Research Report
UKTRP-86-12

DOCUMENTATION FOR
1986 WEIGHT-DISTANCE TAX ANALYSES
',   USING LOTUS 1-2-3

by

Herbert F. Southgate
Chief Research Engineer

Kentucky Transportation Research Program
College of Engineering
University of Kentucky
Lexington, Kentucky

In cooperation with

Kentucky Transportation Cabinet
Commonwealth of Kentucky

and

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US Department of Transportation

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This program was written for a personal computer with 640k
memory. Two disks are required. The output exceeds the 360k
capacity of an individual disk. Thus, the program is written to
make the calculations to create the main body of data for Tables
10 through 12 (reference, "Allocation of Transportation Costs To
Users", J. E. Black and J. G. Pigman, Research Report UKTRP-81-
22, Kentucky Transportation Research Program, College of
Engineering, University of Kentucky, Lexington, KY). The program
asks the user to place a new disk in Drive B and then loads the
"input" data to complete Tables 10 and 12 into a file on Disk 2.
When Disk 2 is loaded, the program retrieves the files and loads
them in their proper locations within the spreadsheet. Table 11
is obtained by converting data in Table 10 to percentages.
Weighted statewide averages are obtained by multiplying data for
each highway system by the ADT for that system; the resulting
products are summed, then divided by the total ADT for all
highway systems. This weighting procedure is used to obtain the
statewide averages given in the last lines of Tables 11 and 12.

With time, average tire pressures for bias ply and radial tires
may change. Thus, the input for tire pressures, located in
Cells O35 and R35, respectively, should be revised as needed. In
addition, the percentages of bias ply and radial tires in use on
trucks will probably change and should be entered in Cells U35
and V35, respectively.

The average daily traffic (ADT) and number of miles for each
highway system will change and should be entered in Tables U76 to
U92 and W76 to W92, respectively.

Classification data files should be analyzed to obtain either the
latest classification data or an average over time. In either
case, the NUMBER of vehicles in each classification for each
highway system shall be entered in Table 3 located in Cells A71
to S92 (upper left to lower right corners). Lotus 1-2-3 will
change the data to the required percentages.

Axleload data will be obtained from analyses of loadometer tapes.
The NUMBER of counts in each weight group by vehicle
classification shall be entered in Table 4 located in Cells A96
to F117 (upper left to lower right corners). Lotus 1-2-3 will
change the data to the required percentages.

The number of axleloads in each weight group for each vehicle
classification were assumed for the analyses made in February
1986. The values may be revised if better data become available.
One suggestion would be to analyze loadometer tapes to obtain

i

average values for each weight group. Load these data into the table located in Cells A1 to U16 (for classifications 2A4T, 2A6T, S3, S4, C3, C4, C5, and C6) and A18 to N32 (for C7, DB5, and DB6).

When all data have been loaded, press the return key to make the program run. When the data to fill the body of Tables 10 and 12 have been calculated, the program will stop, and the user will be required to change disks in Drive B. After the new disk is in Drive B, press the return key, and the necessary data will be transferred to the new disk. Final calculations are completed to finish Tables 10, 11, and 12. These tables will be printed without further aid from the user.

When loading data, entries may be made either in rows or columns using arrow keys to move to the next cell. Press the return key only when all data for that table has been entered.

Note that in Table 4 there are no data for the vehicle classification "SU2A4T". These vehicles are combined with pickup trucks and the number must be obtained from older data containing actual counts for both types. This proportioning was used to provide the percentage of vehicles for SU2A4T. No data are available at this time giving the number of SU2A4T trucks in each weight group. Therefore, the same distribution is used for SU2A6T trucks contained in the work table to calculate the percentage distribution for Table 4 format.

There is a peculiarity of LOTUS 1-2-3 that has an impact on this program. Some formulas involve dividing by some value in a particular cell. If a cell becomes the denominator in a formula for another cell and the original cell requires input data, lack of input data to that cell will cause LOTUS 1-2-3 to place an "ERR" into the output and will destroy any data in other cells requiring that cell as input. To avoid this problem, enter the number "0" into the cell prior to pressing the return key and the program will operate correctly.

Descriptions of the tables and data on Disks 1 and 2 follows.

DISK 1
==

```
        TABLE              INPUT
        CORNERS            DATA
    _____   _____

    UPPER   LOWER     YES   NO    DESCRIPTION
    _____ _____   ____  ____  _____
```

UPPER	LOWER	YES	NO	DESCRIPTION
A1	U16	X		AXLELOADS FOR VEHICLE CLASSIFICATIONS AND WEIGHT GROUPS
A18	N32	X		(CONTINUES TO FORM TWO BLOCKS OF DATA) VALUES CURRENTLY IN THESE CELLS ARE ESTIMATED DISTRIBUTIONS FOR MAXIMUM TOTAL LOAD WITHIN THE WEIGHT GROUP. BETTER ESTIMATES MIGHT BE OBTAINED THROUGH ANALYSES OF LOADOMETER TAPES.
A71	S92	X		TABLE 3: VOLUME OF TRAFFIC STREAM BY VEHICLE CLASSIFICATION. VALUES COME FROM CLASSIFICATION TAPES ISSUED BY DIVISION OF FACILITIES PLANNING.
A96	P116	X		TABLE 4: NUMBER OF TRUCKS BY WEIGHT GROUP. VALUES COME FROM ANALYSES OF LOADOMETER TAPES.
U76	U92	X		TABLE 1: ADT BY HIGHWAY SYSTEM
W76	W92	X		TABLE 1: MILEAGE BY HIGHWAY SYSTEM
Q35	Q35	X		TIRE CONTACT PRESSURE FOR BIAS PLY TRUCK TIRES = (0.9) x (AVERAGE INFLATION PRESSURE)
R35	R35	X		TIRE CONTACT PRESSURE FOR RADIAL TRUCK TIRES = (0.9) x (AVERAGE INFLATION PRESSURE)
U35	U35	X		PERCENTAGE OF BIAS PLY TIRES OF TOTAL TRUCK TIRES
V35	V35	X		PERCENTAGE OF RADIAL TIRES OF TOTAL TRUCK TIRES
P18	T23		X	REGRESSION COEFFICIENTS FOR DAMAGE FACTORS FOR LOAD ACCORDING TO NUMBER OF TIRES IN GROUP. ALSO CONTAINS ADJUSTMENT FACTORS FOR UNEVEN LOAD DISTRIBUTIONS ON AXLES WITHIN THE GROUP.
V1	Y33		X	REGRESSION COEFFICIENTS FOR TIRE PRESSURE ADJUSTMENT FACTORS AS A FUNCTION OF THE NUMBER OF TIRES IN THE GROUP. CELLS 2-9

TABLE CORNERS		INPUT DATA		
UPPER	LOWER	YES	NO	DESCRIPTION
			, ,	ARE FOR TWO-TIRED AXLES, 10-17 ARE FOR FOUR-TIRED SINGLE AXLE, 18-25 ARE FOR EIGHT-TIRED TANDEMS, AND 26-33 ARE FOR TWELVE-TIRED TRIDEMS.
P25	T29		X	ADJUSTMENT FACTORS FOR TIRE PRESSURE IN BIAS PLY TRUCK TIRE BY HIGHWAY SYSTEM AND NUMBER OF TIRES. INTERSTATE SYSTEM ASSUMES THE FACTORS CORRESPONDING TO 8" AC, PRIMARY ASSUMED AS 7" AC, SECONDARY ASSUMED AS 6" AC, AND NON-FEDERAL AID ASSUMED AS 5" AC. EQUATION TAKES THE FORM $LOG(AF) = A + LOG(TP) + C(LOG(TP))^2$
P31	T34		X	ADJUSTMENT FACTORS FOR TIRE PRESSURE IN RADIAL TRUCK TIRE BY HIGHWAY SYSTEM AND NUMBER OF TIRES. SEE NOTE FOR BIAS TIRES.
AT17	AX23		X	ADJUSTMENT FACTORS COMBINING FACTORS FOR UNEVEN LOAD DISTRIBUTION AND PERCENT OF RADIAL AND BIAS TIRES ON HIGHWAY, BY SYSTEM AND NUMBER OF TIRES IN GROUP. THE EQUATION IS

A COMBINED ADJUSTMENT = (ADJUSTMENT FACTOR FOR UNEVEN LOADING)*(PERCENT RADIALS*ADJUSTMENT FACTOR FOR TIRE PRESSURE IN RADIALS + PERCENT BIAS TIRES*ADJUSTMENT FACTOR FOR TIRE PRESSURE IN BIAS TIRES)

UPPER	LOWER	YES	NO	DESCRIPTION
AU24	AU24		X	CARS, PICKUPS, AND BUSES (VALUE = 1.0).
A37	L51		X	DAMAGE FACTORS FOR VARIOUS WEIGHT GROUPS WITHIN VEHICLE CLASSIFICATION (EXCEPT LAST TWO GROUPS OF AXLES OF DOUBLE-BOTTOM TRUCKS) FOR INTERSTATE SYSTEM (8" AC)
AU34	AV51		X	DAMAGE FACTORS FOR LAST TWO GROUPS OF AXLES FOR DOUBLE-BOTTOM TRUCKS FOR INTERSTATE SYSTEM
N37	Y51		X	DAMAGE FACTORS FOR VARIOUS WEIGHT GROUPS WITH VEHICLE CLASSIFICATION (EXCEPT LAST TWO GROUPS OF AXLES OF DOUBLE-BOTTOM TRUCKS) FOR FEDERAL-AID PRIMARY SYSTEM (7" AC)
AW34	AX51		X	DAMAGE FACTORS FOR LAST TWO GROUPS OF AXLES FOR DOUBLE-BOTTOM TRUCKS USING FEDERAL-AID PRIMARY SYSTEM

TABLE CORNERS		INPUT DATA		
UPPER	LOWER	YES	NO	DESCRIPTION
A53	L67		X	DAMAGE FACTORS FOR VARIOUS WEIGHT GROUPS WITHIN VEHICLE CLASSIFICATION (EXCEPT LAST TWO GROUPS OF AXLES OF DOUBLE-BOTTOM TRUCKS) FOR FEDERAL-AID SECONDARY SYSTEM (6" AC)
AU53	AV67		X	DAMAGE FACTORS FOR LAST TWO GROUPS OF AXLES OF DOUBLE-BOTTOM TRUCKS FOR FEDERAL-AID SECONDARY SYSTEM
AW53	AX67		X	DAMAGE FACTORS FOR VARIOUS WEIGHT GROUPS WITHIN VEHICLE CLASSIFICATION (EXCEPT FOR LAST TWO GROUPS OF AXLES OF DOUBLE-BOTTOM TRUCKS) ON NON-FEDERAL-AID SYSTEM (5" AC)
C34	C34		X	DAMAGE FACTOR FOR STANDARD AND COMPACT AUTOMOBILES
F34	F34		X	DAMAGE FACTOR FOR SUBCOMPACT AUTOMOBILES
I34	I34		X	DAMAGE FACTOR FOR PICKUP TRUCKS
L34	L34		X	DAMAGE FACTOR FOR BUSES
DA126	DT146		X	TABLE 3 (FROM A71 TO S92) CONVERTED TO PERCENT WITHIN EACH VEHICLE CLASSIFICATION
A120	P140		X	TABLE 4 (FROM A96 TO P117) NUMBER OF TRUCKS WITHIN WEIGHT GROUP CONVERTED TO PERCENT WITHIN EACH VEHICLE CLASSIFICATION

THE FOLLOWING TABLES ARE "WORK AREAS" TO OBTAIN REQUIRED DATA TO PRODUCE EACH LINE OF TABLES 10 AND 12. THE EQUATION FOR EACH CELL IS

EAL = ADT x (% VEHICLE CLASSIFICATION) * (% WITHIN WEIGHT GROUP) * (DAMAGE FACTOR FOR AXLE GROUP WITHIN WEIGHT GROUP FOR THAT VEHICLE CLASSIFICATION) -- EQUATION SUMS THE CALCULATIONS FOR EACH AXLE GROUP USING THE ABOVE FORMAT.

AA1	AP23		X	INTERSTATE RURAL 4-LANE, LINE 1: ROW AA22-AP22 OBTAINED BY SUMMING ALL WEIGHT GROUPS WITHIN THE SAME VEHICLE CLASSIFICATION. ROW AA23-AP23 OBTAINED BY SUMMING ACROSS ALL VEHICLE CLASSIFICATIONS WITHIN THE SAME WEIGHT GROUP. TRANSFER ROW AA22-AP22 TO ROW S107-KL107 IN TABLE 10, ROW AA23-AP23 TO ROW CA107-CV107 IN TABLE 12.

TABLE CORNERS		INPUT DATA		
UPPER	LOWER	YES	NO	DESCRIPTION

UPPER	LOWER	YES	NO	DESCRIPTION
BA1	BP23		X	INTERSTATE RURAL 6-LANE, LINE 2: TRANSFER ROW BA22-BP22 TO ROW S108-KL108 IN TABLE 10, ROW BA23-BP23 TO ROW CA108-CV108 IN TABLE 12
CA1	CP23		X	INTERSTATE URBAN 4-LANE, LINE 3: TRANSFER ROW CA22-CP22 TO ROW S109-KL109 IN TABLE 10, ROW CA23-CP23 TO ROW CA109-CV109 IN TABLE 12
DA1	DP23		X	INTERSTATE URBAN 6-LANE, LINE 4: TRANSFER ROW DA22-DP22 TO ROW S110-KL110 IN TABLE 10, ROW DA23-DP23 TO ROW CA110-CV110 IN TABLE 12
AA26	AP48		X	FEDERAL-AID PRIMARY RURAL 2-LANE, LINE 5: TRANSFER ROW AA47-AP47 TO ROW S111-KL111 IN TABLE 10, ROW AA48-AP48 TO ROW CA111-CV111 IN TABLE 12
BA26	BP48		X	FEDERAL-AID PRIMARY RURAL 4-LANE, LINE 6: TRANSFER ROW BA47-BP47 TO ROW S112-KL112 IN TABLE 10, ROW BA48-BP48 TO ROW CA112-CV112 IN TABLE 12
CA26	CP48		X	FEDERAL-AID PRIMARY URBAN 2-LANE, LINE 7: TRANSFER ROW CA47-CP47 TO ROW S113-KL113 IN TABLE 10, ROW CA48-CP48 TO ROW CA113-CV113 IN TABLE 12
DA26	DP48		X	FEDERAL-AID PRIMARY URBAN 2-LANE, LINE 8: TRANSFER ROW DA47-DP47 TO ROW S114-KL114 IN TABLE 10, ROW DA48-DP48 TO ROW CA114-CV114 IN TABLE 12
AA51	AP72		X	FEDERAL-AID SECONDARY URBAN 2-LANE, LINE 9: TRANSFER ROW AA71-AP71 TO ROW S115-KL115 IN TABLE 10, ROW AA72-AP72 TO ROW CA115-CV115 IN TABLE 12
BA51	BP72		X	FEDERAL-AID SECONDARY URBAN 4-LANE, LINE 10: TRANSFER ROW BA71-BP71 TO ROW S116-KL116 IN TABLE 10, ROW BA48-BP48 TO ROW CA116-CV116 IN TABLE 12
CA51	CP72		X	FEDERAL-AID SECONDARY RURAL 2-LANE, LINE 11: TRANSFER ROW CA71-CP71 TO ROW S117-KL117 IN TABLE 10, ROW CA72-CP72 TO ROW CA117-CV117 IN TABLE 12

TABLE CORNERS		INPUT DATA		
UPPER	LOWER	YES	NO	DESCRIPTION
DA51	DP72		X	FEDERAL-AID SECONDARY RURAL 2-LANE, LINE 12: TRANSFER ROW DA71-DP71 TO ROW S118-KL118 IN TABLE 10, ROW DA72-DP72 TO ROW CA118-CV118 IN TABLE 12
AA75	AP97		X	NON-FEDERAL-AID RURAL 2-LANE, LINE 13: TRANSFER ROW AA96-AP96 TO ROW S119-KL119 IN TABLE 10, ROW AA97-AP97 TO ROW CA119-CV119 IN TABLE 12
BA75	BP97		X	NON-FEDERAL-AID RURAL 4-LANE, LINE 14: TRANSFER ROW BA96-BF96 TO ROW S120-KL120 IN TABLE 10, ROW BA97-BF97 TO ROW CA120-CV120 IN TABLE 12
CA75	CP97		X	NON-FEDERAL-AID URBAN 2-LANE, LINE 15: TRANSFER ROW CA96-CP96 TO ROW S121-KL121 IN TABLE 10, ROW CA97-CP97 TO ROW CA121-CV121 IN TABLE 12
DA75	DP97		X	NON-FEDERAL-AID URBAN 4-LANE, LINE 16: TRANSFER ROW DA96-DP96 TO ROW S122-KL122 IN TABLE 10, ROW DA97-DP97 TO ROW CA122-CV122 IN TABLE 12
S101	AL122		X	TABLE 10, COMBINE LINES 1-16 FROM INDIVIDUAL TABLES ABOVE
CA101	CW122		X	TABLE 12, COMBINE LINES 1-16 FROM INDIVIDUAL TABLES ABOVE
BA101	BE141		X	MACRO COMMANDS

DISK 2

TABLE CORNERS		INPUT DATA		
UPPER	LOWER	YES	NO	DESCRIPTION
			'	DATA FOR TABLES 10 AND 12 ARE TRANSFERRED FROM DISK 1 TO DISK 2. WEIGHTED MEANS ARE CALCULATED AND TABLES ARE SPLIT FOR OUTPUT.
A1	T24		X	TABLE 10 AS TRANSFERRED FROM DISK 1
A28	L51		X	TABLE 10 FROM M1 TO T24 TRANSFERRED FOR OUTPUT PURPOSES
A1	L51		X	TABLE 10 OUTPUT FORMAT
AA1	AT24		X	TABLE 11. TABLE 10 CONVERTED TO PERCENT
BA1	BT24		X	WORK AREA: (EACH CELL IN TABLE 11) x (ADT BY RESPECTIVE HIGHWAY SYSTEM) TO CALCULATE WEIGHTED STATE-WIDE MEAN TO GO IN ROW AA23 TO AT23 OF TABLE 11
AA1	AL51		X	TABLE 11 OUTPUT FORMAT
CA1	CW24		X	TABLE 12 AS TRANSFERRED FROM DISK 1
DA1	DW24		X	WORK AREA: (EACH CELL IN TABLE 12) x (ADT BY RESPECTIVE HIGHWAY SYSTEM) TO CALCULATE WEIGHTED STATEWIDE-MEANS TO GO IN ROW CA23 TO CW23 OF TABLE 12
CA1	CN51		X	TABLE 12 OUTPUT FORMAT
DA27	DA43		X	MACRO COMMANDS

DISK #1

Column headers (top): A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | B A B C D E F G H I J K L M N O P Q R S T

Row numbers (left margin): 1–51 plus A

TITLE: AXLELOADS PER VEHICLE CLASS & WT. GP.

CAT 2	AXT	S3	S4	C3	C4	C5	C6

C7	DB5	DB6

Right vertical labels: INTERSTATE / FEDERAL-AID PRIMARY / FEDERAL-AID SECONDARY / NON-FEDERAL AID

TABLE D.F.
A B C AF

BIAS PLY
AF FOR T.P. **D**

RADIAL PLY
AF FOR T.P. **E**

T.P. | D E | % | D E

DAMAGE FACTORS FOR INTERSTATE PAVEMENTS

DAMAGE FACTORS FOR FEDERAL-AID PRIMARY

TABLE 10 LINE 1: INTER. 4 LANE

INTERSTATE
RURAL 4 LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. CAT. (HORIZ.)

TABLE 10 LINE 5 F.A.P

FEDERAL-AID-PRIMARY
RURAL 2 LANE

Σ VEH. CLASS. (VERTICAL)
Σ WT. CAT. (HORIZ.)

TABLE 10 LINE 9

TABLE 10 LINE 2

INTERSTATE
RURAL 6 LANE

Σ VEH. CLASS. (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 10 LINE 6

FEDERAL-AID-PRIMARY
RURAL 4 LANE

Σ VEH. CLASS. (VERTICAL)
Σ WT. GP. (HORIZ)

TABLE 10 LINE 10

TP & LOAD DIST. AF COMB.
INTER FAP FAS NFA

LAST 2 AXLES
D5 D6 D5 D6

INTERSTATE / FEDERAL-AID-PRIMARY

ABCDEFGHIJKLM | NOPQRSTUVWXYZ | ABCDEFGHIJKLMNOPQRSTUVWXYZ | ABCDEFGHIJKLMNOPQRST

TABLE 10 LINE 9

DAMAGE FACTORS FOR FEDERAL-AID SECONDARY (FIRST 3 AXLES)

DAMAGE FACTORS FOR NON-FEDERAL-AID (FIRST 3 AXLES)

FEDERAL-AID-SECONDARY URBAN 2 LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. CAT. (HORIZ)

FAS NFA

FEDERAL AID-SECONDARY | NON-FEDERAL-AID

DISK #1

TABLE 10 LINE 10

FEDERAL-AID-SECONDARY URBAN-4 LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. CAT. (HORIZ.)

TABLE 3 VOLUME OF TRAFFIC BY STREAM

SYSTEM	RURAL/URBAN	LANES																
I	R	4																
	U	4																
PAP	R	2																
		4																
	U	2																
		4																
FAS	U	2																
		4																
	R	2																
		4																
NFA	R	2																
		4																
	U	2																
		4																

ADT   MILES

TABLE 10 LINE 13

NON-FEDERAL-AID RURAL 2-LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 10 LINE 14

NON-FEDERAL-AID RURAL 4-LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 4. NO. OF TRUCKS BY WEIGHT CATEGORY

DISK #1

TABLE 4. NO. OF TRUCKS

% VEH. CLASS (VERTICAL)

TABLE 4. NO. CONVERTED TO PERCENT BY WEIGHT CATEGORY

% VERTICAL

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

DISK #1

TABLE 10   LINE 3

INTERSTATE

URBAN 4 LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 10   LINE 4

INTERSTATE

URBAN 6 LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 10   LINE 7

FEDERAL-AID-PRIMARY

URBAN 2-LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

TABLE 10   LINE 8

FEDERAL-AID-PRIMARY

URBAN 4 LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
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75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

C

TABLE 10 LINE 11

FEDERAL-AID SECONDARY

RURAL 2-LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZONTAL)

D

TABLE 10 LINE 12

FEDERAL-AID-SECONDARY

RURAL 4 LANE

Σ VEH. CLASS (VERTICAL)
Σ WT. GP (HORIZ.)

DISK #1

TABLE 10 LINE 15

NON-FEDERAL-AID

URBAN 2 LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP (HORIZ)

TABLE 10 LINE 16

NON-FEDERAL-AID

URBAN 4 LANES

Σ VEH. CLASS (VERTICAL)
Σ WT. GP. (HORIZ.)

DISK #1

TABLE 12 % RESPONSIBILITY BY WEIGHT

% RESPONSIBILITY BY WEIGHT

TABLE 3 PERCENT OF TRAFFIC STREAM

% VEHICLES

Column headers (left section): A B C D E F G H I J K L M N O P Q R S T U V W X Y Z **A** A B C D E F G H I J K L M N O P Q R S T U V W X Y Z **B** A B C D E F G H I J K L M N O P Q R S T

TABLE 10   DAILY SAL

	SYSTEM	RURAL or URBAN	# LANES	SED. CARS	SML CARS													
1																	
2	= =																
3																	
4					P	S2	S	S	C	C	C	C	C	B	D	
5					R	1T	6T	3	Y	3	4	5	6	7	8	C B 8	D B 8
6																	Σ
7	I	R	4														
8			6														
9		U	4														
10			6														
11	FAP	R	2														
12			4														
13		U	2														
14	FAS	U	2														
15			4														
16		R	2														
17			4														
18	NFA	R	2														
19			4														
20		U	2														
21			4														
22																	
23	TOTAL																Σ

TRANSFER CALCULATIONS TO AREA BELOW FOR OUTPUT

Narrow table: | N | NFA | FAS | FAP | I | TDA |

TABLE 11   % DAILY SAL

	SYSTEM	RURAL or URBAN	# LANES	SED. CARS	SML. CARS													
1																	
2	= =																
3																	
4					P	S2	S	S	C	C	C	C	C	B	D	
5					R	1T	6T	3	Y	3	4	5	6	7	8	C B 8	D B 8
6																	Σ
7	I	R	4														
8																	
9		U	4														
10																	
11	FAP	R	2														
12			4														
13		U	2														
14			4														
15	FAS	U	2														
16			4														
17		R	2														
18			4														
19	NFA	R	2														
20		U	2														
21			4														
22																	
23	AVG. %																

TRANSFER CALCULATIONS TO AREA BELOW FOR OUTPUT

TABLE 11

WORK AREA:

$$\Sigma = (ADT)(TABLE\ 11)$$

Transfer % Values to:

| Σ | ↑ BE 23 thru BL 23   ↓ BE 50 thru BL 50 |

DISK #2

TABLE 10 CONT'D.

	SYSTEM	RURAL or URBAN	# LANES	C3	C4	C5	C6	C7	C B 8	D B 8	Σ
28											
29	= = = = = = = = =										
30											
31											
32					C	C	C	C	C	D B 8	
33					3	4	5	6	7	8	Σ
34	I	R	4								
35			6								
36		U	4								
37			6								
38	FAP	R	2								
39			4								
40		U	2								
41			4								
42	FAS	U	2								
43			4								
44		R	2								
45			4								
46	NFA	R	2								
47			4								
48		U	2								
49			4								
50	TOTAL										
51											

TABLE 11 CONT'D

	SYSTEM	RURAL or URBAN	# LANES	C3	C4	C5	C6	C7	C B 8	D B 8	Σ
				C3	C4	C5	C6	C7	C B 8	D B 8	Σ
	I	R	4								
			6								
		U	4								
			6								
	FAP	R	2								
			2								
		U	2								
			4								
	FAS	U	2								
		R	2								
			4								
	NFA	R	2								
			4								
		U	2								
			4								
	AVG %										

"TAB 12"

	SYSTEM	RURAL or URBAN	# LANES	C	P C	B W R 6	10	14	18	22	26	30	34	42	46	54	60	64	68
	I	R	4																
		U	4																
			6																
	FAP	R	2																
			4																
		U	2																
			4																
	FAS	U	2																
			4																
		R	2																
			4																
	NFA	R	2																
			4																
		U	2																
			4																

"TAB 12"

blank

WORK AREA

TABLE 12

$\Sigma = (\text{TABLE 12})(\text{ADT})$

TABLE 12 % DAILY EAL BY WEIGHT GROUP

TRANSFER CALCULATIONS
TO AREA BELOW
FOR OUTPUT

TABLE 12 Cont'D.

DISK #2