	10.0000	29.5238	19.0476	53.3333	36.4286	43.5714	41.9048

TUESDAY

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	100.0000	100.0000	50.0000	33.3333	.0000	70.0000	33.3333	66.6667	62.5000	75.0000	75.0000	70.0000
8-HR	66.6667	66.6667	53.3333	.0000	.0000	46.6667	44.4444	66.6667	25.0000	50.0000	50.0000	40.0000
10-HR	66.6667	66.6667	40.0000	.0000	.0000	30.0000	44.4444	66.6667	33.3333	50.0000	50.0000	40.0000
12-HR	50.0000	50.0000	30.0000	.0000	.0000	30.0000	33.3333	50.0000	25.0000	42.8571	37.5000	40.0000
14-HR	42.8571	42.8571	11.4286	.0000	.0000	22.8571	28.5714	33.3333	21.4286	.0000	32.1429	34.2857
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	58.8235	58.8235	30.5882	3.9216	.0000	36.4706	35.2941	50.9804	29.4118	48.5294	44.1176	41.1765

WEDNESDAY

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
6-HR	50.0000	50.0000	6.2500	15.6250	6.2500	50.0000	34.3750	41.6667	5.0000	25.0000	31.2500	31.2500
8-HR	25.0000	25.0000	6.2500	6.2500	.0000	25.0000	18.7500	25.0000	.0000	8.3333	12.5000	12.5000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	23.8095	23.8095	3.5714	7.1429	2.3810	23.8095	16.6667	20.6349	1.9048	11.1111	14.2857	14.2857

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	59.3750	63.0435	28.1977
8-HR	40.8333	43.4783	13.3721
10-HR	31.4583	42.0290	.0000
12-HR	29.4231	32.6087	.0000
14-HR		26.3975	
16-HR			
OVERA	35.5000	37.2123	13.2890

TOTAL PERCENT FOR STATION

29.4321

Table A-10. Percentage of estimated AADT's having relative errors greater than 10% at station 10.

DURATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	100.0000	86.6667	100.0000	75.0000	33.3333	20.0000	40.0000	60.0000	25.0000	50.0000	65.0000	50.0000
	8-HR	75.0000	75.0000	75.0000	56.2500	25.0000	12.5000	25.0000	45.0000	18.7500	37.5000	56.2500	37.5000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	80.0000	73.3333	80.0000	60.0000	26.6667	15.0000	30.0000	48.0000	20.0000	40.0000	55.0000	40.0000
TUESDAY	6-HR	75.0000	75.0000	75.0000	68.7500	75.0000	37.5000	6.2500	.0000	15.0000	56.2500	68.7500	75.0000
	8-HR	33.3333	33.3333	33.3333	33.3333	33.3333	16.6667	.0000	.0000	6.6667	25.0000	33.3333	33.3333
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	36.3636	36.3636	36.3636	34.0909	36.3636	18.1818	2.2727	.0000	7.2727	27.2727	34.0909	36.3636
WEDNESDAY	6-HR	16.6667	16.6667	16.6667	10.0000	11.1111	5.5556	.0000	.0000	3.3333	12.5000	12.5000	16.6667
	8-HR	100.0000	100.0000	100.0000	60.0000	66.6667	33.3333	20.0000	.0000	20.0000	75.0000	100.0000	100.0000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	28.5714	28.5714	28.5714	17.1429	19.0476	9.5238	2.8571	.0000	5.7143	21.4286	25.0000	28.5714

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	60.0000	50.5319	9.4203
8-HR	45.8333	22.6950	60.8696
10-HR	.0000	.0000	.0000
12-HR	.0000	.0000	.0000
OVERA	48.3333	24.5648	16.7702

TOTAL PERCENT FOR STATION

30.5004

A-12

Table A-11. Percentage of estimated AADT's having relative errors greater than 10% at station 11.

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY												
6-HR	33.3333	25.0000	26.6667	55.5556	16.6667	40.0000	16.6667	26.6667	16.6667	50.0000	40.0000	33.3333
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	33.3333	25.0000	26.6667	55.5556	16.6667	40.0000	16.6667	26.6667	16.6667	50.0000	40.0000	33.3333
TUESDAY*												
6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
WEDNESDAY												
6-HR	.0000	16.6667	33.3333	.0000	.0000	25.0000	20.0000	8.3333	13.3333	8.3333	8.3333	33.3333
8-HR	.0000	8.3333	41.6667	.0000	.0000	33.3333	26.6667	.0000	20.0000	16.6667	25.0000	33.3333
10-HR	.0000	41.6667	50.0000	.0000	.0000	.0000	20.0000	.0000	.0000	.0000	16.6667	53.3333
12-HR	12.5000	50.0000	50.0000	.0000	8.3333	.0000	20.0000	.0000	.0000	.0000	37.5000	60.0000
14-HR	.0000	50.0000	50.0000	.0000	16.6667	.0000	20.0000	.0000	.0000	.0000	62.5000	60.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
OVERA	3.3333	33.3333	45.0000	.0000	4.4444	11.6667	21.3333	1.6667	6.6667	5.0000	28.3333	48.0000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	31.9728	.0000	14.9660
8-HR	.0000	.0000	18.3673
10-HR	.0000	.0000	16.3265
12-HR	.0000	.0000	20.9184
14-HR	.0000	.0000	22.4490
16-HR	.0000	.0000	.0000
OVERA	31.9728	.0000	18.5034

TOTAL PERCENT FOR STATION

20.4698

Table A-12. Percentage of estimated AADT's having relative errors greater than 10% at station 12.

* No estimates made.

	DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	37.5000	30.0000	50.0000	5.0000	15.0000	28.0000	40.0000	47.5000	32.5000	7.5000	23.3333	15.0000
	8-HR	44.4444	29.6296	59.2593	5.5556	16.6667	22.2222	40.7407	38.8889	30.5556	16.6667	29.6296	13.8889
	10-HR	38.8869	40.7407	62.9630	.0000	16.6667	15.5556	25.9259	33.3333	30.5556	13.8889	18.5185	11.1111
	12-HR	35.7143	38.0952	57.1429	.0000	7.1429	14.2857	19.0476	25.0000	25.0000	7.1429	9.5238	14.2857
	14-HR	30.0000	40.0000	60.0000	.0000	.0000	8.0000	13.3333	25.0000	25.0000	5.0000	6.6667	10.0000
	16-HR	16.5667	22.2222	33.3333	.0000	.0000	.0000	11.1111	8.3333	8.3333	8.3333	.0000	.0000
	OVERA	36.6279	34.1085	55.8140	2.3256	11.6279	17.6744	28.6822	33.1395	27.9070	10.4651	17.8295	12.2093
TUESDAY	6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	10-HR*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
WEDNESDAY	6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	28.5366	.0000	.0000
8-HR	29.5393	.0000	.0000
10-HR	26.0163	.0000 *	.0000 *
12-HR	21.6028	.0000 *	.0000
OVERA	24.5604	.0000	.0000

TOTAL PERCENT FOR STATION

20.6387

Table A-13. Percentage of estimated AADT's having relative errors greater than 10% at station 13.

* No estimates made.

A-14

DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY												
6-HR	6.6667	.0000	.0000	.0000	13.3333	4.0000	.0000	.0000	6.6667	46.6667	20.0000	60.0000
8-HR	8.3333	.0000	.0000	.0000	8.3333	15.0000	.0000	.0000	.0000	58.3333	.0000	100.0000
10-HR	16.6667	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	41.6667	50.0000	50.0000
12-HR	6.6667	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	33.3333	20.0000	40.0000
14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	20.8333	.0000	25.0000
16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	18.5185	.0000	22.2222
OVERA	4.7619	.0000	.0000	.0000	2.8571	2.2857	.0000	.0000	.9524	32.3810	11.4286	42.8571
TUESDAY												
6-HR	.0000	.0000	16.0000	40.0000	35.0000	20.0000	5.0000	.0000	20.0000	46.6667	25.0000	65.0000
8-HR	.0000	.0000	5.0000	25.0000	25.0000	20.0000	.0000	.0000	10.0000	50.0000	43.7500	75.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	33.3333	31.2500	43.7500
12-HR	.0000	.0000	6.6667	.0000	.0000	.0000	.0000	.0000	3.3333	22.2222	16.6667	33.3333
14-HR	.0000	.0000	5.0000	.0000	.0000	.0000	.0000	.0000	.0000	16.6667	9.3750	15.6250
16-HR	.0000	.0000	6.6667	.0000	.0000	.0000	.0000	.0000	.0000	16.6667	8.3333	25.0000
OVERA	.0000	.0000	6.6667	9.0909	8.3333	5.4545	.7576	.0000	4.8485	28.2828	19.6970	38.6364
WEDNESDAY												
6-HR	16.6667	.0000	.0000	26.6667	41.6667	16.6667	10.0000	.0000	40.0000	61.1111	54.1667	66.6667
8-HR	20.0000	.0000	.0000	12.0000	50.0000	45.0000	32.0000	.0000	40.0000	60.0000	50.0000	60.0000
10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
14-HR	.0000	.0000	.0000	5.0000	.0000	.0000	5.0000	.0000	5.0000	25.0000	25.0000	25.0000
16-HR	.0000	.0000	.0000	3.3333	.0000	.0000	3.3333	.0000	3.3333	16.6667	12.5000	16.6667
OVERA	7.1429	.0000	.0000	9.2857	17.8571	11.6071	9.2857	.0000	17.1429	30.9524	26.7857	32.1429

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	10.0000	23.5556	28.0142
8-HR	13.1579	21.6667	31.0638
10-HR	8.5526	8.8889	.0000
12-HR	5.7895	7.0370	.0000
14-HR	2.9605	3.8889	7.4468
16-HR	2.6316	4.8148	4.6099
OVERA	6.0902	10.3704	13.6018

TOTAL PERCENT FOR STATION

10.0218

Table A-14. Percentage of estimated AADT's having relative errors greater than 10% at station 14.

	DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	55.5556	66.6667	50.0000	25.0000	22.2222	25.0000	.0000	44.4444	33.3333	33.3333	.0000	66.6667
	8-HR	55.5556	33.3333	.0000	33.3333	22.2222	8.3333	.0000	44.4444	33.3333	33.3333	.0000	66.6667
	10-HR	25.0000	25.0000	12.5000	6.2500	8.3333	6.2500	.0000	16.6667	12.5000	12.5000	.0000	25.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	12.5000	12.5000	6.2500	3.1250	4.1667	3.1250	.0000	8.3333	6.2500	6.2500	.0000	12.5000
	OVERA	17.7778	16.6667	8.3333	7.5000	6.6667	5.0000	.0000	13.3333	10.0000	10.0000	.0000	20.0000
TUESDAY	6-HR	100.0000	100.0000	50.0000	.0000	.0000	25.0000	.0000	.0000	.0000	.0000	.0000	50.0000
	8-HR	100.0000	100.0000	50.0000	.0000	.0000	25.0000	.0000	.0000	.0000	.0000	.0000	50.0000
	10-HR	66.6667	66.6667	33.3333	.0000	.0000	16.6667	.0000	.0000	.0000	.0000	.0000	33.3333
	12-HR	20.0000	20.0000	10.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	10.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	22.2222	22.2222	11.1111	.0000	.0000	.0000	.0000	3.7037	.0000	.0000	.0000	11.1111
	OVERA	30.7692	30.7692	15.3846	.0000	.0000	4.8077	.0000	1.2821	.0000	.0000	.0000	15.3846
WEDNESDAY	6-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	8-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	10-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	12-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

YEARLY PERCENTAGES BY DAY AND DUR.

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	32.2581	25.0000	.0000
8-HR	25.8065	25.0000	.0000
10-HR	11.2903	16.6667	.0000
12-HR	.0000	4.2857	.0000
14-HR	.0000	.0000	.0000
16-HR	5.6452	5.1587	.0000
OVERA	8.8172	7.4176	.0000

TOTAL PERCENT FOR STATION

8.1431

Table A-15. Percentage of estimated AADT's having relative errors greater than 10% at station 15.

	DURATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUGU	SEP.	OCT.	NOV.	DEC.
MONDAY	6-HR	57.1429	47.6190	57.1429	42.8571	33.3333	17.8571	14.2857	31.4286	28.5714	25.0000	57.1429	38.0952
	8-HR	57.1429	57.1429	57.1429	39.2857	33.3333	32.1429	9.5238	31.4286	39.2857	32.1429	57.1429	38.0952
	10-HR	44.4444	44.4444	44.4444	36.1111	25.9259	11.1111	18.5185	20.0000	22.2222	19.4444	44.4444	29.6296
	12-HR	33.3333	33.3333	33.3333	27.7778	11.1111	8.3333	7.4074	17.7778	16.6667	16.6667	33.3333	22.2222
	14-HR*	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	46.8750	44.7917	46.8750	35.9375	25.0000	16.4063	12.5000	24.3750	25.7813	22.6563	46.8750	31.2500
TUESDAY	6-HR	33.3333	33.3333	26.6667	25.0000	16.6667	8.3333	.0000	8.3333	6.6667	16.6667	33.3333	25.0000
	8-HR	50.0000	50.0000	40.0000	37.5000	25.0000	12.5000	.0000	12.5000	10.0000	25.0000	50.0000	37.5000
	10-HR	66.6667	66.6667	53.3333	50.0000	33.3333	16.6667	.0000	8.3333	13.3333	33.3333	66.6667	50.0000
	12-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	41.6667	41.6667	33.3333	31.2500	20.8333	10.4167	.0000	8.3333	8.3333	20.8333	41.6667	31.2500
WEDNESDAY	6-HR	100.0000	100.0000	100.0000	60.0000	25.0000	.0000	75.0000	100.0000	.0000	25.0000	100.0000	75.0000
	8-HR	100.0000	100.0000	100.0000	60.0000	25.0000	8.3333	25.0000	91.6667	13.3333	25.0000	100.0000	66.6667
	10-HR	100.0000	100.0000	100.0000	60.0000	25.0000	8.3333	8.3333	75.0000	6.6667	25.0000	100.0000	66.6667
	12-HR	75.0000	75.0000	75.0000	45.0000	18.7500	18.7500	.0000	56.2500	10.0000	18.7500	75.0000	56.2500
	14-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	16-HR *	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	OVERA	90.9091	90.9091	90.9091	54.5455	22.7273	11.3636	15.9091	75.0000	9.0909	22.7273	90.9091	63.6364

--- YEARLY PERCENTAGES BY DAY AND DUR. ---

DURATION	MONDAY	TUESDAY	WEDNESDAY
6-HR	37.7778	19.3798	61.2245
8-HR	40.6349	29.0698	57.8231
10-HR	29.8765	37.9845	54.4218
12-HR	21.9753	.0000	42.3469
14-HR	.0000	.0000	.0000
16-HR	.0000	.0000	.0000
OVERA	31.7361	24.0310	51.5770

--- TOTAL PERCENT FOR STATION ---

34.4282

Table A-16. Percentage of estimated AADT's having relative errors greater than 10% at station 16.

* No estimates made: Note: Most stable periods between 12 midnight and 5 a.m.

APPENDIX B

EXPANSION FACTORS AND RECOMMENDED STARTING TIMES

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
1	6	Mon.	2.39	9 a.m., 10 a.m., 11 a.m. 12 N. 1 p.m.
	8	Mon.	1.91	7 a.m., 8 a.m., 9 a.m. 10 a.m., 12 N. 1 p.m.
	10	Mon.	1.53	7 a.m., 8 a.m., 9 a.m 10 a.m., 11 a.m., 12 N.
	12	Mon.	1.36	6 a.m., 7 a.m., 8 a.m. 9 a.m., 10 a.m., 11 a.m. 12 N.
	6	Tue.	2.47	8 a.m., 9 a.m., 10 a.m. 11 a.m., 12 N. 1 p.m.
	8	Tue.	1.89	7 a.m., 8 a.m., 9 a.m. 10 a.m., 11 a.m., 12 N.
	10	Tue.	1.56	6 a.m., 7 a.m., 8 a.m. 9 a.m., 10 a.m.
	6	Wed.	3.17	6 a.m., 7 a.m.
	8	Wed.	-	-*
	10	Wed.	-	- *

* Stable periods are between 5 p.m. and 5 a.m.

Table B-1 : Expansion factors and recommended starting times for station 1.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
2	6	Mon.	2.83	1 p.m., 2 p.m., 3 p.m., 4 p.m.
	8	Mon.	2.32	11 a.m., 12 N. 1 p.m., 2 p.m 3 p.m., 4 p.m.
	10	Mon.	1.57	7 a.m., 8 a.m., 9 a.m. 10 a.m., 11 a.m., 12 N.
	12	Mon.	1.43	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	6	Tue.	2.50	9 a.m., 10 a.m., 11 a.m. 12 N., 1 p.m., 2 p.m.
	8	Tue.	1.96	9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m.
	10	Tue.	1.80	10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m.
	12	Tue.	1.51	9 a.m., 10 a.m., 11 a.m., 12 N.,
	6	Wed.	2.42	12 N., 1 p.m., 2 p.m.
	8	Wed.	1.96	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 p.m., 2 p.m
	10	Wed.	1.74	9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m.
	12	Wed.	1.51	9 a.m., 10 a.m., 11 a.m., 12 N.

Table B-2. Expansion factors and recommended starting times for station 2.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
3	6	Mon.	2.76	7 a.m., 12 N., 1 p.m., 2 p
	8	Mon.	2.17	7 a.m., 12 N., 1 p.m.
	10	Mon.	1.81	7 a.m., 8 a.m., 9 a.m., 11 a.m., 12 N., 1 p.m.
	12	Mon.	1.57	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	6	Tue.	2.78	7 a.m., 1 p.m., 2 p.m.
	8	Tue.	2.27	7 a.m., 12 N., 1 p.m., 2 p
	10	Tue.	1.99	7 a.m., 12 N., 1 p.m., 2 p
	12	Tue.	1.63	7 a.m., 11 a.m., 12 N.
	6	Wed.	2.81	7 a.m., 12 N., 1 p.m., 2 p
	8	Wed.	2.19	7 a.m., 11 a.m., 12 N., 1 ₁
	10	Wed.	1.83	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 ₁
	12	Wed.	1.59	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.

Table B-3: Expansion factors and recommended starting times for station 3.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
4	6	Mon.	3.05	7 a.m.
	8	Mon.	2.31	6 a.m., 7 a.m.
	10	Mon.	1.74	6 a.m., 7 a.m.
	12	Mon.	1.37	6 a.m., 7 a.m.
	6	Tue.	2.69	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 p.m. 2 p.m., 3 p.m.
	8	Tue.	2.06	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12N. 1 p.m., 2 p.m.
	10	Tue.	1.71	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 p.m., 2 p.m.
	12	Tue.	1.46	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	6	Wed.	2.65	8 a.m., 1 p.m., 2 p.m.
	8	Wed.	2.11	7 a.m., 12 N. 1 p.m., 2 p.m.
	10	Wed.	1.70	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m.
	12	Wed.	1.45	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.

Table B-4: Expansion factors and recommended starting times for station 4.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
5	6	Mon.	2.63	9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m., 3 p 4 p.m.
	8	Mon.	2.09	9 a.m., 10 a.m., 11 p.m., 12 N., 1 p.m., 2 p.m., 3 p 4 p.m.
	10	Mon.	1.67	8 a.m., 9 a.m., 10. a.m., 11 a.m., 12 N., 1 p.m., 2 ᵢ
	12	Mon.	1.44	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	6	Wed.	2.76	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 p.m., 2 p.m., 3 p.m., 4 ᵢ
	8	Wed.	2.00	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m.
	10	Wed.	1.63	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	12	Wed.	1.44	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.

Table B-5 : Expansion factors and recommended starting times for station 5.

B-6

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
6	6	Mon.	2.70	9 a.m., 10 a.m., 11 a.m.
	8	Mon.	-*	-*
	10	Mon.	-*	-*
	12	Mon.	-*	-*
	6	Tue.	2.57	7 a.m., 12 N., 1 p.m.
	8	Tue.	1.94	10 a.m., 11 a.m., 12 N.
	10	Tue.	1.65	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	12	Tue.	1.48	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.
	6	Wed.	2.44	12 N.
	8	Wed.	1.42	11 a.m.
	10	Wed.	1.67	7 a.m., 10 a.m., 11 a.m., 12 N.
	12	Wed.	1.47	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N.

* Stable periods are between 5 p.m. and 5 a.m.

Table B-6 : Expansion factors and recommended starting times for station 6.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
7	6	Mon.	2.57	8 a.m., 9 a.m., 10 a.m. 11 a.m.
	8	Mon.	1.85	8 a.m., 9 a.m., 10 a.m. 11 a.m.
	10	Mon.	-*	-*
	12	Mon.	-*	-*
	6	Tue.	2.60	7 a.m., 10 a.m., 11 a.m.
	8	Tue.	1.97	7 a.m., 8 a.m., 9 a.m.
	10	Tue.	1.64	7 a.m.
	6	Wed.	2.55	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N., 1 p.m., 2 p.m., 3 p.m.
	8	Wed.	1.91	8 a.m., 9 a.m., 10 a.m., 11 a.m., 12 N. 1 p.m.
	10	Wed.	1.53	8 a.m., 9 a.m., 10 a.m., 11 a.m.
	12	Wed.	1.37	7 a.m., 8 a.m., 9 a.m., 10 a.m., 11 a.m.

* Stable periods are between 5 p.m., and 5 a.m.

Table B-7: Expansion factors and recommended starting times for station 7.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
8	6	Mon.	3.14	3 p.m., 4 p.m.
	8	Mon.	2.80	3 p.m., 4 p.m.
	10	Mon.	2.20	2 p.m.
	6	Tue.	2.97	6 a.m.
	8	Tue.	-*	-*
	10	Tue.	-*	-*
	12	Tue.	-*	-*
	6	Wed.	-*	-*
	8	Wed.	-*	-*
	10	Wed.	-*	-*
	12	Wed.	-*	-*

* Stable periods are between 5 p.m. and 5 a.m.

Table B-8: Expansion factors and recommended starting times for station 8.

Station	Count Duration (Hrs.)	Day of Week	Expansion Factor	Recommended Starting Times
9	6	Mon.	2.51	7 a.m.
	8	Mon.	1.95	6 a.m.
	10	Mon.	-*	-*
	12	Mon.	-*	-*
	6	Tue.	2.56	7 a.m.
	8	Tue.	1.99	6 a.m.
	10	Tue.	-*	-*
	12	Tue.	-*	-*
	6	Wed.	2.62	1 p.m.
	8	Wed.	2.14	1 p.m.
	10	Wed.	-*	-*
	12	Wed.	-*	-*

*   Stable periods are beteen 5 p.m. and 6 a.m.

Table B-9.   Expansion factors and recommended starting times for station 9.