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16. Abstract

The Texas Travel Demand Package is a series of computer programs to generate, distribute, and assign roadway trips. The Texas Large Network Assignment Models is a collection of computer programs designed to assign traffic to transportation networks; it is one part of the Texas Travel Demand Package. Several special features are available in the Texas Large Network Assignment Models in addition to the usual programs regarding the assignment of traffic to minimum time paths, such as self-balancing assignment, capacity-restraint assignment, incremental assignment, corridor intercepts, travel routes, selected links, and subarea windowing and subarea focusing assignment techniques.

Since the Texas Large Network Assignment Models can be used to accomplish various jobs, the Models output a number of different tables. This writeup describes these various tables and tells how to read them. This report begins with a general discussion of the objectives of evaluating a traffic assignment output. Various steps of evaluation assignment output are discussed. The report then lists the designators and names of the output tables. Finally, the report contains a detailed discussion of the various tables including the following sequence: purpose, how to read, comments, how to use, and sample output tables.

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HOW TO READ THE OUTPUT TABLES OF THE TEXAS LARGE NETWORK ASSIGNMENT MODELS

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Texas Travel Demand Package

Research Report Number 947-2

Research Study Number 2-10-88-947

Sponsored by

Texas State Department of Highways and Public Transportation

Texas Transportation Institute
The Texas A&M University System
College Station, Texas

May 1990

METRIC (SI*) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	2.54	millimetres	mm
ft	feet	0.3048	metres	m
yd	yards	0.914	metres	m
mi	miles	1.61	kilometres	km
AREA				
in²	square inches	645.2	millimetres squared	mm²
ft²	square feet	0.0929	metres squared	m²
yd²	square yards	0.836	metres squared	m²
mi²	square miles	2.59	kilometres squared	km²
ac	acres	0.395	hectares	ha
MASS (weight)				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams	Mg
VOLUME				
fl oz	fluid ounces	29.57	millilitres	mL
gal	gallons	3.785	litres	L
ft³	cubic feet	0.0328	metres cubed	m³
yd³	cubic yards	0.0765	metres cubed	m³

NOTE: Volumes greater than 1000 L shall be shown in m³.

TEMPERATURE (exact)

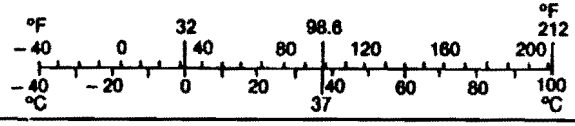
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimetres	0.039	inches	in
m	metres	3.28	feet	ft
m	metres	1.09	yards	yd
km	kilometres	0.621	miles	mi
AREA				
mm²	millimetres squared	0.0016	square inches	in²
m²	metres squared	10.764	square feet	ft²
km²	kilometres squared	0.39	square miles	mi²
ha	hectores (10 000 m²)	2.53	acres	ac
MASS (weight)				
g	grams	0.0353	ounces	oz
kg	kilograms	2.205	pounds	lb
Mg	megagrams (1 000 kg)	1.103	short tons	T
VOLUME				
mL	millilitres	0.034	fluid ounces	fl oz
L	litres	0.264	gallons	gal
m³	metres cubed	35.315	cubic feet	ft³
m³	metres cubed	1.308	cubic yards	yd³

TEMPERATURE (exact)

°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



These factors conform to the requirement of FHWA Order 5190.1A.

* SI is the symbol for the International System of Measurements

ABSTRACT

The Texas Travel Demand Package is a series of computer programs to generate, distribute, and assign roadway trips. The Texas Large Network Assignment Models is a collection of computer programs designed to assign traffic to transportation networks; it is one part of the Texas Travel Demand Package. Several special features are available in the Texas Large Network Assignment Models in addition to the usual programs regarding the assignment of traffic to minimum time paths, such as self-balancing assignment, capacity-restraint assignment, incremental assignment, corridor intercepts, travel routes, selected links, and subarea windowing and subarea focusing assignment techniques.

Since the Texas Large Network Assignment Models can be used to accomplish various jobs, the Models output a number of different tables. This writeup describes these various tables and tells how to read them.

This report begins with a general discussion of the objectives of evaluating a traffic assignment output. Various steps of evaluation assignment output are discussed. The report then lists the designators and names of the output tables. Finally, the report contains a detailed discussion of the various tables including the following sequence: purpose, how to read, comments, how to use, and sample output tables.

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INTRODUCTION

Purpose

The Texas Travel Demand Package is a series of computer programs to generate, distribute, and assign roadway trips. One part of the package, the Texas Large Network Assignment Models, outputs a number of different tables. This writeup describes these various tables and tells how to read them.

Organization

This report begins with a general discussion of the objectives of evaluating a traffic assignment output. Various steps of evaluation assignment output are discussed. The report then lists the designators and names of the output tables. Finally, the report contains a detailed discussion of the various tables including the following sequence: purpose, how to read, comments, how to use, and sample output tables.

TEXAS LARGE NETWORK ASSIGNMENT MODELS

Introduction

Traffic assignment is a technique which has been developed to aid future transportation planning in the evaluation of the transportation system and/or land-use alternatives. The Texas Large Network Assignment Models is a collection of computer programs in five load modules designed to assign traffic to transportation networks.

Features

Several special features are available in the Texas Large Network Assignment Models in addition to the usual programs regarding the assignment of traffic to minimum time paths.

* Self-Balancing: to improve the agreement of assigned volumes with counted volumes.
* Capacity-Restraint: to produce multiple path assignments using one of two different impedance adjustments.
* Incremental: to produce multiple path assignments based on link impedances for four 25 percent increments from a table look-up.
* Corridor Intercepts: to obtain corridor analysis summaries.
* Travel Routes: to obtain volume profile comparisons and/or plots.
* Selected Links: to perform a special analysis of all traversing movements.
* Subarea Windowing or Focusing: to perform a subarea analysis.

Accomplishment

The Texas Large Network Assignment Models can be used to accomplish the following:

* Prepare a printed description of an assignment network.
* Revise or update an assignment network.
* Prepare trip records for traffic assignment.
* Prepare a printed description of trip interchanges.
* Trace any or all possible minimum paths.
* Prepare a printed description of any or all minimum paths.
* Assign traffic to an assignment network.
* Prepare a printed description of assigned volumes including turning movements.
* Prepare mileage and vehicle-mile summaries by functional class and jurisdiction.
* Balance assigned volumes with counted volumes.
* Balance assigned volumes with capacities by one of two different impedance adjustment functions.
* Prepare corridor volume summaries.
* Prepare interchange reports for selected links by zone or sector.
* Summarize assigned volumes along travel routes.
* Print volume profiles along travel routes.
* Compare assigned volumes with previous assignments.
* Compare assigned volumes with traffic counts.
* Compare assigned volumes with link capacities.
* Expand interchanges using the "Fratar" technique.
* Sum trip generations for each zone.
* Add trip matrices together.
* Prepare a subarea network by windowing.
* Prepare a subarea trip matrix by windowing.
* Prepare a table of equals for collapsing a trip matrix for subarea focusing.
* Assign traffic using a subarea focusing trip matrix.

ASSIGNMENT EVALUATION OBJECTIVES

Assignment

Traffic assignment is the modeling process by which the previously generated and distributed trips are placed on the roadway network. Evaluating an assignment should consist of steps designed to assess how good the modeled assignment is.

Evaluation	Comparison of the modeled assignment volumes with counted volumes is a basis for evaluating the validity of the assignment. Unfortunately, no such comparisons can be made for future year assignments, since future year volumes are not known. However, other types of comparisons can be made to determine if future year assignments are plausible.
Sequence	The present year assignment should be found acceptable before the evaluation of the future year assignment is made.
Check Inputs	The initial steps in assignment evaluation are those of checking the input data. Although this can be a tedious task, it is likely that errors have crept into various network attribute descriptions. Unless the input is checked and corrected, the "garbage in - garbage out" problems will remain.
Check Aggregates	The modeled aggregated values, such as total miles of predicted travel against actual travel or predicted versus surveyed mean trip length, should be compared with the actual or surveyed values. If the values are similar, it does not necessarily follow that the assignment is valid. But if the comparisons are not acceptable, the assignments are suspect.
Check Parts	Make analyses of individual items for the first known current or past years, then for the projected year. These items include but are not limited to volumes across cutlines, or volume/capacity (v/c) relationships on various links.

ANALYSIS TOOLS

Certain statistical analyses can be used to compare and evaluate output assignments. These statistical tests furnish a greater degree of objectivity to the evaluation process. One such group of tests is regression analysis.

USING REGRESSIONS

Purpose

Some of the trip assignment analysis tables present the results of linear regressions. These regressions are used to compare two sets of data or numerical values, and determine how well they agree.

Objective

The simple linear regression procedure attempts to fit a straight line to a set of data points. The line is fit to minimize the deviation in the vertical or the "Y" direction between the data points and the line.

Example

One such comparison examines the agreement of the predicted assignments with the actual counted volumes. To see how this works, examine the following example network containing four links.

Example Data

Link	1	2	3	4
Actual count	980	1450	3360	4420
Calculated Assignment	1400	1310	3000	4500

Calculations

Let X-values be those of the actual count, and Y-values these of the calculated assignment.

Link	X	Y	X^2	Y^2	X*Y
1	980	1400	960,400	1,960,000	1,372,000
2	1450	1310	2,102,500	1,716,100	1,899,500
3	3360	3000	11,289,600	9,000,000	10,080,000
4	4420	4500	19,536,400	20,250,000	19,890,000
Sum	10210	10210	33,888,900	32,926,100	33,241,500

$\bar{x} = \Sigma x/n = 2552.5$

$\bar{y} = \Sigma y/n = 2552.5$

$S_{xx} = \Sigma x^2 - (\Sigma x)^2/n = 33,888,900 - 10,210^2/4 = 7,827,875$

$S_{yy} = \Sigma y^2 - (\Sigma y)^2/n = 32,926,100 - 10,210^2/4 = 6,865,075$

$S_{xy} = \Sigma(x*y) - ((\Sigma x)*(\Sigma y))/n$
$= 33,241,500 - (10,210*10,210)/4 = 7,180,475$

$\beta_1 = S_{xy}/S_{xx} = 7,180,475/7,827,875 = 0.917$

$\beta_0 = y - \beta_1*x = 2552.5 - 0.917*2552.5 = 211.9$

$$y = \beta_0 + \beta_1 * x$$

Therefore, the regression equation is

Y = 211.9 + 0.917 X.

Analysis

The coefficient of correlation is R.

$$R = S_{xy} / (S_{xx} * S_{yy})^{0.5} = 0.9795$$

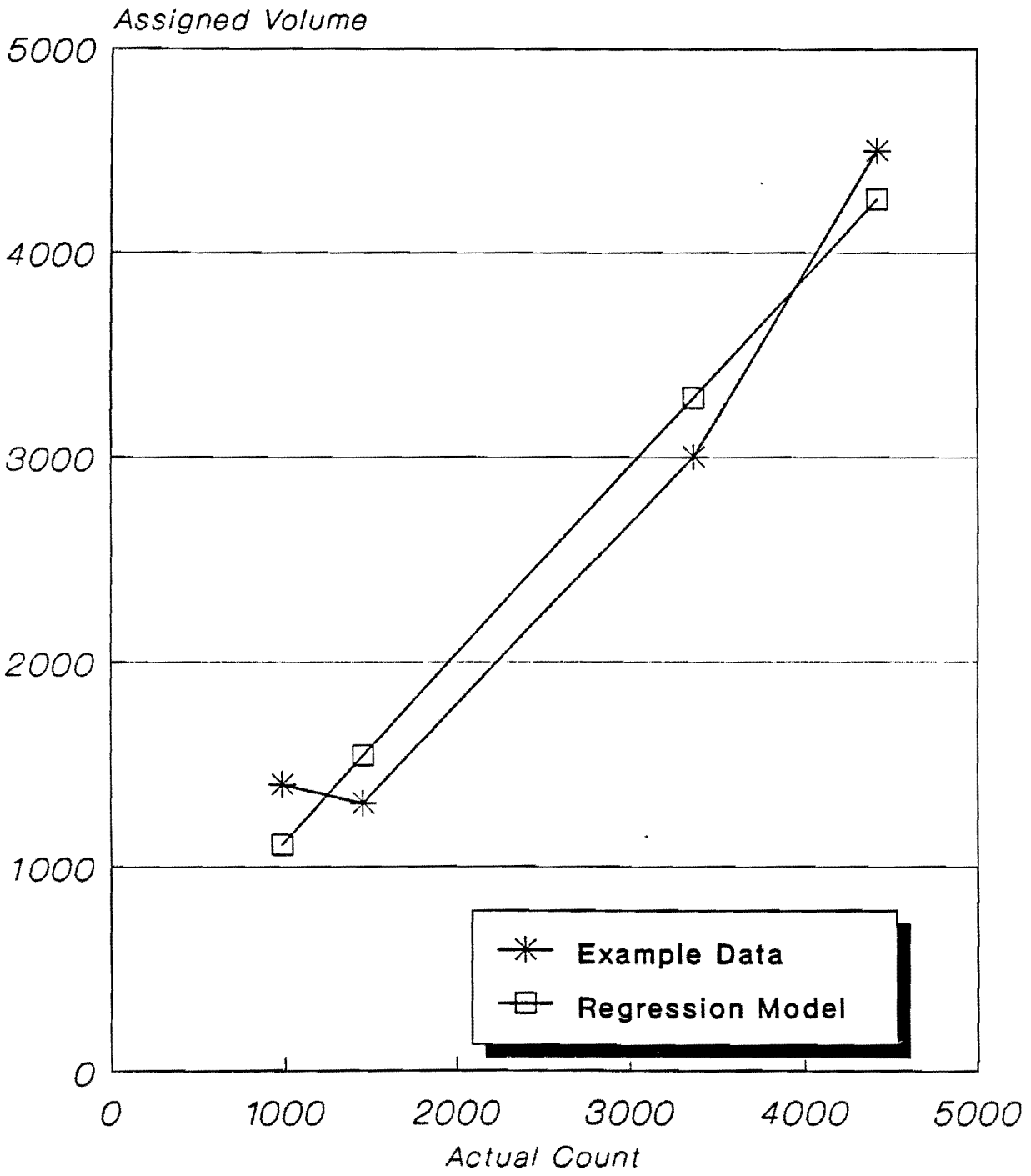
The coefficient of determination is R^2, or 0.96. An important property of the correlation coefficient is that is bounded in the range from -1 to 1. It follows that the coefficient of determination satisfies the inequalities, $0 \leq R^2 \leq 1$. The coefficients are very high, indicating good agreement between counted and assigned volumes.

A useful display for arranging and summarizing the results of an analysis of variance computation is the ANOVA table. Its entries are the sums of squares (SS), degrees of freedom (df), and mean squares (MS) required for the calculation of the F statistics of interest. The entries in the table are the following:

Source of Variation	Sum of Sq. (SS)	Degree of Free. (df)	Mean Square Error (MS)	F
Regression	$SS_r = S_{xy}^2 / S_{xx}$	k-1	$MS_r = SS_r / df$	MS_r / MS_e
Residual	$SS_e = S_{yy} - SS_r$	N-k	$MS_e = SS_e / df$	
Regression	6,586,618	1	6,586,618	47.3
Residual	278,457	2	139,229	
Total	6,865,075	3		

The F-value can be evaluated to determine whether the data points do exhibit a relationship or if they have a random pattern. Using an F-distribution table with the degrees of freedom $df_1 = 1$ (degrees of freedom for the model) and $df_2 = 2$ (error degrees of freedom), for $\alpha = .10$, the critical value is 8.5. Since 47.3 > 8.5, the relation is significant and not random.

PLOT REGRESSION FUNCTION IN COMPARISON WITH DATA



ASSIGNMENT EVALUATION STEPS

Overview

These discussions are written to accompany the capacity-restraint assignment option. This method employs five iterations plus a final weighing iteration to assign traffic to the network. If the all-or-nothing method is being used, the references to iterative steps will not apply.

The output for iterations one through five lets one see what is happening with the assignment process. The final weighted output is the "final" output assignment.

Table Numbering

Most of the tables are denoted with a three character system: a letter, then a number, followed by a number in parentheses. The number in parentheses refers to the particular iteration reflected in the table. Table A1(1) displays link volumes from the first iteration; Table A1(5) displays the same type of data as A1(1), but from the fifth iteration.

Concept

The procedures for evaluating assignment output are rather subjective and relative. There are no universally accepted criteria by which one can establish black-and-white rules to judge an assignment.

With capacity-restraint, one should look for:

* Stability - does the output vary little at the final iterations?

* Reasonability - does the model assignment approach what is actually occurring or could be expected to occur in the future?

Checking Input

The following tables contain input which can be checked. Check the input to insure correctness:

* Identification Record Sequence
* T1: Tree Number
* W2: Iteration Weights Applied
* Selected Link Cutoff Parameters

Checking Totals

Various system aggregates or total measures should be checked. The "X" series of tables present aggregated data. At the final iteration, most of the readings in X1 and X2 should be plotted on the diagonal. This indicates that the traffic assignment is relatively stable.

* X1: Cross Classification of V/C Frequencies from Last Two Assignments
* X2: Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments

Check the totals of tables X3, X4, X5, and X6 to see if they appear reasonable for the given system.

* X3: Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI
* X4: Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR
* X5: Jurisdictional/Functional Cross Classification of Counted Volumes
* X6: Jurisdictional/Functional Cross Classification of Link Capacities

Checking Parts

Each part of the "C" series and other tables contain discrete data items.

* C1: Comparison of Assigned Volumes with Counted Volumes
* C3: Comparison of Assigned Volumes with Assigned Volumes
* C4: Comparison of Assigned Volumes and Ground Counts by Facility Group
* C5: Comparison of Assigned Volumes and Ground Counts by Volume Range
* A1: Link Volume
* I1: Corridor Intercept
* R1: Route Profile
* L1: List of Volumes and Speeds for Updated Links

Special Options

Certain special option tables can be checked if the appropriate option is called for.

* S1, S2, S3, S4 series for windowing
* E1: Centroid to Sector Equivalences for focusing
* Fratar output tables

LISTING OF TABLES

Scope

The following tables are discussed.

* Identification Record Sequence
* T1(1): Tree Number
* A1(1): Link Volume

First Iteration

* X3(1): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI
* X4(1): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR
* X5(1): Jurisdictional/Functional Cross Classification of Counted Volumes
* X6(1): Jurisdictional/Functional Cross Classification of Link Capacities
* C1(1): Comparison of Assigned Volumes with Counted Volumes
* C4(1): Comparison of Assigned Volumes and Ground Counts by Facility Group
* C5(1): Comparison of Assigned Volumes and Ground Counts by Volume Range

Second Iteration

* X1(2): Cross Classification of V/C Frequencies from Last Two Assignments
* X2(2): Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments
* X3(2): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI
* X4(2): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR
* X5(2): Jurisdictional/Functional Cross Classification of Counted Volumes
* X6(2): Jurisdictional/Functional Cross Classification of Link Capacities
* C1(2): Comparison of Assigned Volumes with Counted Volumes
* C3(2): Comparison of Assigned Volumes with Assigned Volumes
* C4(2): Comparison of Assigned Volumes and Ground Counts by Facility Group
* C5(2): Comparison of Assigned Volumes and Ground Counts by Volume Range

Third Iteration	* X1(3): Cross Classification of V/C Frequencies from Last Two Assignments * X2(3): Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments * X3(3): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI * X4(3): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR * X5(3): Jurisdictional/Functional Cross Classification of Counted Volumes * X6(3): Jurisdictional/Functional Cross Classification of Link Capacities * C1(3): Comparison of Assigned Volumes with Counted Volumes * C3(3): Comparison of Assigned Volumes with Assigned Volumes * C4(3): Comparison of Assigned Volumes and Ground Counts by Facility Group * C5(3): Comparison of Assigned Volumes and Ground Counts by Volume Range
Fourth Iteration	* X1(4): Cross Classification of V/C Frequencies from Last Two Assignments * X2(4): Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments * X3(4): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI * X4(4): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR * X5(4): Jurisdictional/Functional Cross Classification of Counted Volumes * X6(4): Jurisdictional/Functional Cross Classification of Link Capacities * C1(4): Comparison of Assigned Volumes with Counted Volumes * C3(4): Comparison of Assigned Volumes with Assigned Volumes * C4(4): Comparison of Assigned Volumes and Ground Counts by Facility Group * C5(4): Comparison of Assigned Volumes and Ground Counts by Volume Range

Fifth Iteration

* X1(5): Cross Classification of V/C Frequencies from Last Two Assignments
* X2(5): Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments
* X3(5): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI
* X4(5): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR
* X5(5): Jurisdictional/Functional Cross Classification of Counted Volumes
* X6(5): Jurisdictional/Functional Cross Classification of Link Capacities
* C1(5): Comparison of Assigned Volumes with Counted Volumes
* C3(5): Comparison of Assigned Volumes with Assigned Volumes
* C4(5): Comparison of Assigned Volumes and Ground Counts by Facility Group
* C5(5): Comparison of Assigned Volumes and Ground Counts by Volume Range

Iteration Weights

* W2: Iteration Weights Applied
* A1(W): Link Volumes
* X1(W): Cross Classification of V/C Frequencies from Last Two Assignments
* X2(W): Cross Classification of Link Capacities by V/C Ratio from Last Two Assignments
* X3(W): Jurisdictional/Functional Cross Classification of Assigned Volumes - VMI
* X4(W): Jurisdictional/Functional Cross Classification of Assigned Volumes - VHR
* X5(W): Jurisdictional/Functional Cross Classification of Counted Volumes
* X6(W): Jurisdictional/Functional Cross Classification of Link Capacities
* C1(W): Comparison of Assigned Volumes with Counted Volumes
* C3(W): Comparison of Assigned Volumes with Assigned Volumes
* C4(W): Comparison of Assigned Volumes and Ground Counts by Facility Group
* C5(W): Comparison of Assigned Volumes and Ground Counts by Volume Range
* I1: Corridor Intercept
* R1: Route Profile
* L1: List of Volumes and Speeds for Updated Links

Selected Link (optional)	* Selected Link Cutoff Parameters * Trip Interchanges Loaded on Links
Windowing	* S1: Input External Station Links * S2: Node Types Found from External Station Links * S3: Renumbered Subarea Centroids and External Stations * S4: Trips by Number of Cordon Crossings
Focusing	* Subarea Sector Equals * E1: Centroid to Sector Equivalences for focusing
Fratar	* $Sum Trip Ends (for base year) * D1: Convergence Distribution at the End of Iteration * $Sum Trip Ends (for future year)
Definitions	VEHICLE MILES are calculated for each link. If a given link one-half mile long has 5000 vehicles assigned to it, then there are 2500 (5000 x 0.5) vehicle-miles on that link. Adding the vehicle miles on all of the network links gives a total vehicle miles. VOLUME is the number of vehicles per unit of time. If peak hour data is input, then the output will be in vehicles per hour. If whole day data are input, then the output will be in vehicles per day.
Turn Penalties	The user must input any desired turn penalties before the program is run. There are two coding methods to input these penalties. The penalty codes may be printed out on a page with the heading, "The Tree Cards Have Established the Following Parameters."

IDENTIFICATION RECORD SEQUENCE

Purpose

These tables allow the analyst to review link descriptors, such as the length of the link and the assigned speed. Data are listed in a link-by-link format.

How to Read

BACK NODE is one end of the link.
FRONT NODE is the other end of the link. On any given row, more than one front node may be paired with the back node listed in the far left column of the page.
SA or DR is the turn penalty code. SA(shaft-and-arrow) is the normal output.
J denotes the jurisdiction or area. In practice, the jurisdiction is a group of zones, although it could include all of the zones in a particular city.
DIST is the input length of the particular link.
SPEED is the input speed for travel along that link.
TIME is the required time to travel the particular link.

Comments

NO CONNECTING NODE will be listed in a row for a back node which was not used.
ONE-WAY will be printed for a node pair which is one-way in the opposite direction from the listed node combination.

How to Use

A review of this table will help to uncover data coding errors. The analyst should scan the data to verify the input.

NETWORK DESCRIPTION

BACK NODE	FRONT NODE	SA	J	DIST (MI)	SPEED (MPH)	TIME (MIN)	FRONT NODE	SA	J	DIST (MI)	SPEED (MPH)	TIME (MIN)	FRONT NODE	SA	J	DIST (MI)	SPEED (MPH)	TIME (MIN)	FRONT NODE	SA	J	DIST (MI)	SPEED (MPH)	TIME (MIN)
301	155	++	0	0.33	35.0	0.57	156	++	0	0.68	30.0	1.36	299	++	5	0.97	40.0	1.46	307	++	5	2.08	40.0	3.12
302	NO CONNECTING NODE																							
303	NO CONNECTING NODE																							
304	157	++	0	0.80	45.0	1.07	297	++	5	2.32	55.0	2.53	402	++	5	0.22	55.0	0.24						
305	157	++	0	0.68	30.0	1.36	158	++	0	0.60	40.0	0.90	402	++	6	0.39	55.0	0.43	306	++	6	1.71	55.0	1.87
306	305	++	6	1.71	55.0	1.87	316	++	6	0.49	55.0	0.53	307	++	5	0.69	40.0	1.04	321	++	6	0.38	35.0	0.65
307	154	++	0	0.59	35.0	1.01	157	++	0	0.88	20.0	2.64	301	++	5	2.08	40.0	3.12	306	++	5	0.69	40.0	1.04
308	153	++	0	0.80	35.0	1.37	155	++	0	0.49	35.0	0.84	300	++	5	0.98	50.0	1.18	309	++	5	1.44	50.0	1.73
309	154	++	0	1.02	40.0	1.53	308	++	5	1.44	50.0	1.73	310	++	5	0.82	50.0	0.98						
310	309	++	5	0.82	50.0	0.98	311	++	5	1.27	40.0	1.91	415	++	5	2.09	45.0	2.79	312	++	5	0.98	40.0	1.47
311	152	++	0	2.47	35.0	4.23	153	++	0	0.91	35.0	1.56	310	++	5	1.27	40.0	1.91	417	++	5	0.50	40.0	0.75
312	151	++	0	0.50	35.0	0.86	154	++	0	0.58	35.0	0.99	310	++	5	0.98	40.0	1.47	313	++	5	1.22	40.0	1.83
313	312	++	5	1.22	40.0	1.83	314	++	5	0.18	40.0	0.27	320	++	5	0.90	40.0	1.35						
314	161	++	0	0.50	25.0	1.20	313	++	5	0.18	40.0	0.27	322	++	6	1.23	55.0	1.34	315	++	6	0.44	55.0	0.48
315	314	++	6	0.44	55.0	0.48	316	++	6	0.42	55.0	0.46	317	++	6	0.34	35.0	0.58						
316	154	++	0	1.21	35.0	2.07	306	++	6	0.49	55.0	0.53	315	++	6	0.42	55.0	0.46						
317	159	++	0	0.20	40.0	0.30	315	++	6	0.34	35.0	0.58	319	++	6	0.63	40.0	0.95						
318	158	++	0	0.60	40.0	0.90	160	++	0	1.07	30.0	2.14	321	++	6	0.87	45.0	1.16	403	++	6	1.01	50.0	1.21
319	160	++	0	0.91	35.0	1.56	161	++	0	0.49	30.0	0.98	317	++	6	0.63	40.0	0.95	325	++	6	1.18	40.0	1.77
320	150	++	0	0.51	35.0	0.87	151	++	0	0.67	35.0	1.15	313	++	5	0.90	40.0	1.35	416	++	5	1.13	40.0	1.70
321	159	++	0	0.31	40.0	0.47	306	++	6	0.38	35.0	0.65	318	++	6	0.87	45.0	1.16						
322	150	++	0	0.42	35.0	0.72	314	++	6	1.23	55.0	1.34	323	++	6	0.37	35.0	0.63	411	++	6	1.01	50.0	1.21
323	163	++	0	0.48	30.0	0.96	322	++	6	0.37	35.0	0.63	330	++	6	0.83	35.0	1.42						
324	NO CONNECTING NODE																							
325	162	++	0	0.80	35.0	1.37	319	++	6	1.18	40.0	1.77	326	++	6	0.70	40.0	1.05						
326	325	++	6	0.70	40.0	1.05	327	++	6	0.50	40.0	0.75	328	++	6	0.83	40.0	1.25						
327	172	++	0	0.87	30.0	1.74	326	++	6	0.50	40.0	0.75	331	++	6	0.73	45.0	0.97						
328	162	++	0	0.69	35.0	1.18	326	++	6	0.83	40.0	1.25	329	++	6	0.63	40.0	0.95						
329	171	++	0	0.51	30.0	1.02	328	++	6	0.63	40.0	0.95	330	++	6	0.54	35.0	0.93	394	++	6	1.30	40.0	1.95
330	162	++	0	0.80	30.0	1.60	170	++	0	0.93	30.0	1.86	323	++	6	0.83	35.0	1.42	329	++	6	0.54	35.0	0.93
331	173	++	0	1.02	40.0	1.53	327	++	6	0.73	45.0	0.97	332	++	6	0.42	45.0	0.56						
332	171	++	0	0.20	40.0	0.30	331	++	6	0.42	45.0	0.56	333	++	6	0.65	45.0	0.87						
333	332	++	6	0.65	45.0	0.87	334	++	6	0.83	40.0	1.25	389	++	6	0.65	45.0	0.87						
334	174	++	0	0.54	25.0	1.30	333	++	6	0.83	40.0	1.25	335	++	6	0.42	40.0	0.63						
335	334	++	6	0.42	40.0	0.63	336	++	6	1.41	50.0	1.69	341	++	6	0.25	40.0	0.38	390	++	6	0.31	50.0	0.37
336	188	++	0	0.36	30.0	0.72	335	++	6	1.41	50.0	1.69	337	++	6	0.83	50.0	1.00						
337	173	++	0	0.84	50.0	1.01	189	++	0	0.57	30.0	1.14	336	++	6	0.83	50.0	1.00	404	++	6	0.93	50.0	1.12
338	187	++	0	0.20	40.0	0.30	189	++	0	0.70	40.0	1.05	339	++	6	0.65	40.0	0.98	345	++	6	2.06	45.0	2.75
339	188	++	0	0.38	35.0	0.65	338	++	6	0.65	40.0	0.98	340	++	6	0.84	40.0	1.26						
340	339	++	6	0.84	40.0	1.26	341	++	6	0.46	40.0	0.69	342	++	6	0.16	40.0	0.24	360	++	6	0.42	40.0	0.63
341	185	++	0	0.57	25.0	1.37	335	++	6	0.25	40.0	0.38	340	++	6	0.46	40.0	0.69						
342	187	++	0	1.08	30.0	2.16	340	++	6	0.16	40.0	0.24	343	++	6	0.41	40.0	0.62						
343	342	++	6	0.41	40.0	0.62	344	++	6	0.47	45.0	0.63	357	++	6	0.52	45.0	0.69						
344	191	++	0	1.26	45.0	1.68	343	++	6	0.47	45.0	0.63	345	++	6	1.85	50.0	2.22						
345	338	++	6	2.06	45.0	2.75	344	++	6	1.85	50.0	2.22	405	++	6	1.09	50.0	1.31						
346	190	++	0	0.84	50.0	1.01	194	++	0	0.60	30.0	1.20	347	++	6	0.37	55.0	0.40	406	++	6	0.67	55.0	0.73
347	346	++	6	0.37	55.0	0.40	348	++	6	0.22	40.0	0.33	353	++	6	0.37	55.0	0.40						
348	193	++	0	0.33	35.0	0.57	194	++	0	0.39	35.0	0.67	347	++	6	0.22	40.0	0.33	349	++	6	0.44	40.0	0.66
349	348	++	6	0.44	40.0	0.66	350	++	6	0.28	55.0	0.31	408	++	6	0.49	55.0	0.53						

T1(1): TREE NUMBER TABLE

Purpose	This table prints the tree descriptions for review. It may be easier to review the trees by plotting them as opposed to printing this list. Trees should be checked to insure that the correct routings from one zone to the next are being followed and that coding errors have not been introduced.
How to Read	TREE NO. is the same as the number of the origin zone. DESTN NODE lists the centroid and node of the destination. ADJ NODE is the node encountered immediately before reaching the destination zone or node. TIME (MIN) is the input time to travel the link between the adjacent node and the destination zone.
How to Use	Locate the subject TREE NO., and a destination node. If coded correctly, the next to the last node encountered before reaching the destination will be listed as ADJ NODE. By repeating this process for all of the destination nodes, the complete tree will be reviewed.

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TABLE T1(1) TREE NO. 1

DESTN NODE	ADJ NODE	TIME (MIN)	DESTN NODE	ADJ NODE	TIME (MIN)	DESTN NODE	ADJ NODE	TIME (MIN)	DESTN NODE	ADJ NODE	TIME (MIN)	DESTN NODE	ADJ NODE	TIME (MIN)
201	368	9.98	202	550	15.01	203	545	10.98	204	370	8.24	205	518	5.32
206	514	4.81	207	519	6.56	208	531	4.16	209	613	4.58	210	535	5.44
211	527	4.87	212	525	6.22	213	581	6.79	214	554	7.75	215	562	8.81
216	556	9.82	217	553	10.65	218	550	12.77	219	570	8.50	220	752	8.74
221	297	13.94	222	297	13.93	223	402	11.16	224	403	11.86	225	404	11.22
226	405	12.47	227	406	13.58	228	401	14.76	229	504	13.83	230	506	15.77
231	508	14.91	232	509	14.13	233	559	14.56	234	875	15.20	235	902	16.66
236	897	19.62	237	996	15.92	238	904	17.27	239	903	17.35	240	905	16.92
241	957	16.11	242	986	17.42	243	988	15.03	244	985	16.78	245	990	13.89
246	991	11.20	247	992	11.02	248	424	11.65	249	424	11.60	250	423	11.71
251	409	13.17	252	300	13.61	253	NOT REACHED		254	NOT REACHED		255	NOT REACHED	
256	NOT REACHED		257	NOT REACHED		258	NOT REACHED		259	NOT REACHED		260	NOT REACHED	
261	NOT REACHED		262	NOT REACHED		263	NOT REACHED		264	NOT REACHED		265	NOT REACHED	
266	NOT REACHED		267	NOT REACHED		268	NOT REACHED		269	NOT REACHED		270	NOT REACHED	
271	NOT REACHED		272	NOT REACHED		273	NOT REACHED		274	NOT REACHED		275	NOT REACHED	
276	NOT REACHED		277	NOT REACHED		278	NOT REACHED		279	NOT REACHED		280	NOT REACHED	
281	NOT REACHED		282	NOT REACHED		283	NOT REACHED		284	NOT REACHED		285	NOT REACHED	
286	NOT REACHED		287	NOT REACHED		288	NOT REACHED		289	NOT REACHED		290	NOT REACHED	
291	NOT REACHED		292	NOT REACHED		293	NOT REACHED		294	NOT REACHED		295	NOT REACHED	
296	NOT REACHED		297	304	13.89	298	297	14.61	299	300	13.93	300	308	13.57
301	307	12.98	302	NOT REACHED		303	NOT REACHED		304	402	11.36	305	306	10.69
306	316	8.82	307	306	9.86	308	309	12.39	309	310	10.66	310	415	9.68
311	310	11.59	312	313	9.45	313	314	7.62	314	322	7.35	315	314	7.83
316	315	8.29	317	315	8.41	318	321	10.63	319	317	9.36	320	416	8.25
321	306	9.47	322	411	6.01	323	322	6.64	324	NOT REACHED		325	326	10.65
326	328	9.60	327	331	10.17	328	329	8.35	329	394	7.40	330	323	8.06
331	332	9.20	332	333	8.64	333	389	7.77	334	335	8.01	335	390	7.38
336	335	9.07	337	336	10.07	338	339	10.38	339	340	9.40	340	360	8.14
341	335	7.76	342	340	8.38	343	357	8.26	344	343	8.89	345	344	11.11
346	347	12.82	347	353	12.42	348	347	12.75	349	408	12.37	350	349	12.68
351	354	11.25	352	351	11.38	353	352	12.02	354	355	11.09	355	356	9.12
356	357	8.63	357	358	7.57	358	359	7.31	359	361	6.89	360	359	7.51
361	363	6.67	362	364	7.00	363	378	6.07	364	365	6.41	365	378	6.05
366	364	6.67	367	366	7.66	368	369	8.51	369	370	8.20	370	371	7.74
371	373	6.47	372	364	6.79	373	374	5.69	374	518	4.95	375	374	5.16
376	375	5.45	377	383	5.35	378	376	5.78	379	380	6.15	380	382	5.72
381	380	6.07	382	383	5.07	383	384	4.89	384	493	4.69	385	384	5.31
386	385	5.94	387	386	6.11	388	387	6.19	389	388	6.90	390	391	7.01
391	380	6.29	392	NOT REACHED		393	395	5.00	394	393	5.45	395	396	4.49
396	397	4.32	397	398	3.57	398	457	3.29	399	398	3.88	400	NOT REACHED	

A1(1): LINK VOLUME TABLE

Purpose

This table lists the volumes assigned in the first iteration of the program. It tells which links would be overloaded if all of the traffic took the route of shortest time. This assignment assumes that traffic congestion did not cause the travel time on any route to increase.

How to Read

ANODE is one end of the link.
BNODE is the other end of the link.
VOLUME is the assigned volume.

Comments

DIR notes that the adjacent volume is a one-way directional volume.
NDIR notes that the adjacent volume is a two-way nondirectional volume.
TURNS notes that the adjacent volume is for a particular movement on the link (which may actually be a "thru" movement). The given movement is from the B-node through the A-node toward the C-node.

How to Use

The analyst should review the link volumes. An unusual volume could indicate a problem with a coding or with the preceding traffic assignment.

```
TABLE A1(1)    LINK VOLUMES
ANODE       BNODE       VOLUME
-----       -----------------
  305   DIR     30        3284 :  one-way vol. from node
                                  305 to 30 is 3284.
  305  NDIR     30        6580 :  two-way vol. between
                                  nodes 305-30 is 6580.
     TURNS ( 30-  31)     44 :  vol. is 44 from node
                                  30 thru 305 toward 31.
     TURNS ( 31- 306)    741 :  vol. is 741 from node
                                  31 thru 305 to 306.
     TURNS (306- 488)   5546 :  vol. is 5546 from node
                                  306 thru 305 to 488.
```

TABLE A1(1) LINK VOLUMES

ANODE	B NODE	VOLUME	B NODE	VOLUME	B NODE	VOLUME	B NODE	VOLUME	NAME OF INTERSECTION
306 DIR	305	8674	316	9639	307	463	321	1259	
306 NDIR	305	17425	316	19173	307	929	321	2543	
TURNS(	305- 316)	8498	(305- 307)	77	(305- 321)	176	(316- 305)	8424	
TURNS(	316- 307)	206	(316- 321)	904	(307- 305)	77	(307- 316)	210	
TURNS(	307- 321)	179	(321- 305)	173	(321- 316)	931	(321- 307)	180	
307 DIR	154	302	157	47	301	274	306	466	
307 NDIR	154	604	157	96	301	549	306	929	
TURNS(	154- 157)	44	(154- 301)	33	(154- 306)	225	(157- 154)	45	
TURNS(	157- 301)	4	(157- 306)	0	(301- 154)	31	(301- 157)	3	
TURNS(	301- 306)	241	(306- 154)	226	(306- 157)	0	(306- 301)	237	
308 DIR	153	28	155	23	300	1085	309	1160	
308 NDIR	153	56	155	68	300	2200	309	2268	
TURNS(	153- 155)	1	(153- 300)	12	(153- 309)	15	(155- 153)	1	
TURNS(	155- 300)	0	(155- 309)	44	(300- 153)	13	(300- 155)	1	
TURNS(	300- 309)	1101	(309- 153)	14	(309- 155)	21	(309- 300)	1073	
309 DIR	154	34	308	1108	310	1126			
309 NDIR	154	67	308	2268	310	2201			
TURNS(	154- 308)	33	(154- 310)	0	(308- 154)	34	(308- 310)	1126	
TURNS(	310- 154)	0	(310- 308)	1075					
310 DIR	309	1075	311	159	415	1395	312	109	
310 NDIR	309	2201	311	404	415	2654	312	217	
TURNS(	309- 311)	0	(309- 415)	1123	(309- 312)	3	(311- 309)	0	
TURNS(	311- 415)	206	(311- 312)	39	(415- 309)	1074	(415- 311)	118	
TURNS(	415- 312)	67	(312- 309)	1	(312- 311)	41	(312- 415)	66	
311 DIR	152	8	153	77	310	245	417	99	
311 NDIR	152	14	153	187	310	404	417	253	
TURNS(	152- 153)	3	(152- 310)	0	(152- 417)	3	(153- 152)	2	
TURNS(	153- 310)	102	(153- 417)	6	(310- 152)	0	(310- 153)	69	
TURNS(	310- 417)	90	(417- 152)	6	(417- 153)	5	(417- 310)	143	
312 DIR	151	16	154	109	310	108	313	46	
312 NDIR	151	33	154	216	310	217	313	92	
TURNS(	151- 154)	14	(151- 310)	3	(151- 313)	0	(154- 151)	14	
TURNS(	154- 310)	76	(154- 313)	17	(310- 151)	2	(310- 154)	78	
TURNS(	310- 313)	29	(313- 151)	0	(313- 154)	17	(313- 310)	29	
313 DIR	312	46	314	160	320	162			
313 NDIR	312	92	314	330	320	314			
TURNS(	312- 314)	26	(312- 320)	20	(314- 312)	28	(314- 320)	142	
TURNS(	320- 312)	18	(320- 314)	134					
314 DIR	161	1262	313	170	322	12737	315	12068	
314 NDIR	161	2541	313	330	322	25317	315	24286	
TURNS(	161- 313)	42	(161- 322)	939	(161- 315)	298	(313- 161)	39	

X3(1): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VMI

Purpose

This table shows the breakdown of volumes assigned during the first iteration according to the various categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles falling into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel in the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 10.8 miles of freeway in Yourtown and 37,999 vehicle-miles of travel on freeways in Yourtown according to this assignment. Also, there are a total of 35.7 miles and 103,577 vehicle-miles in Yourtown, a total of 28.5 miles and 98,778 vehicle-miles on freeways, and a total of 3790.1 miles and 18,974,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	10.8	35.7
	VEH-MILES	37999	103577
:	:	:	:
TOTAL	MILES	28.5	3790.1
	VEH-MILES	98778	18974034

Checking the miles of freeway in each jurisdiction can uncover coding mistakes. When testing alternative facility options, the vehicle-miles should be minimized.

TABLE X3(1) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	269.6
	VEH-MILES	0	0	0	0	0	0	276481
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	47345
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	89352	0	3151	0	389778
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	192881	0	28624	0	753082
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	39114	0	166158	0	313206
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	40445	0	64538	0	243023
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	245397	0	46980	0	523216
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	99729	0	99729
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25381	0	81374	0	302174
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	659.6
	VEH-MILES	0	0	632571	0	490554	0	2948034

X4(1): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VHR

Purpose

This table or matrix shows the breakdown of vehicle-hours of travel which result from this assignment iteration and the breakdown of the average speed according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones.

VEH-HOURS is the amount of vehicle-hours of travel which the first assignment says will be made on or in the particular category described by the row and the column description.

MILES/HOUR is the average velocity of the links that fall into the particular category described by the row and the column headings.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 3,300 vehicle-hours of travel on freeways in Yourtown according to this assignment with an average speed of 49.0 miles per hour. Also, there are a total of 11,450 vehicle-hours and an average of 32.7 miles per hour in Yourtown, a total of 45,928 vehicle-hours and an average of 56.5 miles per hour on freeways, and a total of 45,234,576 vehicle-hours and an average of 35.2 miles per hour in the whole study area. When comparing future alternative networks, one goal might be to minimize vehicle-hours of travel.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	VEH-HOURS	3300	11450
	MILES/HOUR	49.0	32.7
:	:	:	:
TOTAL	VEH-HRS	45928	45234576
	MILES/HOUR	56.5	35.2

TABLE X4(1) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	VEH-HOURS	0	0	0	0	0	0	9561
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	28.92
1	VEH-HOURS	0	0	0	0	0	0	1778
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	26.62
2	VEH-HOURS	0	0	2002	0	86	0	10178
	MILES/HOUR	0.00	0.00	44.63	0.00	36.53	0.00	38.30
3	VEH-HOURS	0	0	4293	0	747	0	20020
	MILES/HOUR	0.00	0.00	44.93	0.00	38.30	0.00	37.62
4	VEH-HOURS	0	0	712	0	3272	0	6374
	MILES/HOUR	0.00	0.00	54.96	0.00	50.79	0.00	49.14
5	VEH-HOURS	0	0	733	0	1386	0	4730
	MILES/HOUR	0.00	0.00	55.21	0.00	46.55	0.00	51.38
6	VEH-HOURS	0	0	4571	0	970	0	9789
	MILES/HOUR	0.00	0.00	53.68	0.00	48.42	0.00	53.45
7	VEH-HOURS	0	0	0	0	2144	0	2144
	MILES/HOUR	0.00	0.00	0.00	0.00	46.51	0.00	46.51
8	VEH-HOURS	0	0	462	0	1799	0	6468
	MILES/HOUR	0.00	0.00	54.97	0.00	45.24	0.00	46.72
9	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	VEH-HRS	0	0	12772	0	10405	0	71042
	MILES/HOUR	0.00	0.00	49.53	0.00	47.15	0.00	41.50

X5(1): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

Purpose

This table or matrix shows the actual counted volumes on links that did have counts made on them and the miles of link which were counted. The listing is presented according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles of link on which counts were made that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel which were counted that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then the total mileage of the freeway links on which counts were made in Yourtown was 1.8, and there were 3,855 vehicle-miles of travel on these links. Also, there are a total of 3.7 miles and 10,357 vehicle-miles in Yourtown, a total of 2.5 miles and 9,878 vehicle-miles on freeways, and a total of 9.1 miles and 74,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	1.8	3.7
	VEH-MILES	3855	10357
:	:	:	:
TOTAL	MILES	2.5	9.1
	VEH-MILES	9878	74034

TABLE X5(1) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	45394
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	83497	0	4498	0	397430
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	179206	0	30303	0	723997
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	40438	0	157506	0	319901
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	40024	0	69499	0	253840
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	225744	0	50218	0	517421
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	98663	0	98663
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25081	0	90293	0	305564
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	390.0
	VEH-MILES	0	0	593990	0	500980	0	2662210

X6(1): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

Purpose

This table or matrix shows the miles of the links according to the various input categories of roadway class (freeway, arterial) or a defined jurisdictional area and the twenty-four hour capacity in terms of vehicle-miles on each. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of capacity that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 7.8 miles of freeway in Yourtown and 63,790 vehicle-miles of capacity on the freeways in Yourtown. Also, there are a total of 18.5 miles and 138,577 vehicle-miles on freeways and a total of 790.1 miles and 8,974,034 vehicle-miles in the entire study area. This information can be used to compare the impacts of various proposed alternative networks.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	7.8	31.7
	VEH-MILES	63790	193577
:	:	:	:
:	:	:	:
TOTAL	MILES	18.5	790.1
	VEH-MILES	138577	8974034

TABLE X6(1) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	80.3
	VEH-MILES	0	0	0	0	0	0	150664
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	100350
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	188940	0	21371	0	903977
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	194970	0	48790	0	1123329
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	97244	0	371412	0	639634
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	78963	0	387778	0	813120
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	378832	0	208275	0	1271072
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	273280	0	273280
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	57628	0	291046	0	793134
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	470.3
	VEH-MILES	0	0	996577	0	1601952	0	6068560

C1(1): COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

Purpose

This table analyzes the degree of agreement between predicted and actual volumes on selected routes. A series of links, which is often traveled in sequence from one link to another, forms a route.

A regression equation is used to evaluate the degree of agreement. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

ROUTE is the number assigned to the route being investigated. The printout field for route is not separated from the adjacent field to the right, so the route number can appear to be a part of the number in the adjacent column.

INTCPT is the β_0 value of the y-axis intercept of the regression equation. In many cases the ideal intercept is 0.0.

SLOPE is the β_1 value or the slope of the regression equation. When comparing two sets of supposedly identical data on x-y axes with the same scale, the ideal slope equals 1.0.

UPPER and LOWER are the values of the confidence limits of the slope. It is highly probable that the true slope falls somewhere between these two values.

SAMPLE is the number of links that comprise the particular route.

TOTAL is the sum of the volumes on the various links of the route.

CORR (R) is the coefficient of correlation. This indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship. A value of -1.0 indicates a perfect inverse relationship.

DETERM (R^2) is the coefficient of determination. This value is the proportion of total variability that is explained by the model with 1.0 being a perfect model.

SOS is the sum of squares used to calculate other terms in regression analysis.

RMS is the root mean square error used to estimate the standard deviation of the dependent variable.

PCT ERR is the root mean square error expressed as a percent of average volume of the routes' links.

F is the heading over the F-ratio value for the F-test of significance of the regression equation. For any particular row, the F entry must be evaluated by the number of "degrees of freedom" (df). The degree of freedom for the regression (df_1) is always one. For the error, the degrees of freedom is the number of samples minus two (df_2 = s-2). Enter an F distribution table for df_1 = 1 and df_2 = s-2 to find the critical F-value at certain α-value, which, if smaller than the calculated F-value, means that the regression is significant. Therefore, the test hypothesis will be rejected and concluded that there is significant difference between the assigned volumes and the counted volumes.

How to Use

The table will flag problems with assignments to the listed routes. A value in the F column that is too low or a low coefficient of determination indicates a low level of agreement between the modeled assignment and the counted volumes.

TABLE C1(1) COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

COMPARISON OF ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT ITER. 1 DEC 14, 1988'
WITH COUNTED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT DEC 14, 1988'

ROUTE	INTCPT	SLOPE	UPPER	LOWER	SAMPLE	TOTAL	CORR.	DETERM.	SOS	RMS	PCT ERR	F
	14511.094	0.6556	0.8182	0.4929	17.	409435.0	0.89787	0.80617	0.3290E+09	4399.316	18.266	62.39
	29697.230	0.6172	0.8620	0.3725	13.	322465.0	0.83039	0.68955	0.7947E+08	2472.462	9.968	24.43
	3********	0.1909	0.6367	-0.2550	17.	779767.0	0.21175	0.04484	0.9762E+09	7577.942	16.521	0.70
	42297.974	0.8463	1.1626	0.5300	13.	168182.0	0.84514	0.71427	0.2860E+08	1483.259	11.465	27.50
ALL	1095.564	0.8541	0.8710	0.8372	843.	7459616.0	0.95973	0.92107	0.6962E+10	2873.724	32.476	9814.67

C4(1): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

Purpose

This table analyzes the degree of agreement between predicted (assigned) and actual counted volumes by facility type, either

FREEWAY,
ARTERIAL, or
OTHERS.

In addition, comparisons are made for geographical areas, called "sectors," which are groupings of zones. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS is the number of links which fall into the category listed in a particular row.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular group of links do not match well with the counted volumes. The counted volumes and the final-output assigned volumes for each facility group should agree within ±10%.

TABLE C4(1) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

FACILITY GROUP	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
FREEWAYS	1.617307E+04	1.636487E+04	260.	-2.634761E+03	1.174769E+00	9.232840E-01	8.524533E-01	4.169316E+03	2.577936E+01
ARTERIALS	8.589414E+03	9.052980E+03	274.	-2.036700E+02	1.077681E+00	9.583107E-01	9.183594E-01	2.840835E+03	3.307365E+01
OTHERS	2.381877E+03	2.343790E+03	309.	-3.012952E+02	1.110504E+00	9.642972E-01	9.298691E-01	8.642910E+02	3.628610E+01
SECTOR CLASSIFICATION									
1	9.870270E+03	1.060802E+04	37.	-1.557531E+03	1.232545E+00	9.292226E-01	8.634546E-01	3.668480E+03	3.716696E+01
2	9.378105E+03	9.309352E+03	169.	-1.432406E+02	1.007942E+00	9.600843E-01	9.217618E-01	2.007353E+03	2.140466E+01
3	1.335555E+04	1.405053E+04	234.	-1.104134E+03	1.134708E+00	9.495196E-01	9.015874E-01	4.419848E+03	3.309369E+01
4	6.839559E+03	6.643625E+03	91.	2.391408E+02	9.363884E-01	9.607258E-01	9.229941E-01	2.489148E+03	3.639339E+01
5	4.202039E+03	4.049459E+03	98.	-5.244142E+01	9.761686E-01	9.946839E-01	9.893960E-01	6.111655E+02	1.454450E+01
6	7.234664E+03	7.596039E+03	75.	-2.096821E+02	1.078933E+00	9.889950E-01	9.781111E-01	1.429127E+03	1.975388E+01
7	2.811628E+03	2.865907E+03	43.	-5.352832E+02	1.209686E+00	9.823925E-01	9.650950E-01	9.142170E+02	3.251556E+01
8	5.432289E+03	5.329781E+03	96.	-4.456360E+02	1.063164E+00	9.332809E-01	8.710133E-01	2.096785E+03	3.859854E+01

C5(1): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

Purpose

This table analyzes the degree of agreement between predicted and actual link volumes by volume groupings or ranges. The ALL row presents this analysis for the entire network of links.

Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

VOLUME RANGE lists the minimum and maximum volumes in that particular grouping.

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS lists the number of links in the particular volume range.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE ERROR is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular volume range of links do not match well with the counted volumes. This information will indicate whether traffic on certain groups of roads is being systematically over- or underassigned.

TABLE C5(1) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

VOLUME RANGE	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
0 TO 999	4.859375E+02	3.921172E+02	128.	9.104016E+01	6.195797E-01	4.831001E-01	2.333857E-01	3.205430E+02	6.596382E+01
1000 TO 4999	2.518587E+03	2.459249E+03	269.	-3.130540E+02	1.100737E+00	5.675609E-01	3.221253E-01	1.782003E+03	7.075407E+01
5000 TO 9999	7.193078E+03	7.109809E+03	159.	6.669951E+02	8.956962E-01	4.625103E-01	2.139158E-01	2.541334E+03	3.533026E+01
10000 TO 14999	1.268130E+04	1.215995E+04	107.	2.989175E+03	7.231728E-01	3.548246E-01	1.259004E-01	2.799041E+03	2.207217E+01
15000 TO 24999	1.919136E+04	2.043511E+04	139.	-9.036711E+03	1.535681E+00	7.316474E-01	5.353079E-01	4.330984E+03	2.256735E+01
25000 TO 49999	3.381951E+04	3.599590E+04	41.	-1.214968E+04	1.423603E+00	8.418798E-01	7.087616E-01	6.289543E+03	1.859737E+01
ALL	8.653023E+03	8.848891E+03	843.	-4.831326E+02	1.078469E+00	9.597265E-01	9.210748E-01	2.873724E+03	3.321062E+01

ITERATION TIME = 0.0727 MINUTES

X1(2) CROSS CLASSIFICATION OF V/C FREQUENCIES FROM LAST TWO ASSIGNMENTS

Purpose

This plot indicates the level of change between two successive assignment iterations. The number of links in each V/C ratio group are indicated.

If the data points are well scattered, then the current assignment iteration was much different than the previous iteration. If the data points tend toward a straight line with origin at (0,0) in the upper left corner, then little change took place between iterations.

How to Read

This table is really a graph with the (0,0) point in the upper left corner.

V/C is the volume to capacity ratio. The horizontal or X-axis is the present iteration V/C ratio. The vertical or Y-axis is the V/C ratio of the previous iteration. Instead of plotting points in the form of dots, they are represented as numbers, each number being the number of links which have the V/C attributes of the particular row and column.

TOT is the total of a row or a column. There are two rows of totals at the bottom of the plot. The top row is the column total. The bottom row is the row total column transposed.

How to Use

The analyst can determine whether the particular iteration is approaching stability by the degree of scatter. When the plot forms a diagonal passing through the coordinates of (0,0) toward (3,3), then it is stable. If stability is not reached, then the output is not reliable.

Scanning the output will indicate the extent of overcapacity links. One can determine whether capacity limitations will be severe.

TABLE X1(2) CROSS CLASSIFICATION OF V/C FREQUENCIES FROM LAST TWO ASSIGNMENTS

V/C	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	TOT
0.0	98	39	19	6	11	12	5	2	2	3	5	4		5	1	2	2		4	2	2	1			2				1		6	234
0.1	7	49	23	7	5	15	3	4	1	1			1	1			2				2		1								4	126
0.2	4	5	32	21	6	4	4	2	2							1	1										1				1	84
0.3	3	3	10	38	22	12	4	2	5	1	1	1					1							1		1	1				2	108
0.4		2	3	9	40	22	9	6	3	4	1	2	1		1		1															104
0.5	2	3	1		9	21	4	2	6	1	1	3		1			1			1											4	60
0.6	1	1		5	4	9	22	7	8	4	4	2							1		1										1	70
0.7	1		1	1	2	2	14	7	13	7	3	2	3		1				1	1		1									2	62
0.8	1		4	2	1	4	5	10	6	4	5	4	2	2				1								1		1				53
0.9	3		2	3	3	5	6	9	5	1	4	2	1			1			1		1										2	49
1.0	1	2	2	4	2		2	1	3	4	4	2		1		1																29
1.1	1		2	1	1	1	2	3		1	2	1	4	1	1																	21
1.2	2	5	4	2				1	2	1	2	1	3	1		1				1												26
1.3	5	1	2	1	1		1	1	2				2	1													1		1			19
1.4	5	1	1		1				2	1		3	1	1	1		1													1		19
1.5	1			1			1							1																		4
1.6	5	2		2	1																											10
1.7	4	2	2			1			1																							10
1.8	6		1																1													8
1.9	4			1			1							1			1															8
2.0	3																1															4
2.1	2							1																								3
2.2	1															1																2
2.3	2			1					1																							4
2.4	3																														1	4
2.5	2	1						1																								4
2.6	1																															1
2.7	4										1																					5
2.8	1								1																							2
2.9	2												1																			3
3.0	14	2	1					1										1													3	23
TOT	189	118	110	105	109	108	83	60	63	33	33	27	19	16	5	7	11	2	8	5	6	2	1	1	2	2	3	2	2	1	26	
	234	126	84	108	104	60	70	62	53	49	29	21	26	19	19	4	10	10	8	8	4	3	2	4	4	4	1	5	2	3	23	

TOTAL LINKS IN V/C SUMMARY = 1159

X2(2): CROSS CLASSIFICATION OF LINK CAPACITIES BY V/C RATIO FROM LAST TWO ASSIGNMENTS

Purpose

This plot indicates the level of change between two successive assignment iterations. The sum of the volumes per link which fall into each V/C ratio group are indicated.

If the data points are well scattered, then the current assignment iteration was much different than the previous iteration. If the data points tend toward a straight line with origin at (0,0) in the upper left corner, then little change took place between iterations.

How to Read

This table is really a graph with the (0,0) point in the upper left corner.

V/C is the volume to capacity ratio. The horizontal or X-axis is the present iteration V/C ratio. The vertical or Y-axis is the V/C ratio of the previous iteration. Instead of plotting points in the form of dots, they are represented as numbers, each number being the number of trips (times the "SCALE FACTOR" listed below the graph) which have the V/C attributes of the particular row and column.

TOT is the total of a row or a column. There are two rows of totals at the bottom of the plot. The top row is the column total. The bottom row is the row total transposed.

PCT CAP is written "staggered" on two rows. This printed output is the cumulative percent of capacity held by each column from left to right.

SCALE FACTOR ONE UNIT is the largest trip divided by 999.

TOTAL SCALED TRIP IN SUMMARY is the sum of TOT.

TOTAL LINK CAPACITIES is the sum of the capacities on all links.

How to Use

The analyst can determine whether the particular iteration is approaching stability by the degree of scatter. When the plot forms a diagonal passing through the coordinates of (0,0) toward (3,3), then it is stable. If stability is not reached, then the output is not reliable.

TABLE X2(2) CROSS CLASSIFICATION OF LINK CAPACITIES BY V/C RATIO FROM LAST TWO ASSIGNMENTS

V/C	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	TOT
0.0	721	328	216	80	166	80	30	38	24	15	31	16		7	1	1	2		13	4	9				4				2			31791
0.1	86	510	272	78	63	133	40	63	20	2			1	10			5				5		6									21296
0.2	60	45	399	367	68	50	42	4	21							1	1															1058
0.3	27	73	259	818	461	199	80	33	73	17	17	10					1										1					12070
0.4		35	111	202	999	461	157	106	50	65	9	40	8		8		2															2253
0.5	41	49	3		260	391	47	34	81	22	2	45		13			3			3												1 995
0.6		26		68	53	191	403	142	143	54	86	35							4		1											1206
0.7			6	23	21	30	317	62	278	120	68	42	46		10				9	5		9										1046
0.8	1		54	33	4	37	53	230	83	57	86	42	53	65				4								1						803
0.9	31		52	71	45	108	151	225	118	1	68	63	30			1			9		1											974
1.0	1	11	34	89	29		79	11	22	50	39	28		20		9																422
1.1	6		30	8	23	3	27	12		8	16	8	14	32	32																	219
1.2	9	25	55	21				7	25	32	65	32	42	1						1												315
1.3	39	1	10	23	6		2	32	26				34														1					174
1.4	33		9		30				36	1		11			1		1													1		123
1.5	2			2			6																									10
1.6	45	8		1	20																											74
1.7	2	8	28			20			1																							59
1.8	15		20																													35
1.9	11						1																									12
2.0	4																															4
2.1	1							1																								2
2.2																																0
2.3	7								1																							8
2.4	1																														3	4
2.5	4							2																								6
2.6	1																															1
2.7	4																															4
2.8	1																															1
2.9																																0
3.0	5		1																													6
TOT	1158	1119	1559	1884	2248	1703	1435	1002	1002	444	487	372	228	148	52	12	15	4	35	13	16	9	6	0	4	1	2	0	2	1	10	
	1791	1296	1058	2070	2253	9951	2061	1046	803	974	422	219	315	174	123	10	74	59	35	12	4	2	0	8	4	6	1	4	1	0	6	
PCT	7.8		25.6		53.1		73.9		87.3		93.5		97.6		99.0		99.2		99.5		99.7		99.8		99.8		99.9		99.9		100.0	
CAP		15.2		38.1		64.4		80.6		90.2		96.0		98.6		99.1		99.2		99.6		99.7		99.8		99.8		99.9		99.9		

SCALE FACTOR ONE UNIT = 1020 TRIPS

TOTAL SCALED TRIPS IN SUMMARY = 14971

TOTAL LINK CAPACITIES = 15422200.

X3(2): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VMI

Purpose

This table or matrix shows the breakdown of volumes assigned during the second iteration according to the various categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles falling into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel in the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 10.8 miles of freeway in Yourtown and 37,999 vehicle-miles of travel on freeways in Yourtown according to this assignment. Also, there are a total of 35.7 miles and 103,577 vehicle-miles in Yourtown, a total of 28.5 miles and 98,778 vehicle-miles on freeways, and a total of 3790.1 miles and 18,974,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	10.8	35.7
	VEH-MILES	37999	103577
:	:	:	:
TOTAL	MILES	28.5	3790.1
	VEH-MILES	98778	18974034

Checking the miles of freeway in each jurisdiction can uncover coding mistakes. When testing alternative facility options, the vehicle-miles should be minimized.

TABLE X3(2) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	269.6
	VEH-MILES	0	0	0	0	0	0	282954
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	41025
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	106611	0	3762	0	409883
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	170654	0	27590	0	730112
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	41831	0	171463	0	332328
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	38985	0	84400	0	270807
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	234739	0	45892	0	512531
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	99648	0	99648
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25363	0	118499	0	320906
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	659.6
	VEH-MILES	0	0	618181	0	551256	0	3000193

X4(2): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VHR

Purpose

This table or matrix shows the breakdown of vehicle-hours of travel which result from the second iteration and the breakdown of the average speed according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones.

VEH-HOURS is the amount of vehicle-hours of travel which the first assignment says will be made on or in the particular category described by the row and the column description.

MILES/HOUR is the average velocity of the links that fall into the particular category described by the row and the column headings.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 3,300 vehicle-hours of travel on freeways in Yourtown according to this assignment with an average speed of 49.0 miles per hour. Also, there are a total of 11,450 vehicle-hours and an average of 32.7 miles per hour in Yourtown, a total of 45,928 vehicle-hours and an average of 56.5 miles per hour on freeways, and a total of 45,234,576 vehicle-hours and an average of 35.2 miles per hour in the whole study area. When comparing future alternative networks, one goal might be to minimize vehicle-hours of travel.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	VEH-HOURS	3300	11450
	MILES/HOUR	49.0	32.7
:	:	:	:
TOTAL	VEH-HRS	45928	45234576
	MILES/HOUR	56.5	35.2

TABLE X4(2) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	VEH-HOURS	0	0	0	0	0	0	10240
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	27.63
1	VEH-HOURS	0	0	0	0	0	0	1519
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	27.00
2	VEH-HOURS	0	0	2226	0	94	0	10029
	MILES/HOUR	0.00	0.00	47.90	0.00	39.84	0.00	40.87
3	VEH-HOURS	0	0	4379	0	752	0	20455
	MILES/HOUR	0.00	0.00	38.97	0.00	36.71	0.00	35.69
4	VEH-HOURS	0	0	701	0	3609	0	6937
	MILES/HOUR	0.00	0.00	59.64	0.00	47.51	0.00	47.91
5	VEH-HOURS	0	0	657	0	1725	0	4972
	MILES/HOUR	0.00	0.00	59.38	0.00	48.93	0.00	54.46
6	VEH-HOURS	0	0	4190	0	896	0	9028
	MILES/HOUR	0.00	0.00	56.02	0.00	51.23	0.00	56.77
7	VEH-HOURS	0	0	0	0	2297	0	2297
	MILES/HOUR	0.00	0.00	0.00	0.00	43.39	0.00	43.39
8	VEH-HOURS	0	0	428	0	2690	0	6664
	MILES/HOUR	0.00	0.00	59.32	0.00	44.05	0.00	48.15
9	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	VEH-HRS	0	0	12581	0	12062	0	72142
	MILES/HOUR	0.00	0.00	49.14	0.00	45.70	0.00	41.59

X5(2): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

Purpose

This table or matrix shows the actual counted volumes on links that did have counts made on them and the miles of link which were counted. The listing is presented according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles of link on which counts were made that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel which were counted that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then the total mileage of the freeway links on which counts were made in Yourtown was 1.8, and there were 3,855 vehicle-miles of travel on these links. Also, there are a total of 3.7 miles and 10,357 vehicle-miles in Yourtown, a total of 2.5 miles and 9,878 vehicle-miles on freeways, and a total of 9.1 miles and 74,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	1.8	3.7
	VEH-MILES	3855	10357
:	:	:	:
TOTAL	MILES	2.5	9.1
	VEH-MILES	9878	74034

TABLE X5(2) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	45394
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	83497	0	4498	0	397430
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	179206	0	30303	0	723997
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	40438	0	157506	0	319901
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	40024	0	69499	0	253840
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	225744	0	50218	0	517421
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	98663	0	98663
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25081	0	90293	0	305564
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	390.0
	VEH-MILES	0	0	593990	0	500980	0	2662210

X6(2): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

Purpose

This table or matrix shows the miles of the links according to the various input categories of roadway class (freeway, arterial) or a defined jurisdictional area and the twenty-four hour capacity in terms of vehicle-miles on each. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of capacity that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 7.8 miles of freeway in Yourtown and 63,790 vehicle-miles of capacity on the freeways in Yourtown. Also, there are a total of 18.5 miles and 138,577 vehicle-miles on freeways and a total of 790.1 miles and 8,974,034 vehicle-miles in the entire study area. This information can be used to compare the impacts of various proposed alternative networks.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	7.8	31.7
	VEH-MILES	63790	193577
:	:	:	:
:	:	:	:
TOTAL	MILES	18.5	790.1
	VEH-MILES	138577	8974034

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TABLE X6(2) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	80.3
	VEH-MILES	0	0	0	0	0	0	150664
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	100350
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	188940	0	21371	0	903977
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	194970	0	48790	0	1123329
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	97244	0	371412	0	639634
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	78963	0	387778	0	813120
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	378832	0	208275	0	1271072
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	273280	0	273280
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	57628	0	291046	0	793134
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	470.3
	VEH-MILES	0	0	996577	0	1601952	0	6068560

C1(2): COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

Purpose

This table analyzes the degree of agreement between predicted and actual volumes on selected routes. A series of links, which is often traveled in sequence from one link to another, forms a route.

A regression equation is used to evaluate the degree of agreement. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

ROUTE is the number assigned to the route being investigated. The printout field for route is not separated from the adjacent field to the right, so the route number can appear to be a part of the number in the adjacent column.

INTCPT is the β_0 value of the y-axis intercept of the regression equation. In many cases the ideal intercept is 0.0.

SLOPE is the β_1 value or the slope of the regression equation. When comparing two sets of supposedly identical data on x-y axes with the same scale, the ideal slope equals 1.0.

UPPER and LOWER are the values of the confidence limits of the slope. It is highly probable that the true slope falls somewhere between these two values.

SAMPLE is the number of links that comprise the particular route.

TOTAL is the sum of the volumes on the various links of the route.

CORR (R) is the coefficient of correlation. This indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship. A value of -1.0 indicates a perfect inverse relationship.

DETERM (R^2) is the coefficient of determination. This value is the proportion of total variability that is explained by the model with 1.0 being a perfect model.

SOS is the sum of squares used to calculate other terms in regression analysis.

RMS is the root mean square error used to estimate the standard deviation of the dependent variable.

PCT ERR is the root mean square error expressed as a percent of average volume of the routes' links.

F is the heading over the F-ratio value for the F-test of significance of the regression equation. For any particular row, the F entry must be evaluated by the number of "degrees of freedom" (df). The degree of freedom for the regression (df_1) is always one. For the error, the degrees of freedom is the number of samples minus two (df_2 = s-2). Enter an F distribution table for df_1 = 1 and df_2 = s-2 to find the critical F-value at certain α-value, which, if smaller than the calculated F-value, means that the regression is significant. Therefore, the test hypothesis will be rejected and concluded that there is significant difference between the assigned volumes and the counted volumes.

How to Use

The table will flag problems with assignments to the listed routes. A value in the F column that is too low or a low coefficient of determination indicates a low level of agreement between the modeled assignment and the counted volumes.

TABLE C1(2) COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

COMPARISON OF ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT ITER. 2 DEC 14, 1988'
WITH COUNTED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT DEC 14, 1988'

ROUTE	INTCPT	SLOPE	UPPER	LOWER	SAMPLE	TOTAL	CORR.	DETERM.	SOS	RMS	PCT ERR	F
1	********	0.3081	0.4540	0.1623	17.	507188.0	0.73032	0.53336	0.2194E+10	11359.676	38.076	17.14
2	8794.348	0.7132	0.8765	0.5500	13.	295519.0	0.93248	0.86953	0.1045E+09	2834.918	12.471	73.31
3	********	-0.1711	0.0929	-0.4351	17.	595165.0	-0.31170	0.09716	0.1050E+10	7858.601	22.447	1.61
4	210.800	0.8377	1.5178	0.1576	13.	202281.0	0.58853	0.34636	0.1286E+09	3144.839	20.211	5.83
ALL	1246.268	0.8341	0.8697	0.7984	843.	7486131.0	0.84519	0.71434	0.2060E+11	4943.421	55.667	2103.06

C3(2): COMPARISON OF ASSIGNED VOLUMES WITH ASSIGNED VOLUMES

Purpose

This table presents a comparison of the assignments from the present iteration with the assignments of the previous iteration. This comparison is in the form of a regression equation.

How to Read

ROUTE is the number assigned to the route being investigated. The printout field for route is not separated from the adjacent field to the right, so the route number can appear to be a part of the number in the adjacent column.

INTCPT is the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

UPPER and LOWER are the values of the confidence limits of the equation. It is highly probable that the true mean falls somewhere between these two values.

SAMPLE is the number of assigned volumes that are compared on the particular route.

TOTAL is the total sums of squares used to calculate other terms in regression analysis.

CORR (R) is the coefficient of correlation. This indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

DETERM is the coefficient of determination (R^2). This value indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

SOS is the sum of squares used to calculate other terms in regression analysis.

RMS is the root mean square error used to estimate the standard deviation of the dependent variable.

PCT ERR is the root mean square error expressed as a percent.

F is the heading over the F-ratio value for the F-test of significance of the regression equation. For any particular row, the F entry must be evaluated by the number of "degrees of freedom" (df). The degree of freedom for the regression (df_1) is always one. For the error, the degrees of freedom is the number of samples minus two (df_2 = s-2). Enter an F distribution table for $df_1 = 1$ and df_2 = s-2 to find the critical F-value at certain α-value, which, if smaller than the calculated F-value, means that the regression is significant. Therefore, the test hypothesis will be rejected and concluded that there is significant difference between the assigned volumes and the previous assigned volumes.

How to Use

The table will flag assignments that are varying greatly from one assignment to the next. A value in the F column that is too low or a low coefficient of determination indicates problems with the assignment.

TABLE C3(2) COMPARISON OF ASSIGNED VOLUMES WITH ASSIGNED VOLUMES

COMPARISON OF ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT ITER. 2 DEC 14, 1988'
WITH ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT ITER. 1 DEC 14, 1988'

ROUTE	INTCPT	SLOPE	UPPER	LOWER	SAMPLE	TOTAL	CORR.	DETERM.	SOS	RMS	PCT ERR	F
	18807.301	0.5121	0.6476	0.3765	17.	507188.0	0.88608	0.78514	0.9197E+09	7355.147	24.653	54.81
	22386.714	0.9862	1.1598	0.8126	13.	295519.0	0.95838	0.91850	0.7613E+08	2419.882	10.645	123.97
	3********	-0.1123	0.1906	-0.4152	17.	595165.0	-0.18437	0.03399	0.2722E+10	12654.813	36.147	0.53
	4********	1.1052	1.6336	0.5769	13.	202281.0	0.77748	0.60447	0.1248E+09	3098.611	19.914	16.81
ALL	1024.118	0.8811	0.9266	0.8356	843.	7486131.0	0.79458	0.63135	0.3143E+11	6106.394	68.763	1440.31

C4(2): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

Purpose

This table analyzes the degree of agreement between predicted (assigned) and actual counted volumes by facility type, either

FREEWAY,
ARTERIAL, or
OTHERS.

In addition, comparisons are made for geographical areas, called "sectors," which are groupings of zones. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to read

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS is the number of links which fall into the category listed in a particular row.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular group of links do not match well with the counted volumes. The counted volumes and the final-output assigned volumes for each facility group should agree within ±10%.

TABLE C4(2) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

FACILITY GROUP	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
FREEWAYS	1.617307E+04	1.541960E+04	260.	4.153656E+03	6.965863E-01	6.527437E-01	4.260743E-01	6.969801E+03	4.309508E+01
ARTERIALS	8.589414E+03	9.636738E+03	274.	1.657809E+03	9.289259E-01	8.690326E-01	7.552176E-01	4.643785E+03	5.406404E+01
OTHERS	2.381877E+03	2.707340E+03	309.	1.193771E+03	6.354518E-01	5.806669E-01	3.371740E-01	2.583036E+03	1.084454E+02
SECTOR CLASSIFICATION									
1	9.870270E+03	8.720000E+03	37.	1.251952E+03	7.566204E-01	6.763536E-01	4.574542E-01	5.806223E+03	5.882536E+01
2	9.378105E+03	9.744914E+03	169.	9.568105E+02	9.370875E-01	8.847823E-01	7.828397E-01	3.417619E+03	3.644252E+01
3	1.335555E+04	1.359178E+04	234.	2.926233E+03	7.985848E-01	7.860014E-01	6.177981E-01	7.231445E+03	5.414558E+01
4	6.839559E+03	6.886395E+03	91.	1.909857E+03	7.276109E-01	8.219082E-01	6.755330E-01	5.118770E+03	7.484064E+01
5	4.202039E+03	4.490945E+03	98.	2.516849E+02	1.008858E+00	9.908592E-01	9.818018E-01	8.360029E+02	1.989516E+01
6	7.234664E+03	7.331090E+03	75.	-8.164589E+01	1.024613E+00	9.908851E-01	9.818532E-01	1.092839E+03	1.510559E+01
7	2.811628E+03	3.236953E+03	43.	1.875572E+03	4.841969E-01	4.164045E-01	1.733927E-01	3.474851E+03	1.235886E+02
8	5.432289E+03	6.045082E+03	96.	2.011344E+03	7.425483E-01	6.469327E-01	4.185219E-01	4.655914E+03	8.570813E+01

C5(2): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

Purpose

This table analyzes the degree of agreement between predicted and actual link volumes by volume groupings or ranges. The ALL row presents this analysis for the entire network of links.

Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

VOLUME RANGE lists the minimum and maximum volumes in that particular grouping.

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS lists the number of links in the particular volume range.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE ERROR is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular volume range of links do not match well with the counted volumes. This information will indicate whether traffic on certain groups of roads is being systematically over- or underassigned.

TABLE C5(2) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

VOLUME RANGE	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
0 TO 999	4.859375E+02	1.057406E+03	128.	-1.064683E+02	2.395111E+00	4.153873E-01	1.725466E-01	1.515004E+03	3.117690E+02
1000 TO 4999	2.518587E+03	3.600219E+03	269.	7.971389E+02	1.112957E+00	4.138088E-01	1.712377E-01	2.935016E+03	1.165342E+02
5000 TO 9999	7.193078E+03	8.208418E+03	159.	6.039316E+03	3.015538E-01	1.014699E-01	1.029613E-02	4.599148E+03	6.393852E+01
10000 TO 14999	1.268130E+04	1.275345E+04	107.	-9.702531E+03	1.770793E+00	5.202089E-01	2.706172E-01	4.296145E+03	3.387778E+01
15000 TO 24999	1.919136E+04	1.810939E+04	139.	7.564691E+03	5.494498E-01	1.837068E-01	3.374819E-02	8.148586E+03	4.245964E+01
25000 TO 49999	3.381951E+04	2.915514E+04	41.	-6.373621E+03	1.050540E+00	6.174456E-01	3.812390E-01	9.135930E+03	2.701378E+01
ALL	8.653023E+03	8.880344E+03	843.	1.469383E+03	8.564591E-01	8.451863E-01	7.143399E-01	4.943418E+03	5.712936E+01

ITERATION TIME = 0.0658 MINUTES

W2: ITERATION WEIGHTS APPLIED

Purpose	This small table lists the weights or percentages of the assignment from each iteration that comprise the final weighted output.
How to Read	ITERATION indicates the first through the fifth iterations of the capacity restraint assignment. PER CENT lists the percent of the output from a particular iteration that is combined with portions of the other iterations to form the weighted output.
How to Use	This table reports what iteration percents were preprogrammed. The evaluation of the table is not required.

TABLE W2

ITERATION WEIGHTS APPLIED

ITERATION	PER CENT
1	15
2	15
3	20
4	20
5	30

A1(W): LINK VOLUME TABLE

Purpose

This table lists the final weighted volume assignment. These weighted assignments are formed by combining portions of the assignments from the five iterations. The specified portions are listed in the preceding table W2.

How to Read

ANODE is one end of the link.
BNODE is the other end of the link.
VOLUME is the assigned volume.

Comments

DIR notes that the adjacent volume is a one-way directional volume.
NDIR notes that the adjacent volume is a two-way nondirectional volume.
TURNS notes that the adjacent volume is for a particular movement on the link (which may actually be a "thru" movement). The given movement is from the B-node through the A-node toward the C-node.

How to Use

The final volume assignments are in this table. The analyst should review the link volumes. An unusual volume could indicate a problem with a coding or with the preceding traffic assignment.

```
TABLE A1(1)    LINK VOLUMES
ANODE        BNODE        VOLUME
-----        -----------------
  305   DIR     30          3284 :  one-way vol. from node
                                    305 to 30 is 3284.
  305  NDIR     30          6580 :  two-way vol. between
                                    nodes 305-30 is 6580.
     TURNS ( 30-  31)       44 :  vol. is 44 from node
                                    30 thru 305 toward 31.
     TURNS ( 31- 306)      741 :  vol. is 741 from node
                                    31 thru 305 to 306.
     TURNS (306- 488)     5546 :  vol. is 5546 from node
                                    306 thru 305 to 488.
```

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TABLE A1(W) LINK VOLUMES

ANODE	B NODE	VOLUME	B NODE	VOLUME	B NODE	VOLUME	B NODE	VOLUME	NAME OF INTERSECTION
306 DIR	305	8271	316	8992	307	461	321	1039	
306 NDIR	305	16600	316	17901	307	924	321	2101	
TURNS(	305- 316)	8054	(305- 307)	99	(305- 321)	176	(316- 305)	7999	
TURNS(	316- 307)	204	(316- 321)	705	(307- 305)	99	(307- 316)	207	
TURNS(	307- 321)	157	(321- 305)	173	(321- 316)	731	(321- 307)	158	
307 DIR	154	302	157	47	301	272	306	463	
307 NDIR	154	604	157	96	301	544	306	924	
TURNS(	154- 157)	44	(154- 301)	33	(154- 306)	225	(157- 154)	45	
TURNS(	157- 301)	4	(157- 306)	0	(301- 154)	31	(301- 157)	3	
TURNS(	301- 306)	238	(306- 154)	226	(306- 157)	0	(306- 301)	235	
308 DIR	153	28	155	23	300	1656	309	1752	
308 NDIR	153	56	155	70	300	3362	309	3432	
TURNS(	153- 155)	1	(153- 300)	12	(153- 309)	15	(155- 153)	1	
TURNS(	155- 300)	0	(155- 309)	45	(300- 153)	13	(300- 155)	1	
TURNS(	300- 309)	1692	(309- 153)	14	(309- 155)	21	(309- 300)	1644	
309 DIR	154	34	308	1679	310	1718			
309 NDIR	154	67	308	3432	310	3365			
TURNS(	154- 308)	33	(154- 310)	0	(308- 154)	34	(308- 310)	1718	
TURNS(	310- 154)	0	(310- 308)	1646					
310 DIR	309	1646	311	124	415	2035	312	231	
310 NDIR	309	3365	311	302	415	3945	312	460	
TURNS(	309- 311)	0	(309- 415)	1713	(309- 312)	5	(311- 309)	0	
TURNS(	311- 415)	137	(311- 312)	41	(415- 309)	1645	(415- 311)	80	
TURNS(	415- 312)	185	(312- 309)	1	(312- 311)	44	(312- 415)	184	
311 DIR	152	10	153	77	310	178	417	60	
311 NDIR	152	19	153	187	310	302	417	145	
TURNS(	152- 153)	3	(152- 310)	2	(152- 417)	3	(153- 152)	2	
TURNS(	153- 310)	102	(153- 417)	6	(310- 152)	3	(310- 153)	69	
TURNS(	310- 417)	52	(417- 152)	6	(417- 153)	5	(417- 310)	74	
312 DIR	151	16	154	786	310	229	313	592	
312 NDIR	151	33	154	1557	310	460	313	1194	
TURNS(	151- 154)	14	(151- 310)	3	(151- 313)	0	(154- 151)	14	
TURNS(	154- 310)	197	(154- 313)	561	(310- 151)	2	(310- 154)	198	
TURNS(	310- 313)	31	(313- 151)	0	(313- 154)	573	(313- 310)	29	
313 DIR	312	602	314	722	320	180			
313 NDIR	312	1194	314	1466	320	348			
TURNS(	312- 314)	572	(312- 320)	20	(314- 312)	584	(314- 320)	160	
TURNS(	320- 312)	18	(320- 314)	150					
314 DIR	161	1115	313	744	322	11784	315	10749	
314 NDIR	161	2245	313	1466	322	23439	315	21636	
TURNS(	161- 313)	93	(161- 322)	786	(161- 315)	250	(313- 161)	90	

X1(W): CROSS CLASSIFICATION OF V/C FREQUENCIES FROM LAST TWO ASSIGNMENTS

Purpose

This plot compares the volume/capacity ratio of links from the weighted assignment with those of the fifth iterations. The number of links in each V/C ratio group are indicated.

If the data points are well scattered, then the weighted assignment was much different than the fifth iteration. If the data points tend toward a straight line with origin at (0,0) in the upper left corner, then the fifth iteration and the weighted assignment are similar.

How to Read

This table is really a graph with the (0,0) point in the upper left corner.

V/C is the volume to capacity ratio. The horizontal or X-axis is the present iteration V/C ratio. The vertical or Y-axis is the V/C ratio of the previous iteration. Instead of plotting points in the form of dots, they are represented as numbers, each number being the number of links which have the V/C attributes of the particular row and column.

TOT is the total of a row or a column. There are two rows of totals at the bottom of the plot. The top row is the column total. The bottom row is the row total column transposed.

How to Use

The analyst can determine whether the particular iteration is approaching stability by the degree of scatter. When the plot forms a diagonal passing through the coordinates of (0,0) toward (3,3), then it is stable. If stability is not reached, then the output is not reliable.

Scanning the output will indicate the extent of overcapacity links. One can determine whether capacity limitations will be severe.

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TABLE X1(W) CROSS CLASSIFICATION OF V/C FREQUENCIES FROM LAST TWO ASSIGNMENTS

V/C	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	TOT
0.0	115	16	3	2	2		5	4	3	5	8	8	2	4	3	1	1			1			2				1				1	187
0.1	8	99	14	4	3	2	3	2			3																					138
0.2		10	74	14	1		1		1	2			1																			104
0.3			7	80	9	2	1				1																					100
0.4				6	74	5	1	1	1																							88
0.5				3	16	48	12	6		1		1	1	1																		89
0.6				1	1	11	46	19	2	2			1																			83
0.7						4	11	40	11	6	1	1																				74
0.8					1	1	1	17	38	10	2	1																				71
0.9							1	3	13	24	1		1																			43
1.0								2	2	16	15	7	3																			45
1.1										2	6	7	1																			16
1.2								1	3		4	4	14		1	1																28
1.3									2		4	3	2	4		1																16
1.4									1	1		1	2	4	1																	10
1.5										1	2	3	1	3	3		1															14
1.6												4	3	2	1	1																11
1.7												1	1			1	1															4
1.8													2			1																3
1.9													1	1		1																3
2.0													1																			1
2.1														1	1	1	1		1													5
2.2															1	2																3
2.3																1	1															2
2.4												1			1	1		1														4
2.5														1																		1
2.6																1		1														2
2.7																																0
2.8																																0
2.9																					1											1
3.0															1	1		1	3	1	2		2	1			1					13
TOT	123	125	98	110	107	73	82	95	77	70	47	42	37	21	13	14	5	3	4	2	3	0	4	1	0	0	2	0	0	0	1	
	187	138	104	100	88	89	83	74	71	43	45	16	28	16	10	14	11	4	3	3	1	5	3	2	4	1	2	0	0	1	13	

TOTAL LINKS IN V/C SUMMARY = 1159

X2(W): CROSS CLASSIFICATION OF LINK CAPACITIES BY V/C RATIO FROM LAST TWO ASSIGNMENTS

Purpose

This plot compares link capacities by volume/capacity ratio from the weighted assignment with that of the fifth iterations. The sum of the volumes per link which fall into each V/C ratio group are indicated.

If the data points are well scattered, then the weighted assignment differed greatly from the fifth iteration. If the data points tend toward a straight line with origin at (0,0) in the upper left corner, then little change took place between iterations.

How to Read

This table is really a graph with the (0,0) point in the upper left corner.

V/C is the volume to capacity ratio. The horizontal or X-axis is the present iteration V/C ratio. The vertical or Y-axis is the V/C ratio of the previous iteration. Instead of plotting points in the form of dots, they are represented as numbers, each number being the number of trips (times the "SCALE FACTOR" listed below the graph) which have the V/C attributes of the particular row and column.

TOT is the total of a row or a column. There are two rows of totals at the bottom of the plot. The top row is the column total. The bottom row is the row total transposed.

PCT CAP is written "staggered" on two rows. This printed output is the cumulative percent of capacity held by each column from left to right.

SCALE FACTOR ONE UNIT is the largest trip divided by 999.

TOTAL SCALED TRIP IN SUMMARY is the sum of TOT.

TOTAL LINK CAPACITIES is the sum of the capacities on all links.

How to Use

The analyst can determine whether the particular iteration is approaching stability by the degree of scatter. When the plot forms a diagonal passing through the coordinates of (0,0) toward (3,3), then it is stable. If stability is not reached, then the output is not reliable.

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TABLE X2(W) CROSS CLASSIFICATION OF LINK CAPACITIES BY V/C RATIO FROM LAST TWO ASSIGNMENTS

V/C	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	TOT
0.0	561	127	9	2			7	4	1	4	4	3		1																		723
0.1	40	636	79	21	6	1	8	1			1																					793
0.2		40	597	140			2		7	2			1																			789
0.3			54	949	84	7	6																									1100
0.4				75	999	47		6	2																							1129
0.5				16	196	573	118	53		1			1																			958
0.6				10	12	111	521	204	20	12																						890
0.7						45	102	462	105	25	18	2																				759
0.8							12	167	476	103	2																					760
0.9								3	77	199																						279
1.0								6	15	129	97	87	1																			335
1.1										6	46	84	19																			155
1.2									9		10	11	71			1																102
1.3									1		24	2	5	27																		59
1.4									1			5	1	22	5																	34
1.5										1		12		3	2																	18
1.6												9	12	3																		24
1.7																																0
1.8													1																			1
1.9													1																			1
2.0																																0
2.1																																0
2.2																1																1
2.3																3																3
2.4												1				2																3
2.5																																0
2.6																1																1
2.7																																0
2.8																																0
2.9																																0
3.0															2				1		2											5
TOT	601	803	739	1213	1297	784	776	906	714	482	202	216	113	56	9	8	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	
	723	793	789	1100	1129	958	890	759	760	279	335	155	102	59	34	18	24	0	1	1	0	0	1	3	3	0	1	0	0	0	5	
PCT	6.7		23.9		51.9		69.3		87.4		95.1		99.0		99.8		99.9		99.9		100.0		100.0		100.0		100.0		100.0		100.0	
CAP		15.6		37.4		60.6		79.4		92.8		97.6		99.6		99.9		99.9		100.0		100.0		100.0		100.0		100.0		100.0		

SCALE FACTOR ONE UNIT = 1714 TRIPS

TOTAL SCALED TRIPS IN SUMMARY = 8922

TOTAL LINK CAPACITIES = 15422200.

X3(W): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VMI

Purpose

This table or matrix shows the breakdown of volumes from the weighted assignment according to the various categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles falling into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel in the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 10.8 miles of freeway in Yourtown and 37,999 vehicle-miles of travel on freeways in Yourtown according to this assignment. Also, there are a total of 35.7 miles and 103,577 vehicle-miles in Yourtown, a total of 28.5 miles and 98,778 vehicle-miles on freeways, and a total of 3790.1 miles and 18,974,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	10.8	35.7
	VEH-MILES	37999	103577
:	:	:	:
TOTAL	MILES	28.5	3790.1
	VEH-MILES	98778	18974034

Checking the miles of freeway in each jurisdiction can uncover coding mistakes. When testing alternative facility options, the vehicle-miles should be minimized.

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TABLE X3(W) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	269.6
	VEH-MILES	0	0	0	0	0	0	278786
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	45918
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	93744	0	3966	0	398038
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	181734	0	29370	0	744104
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	40435	0	162139	0	317589
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	39912	0	79991	0	259824
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	234075	0	48357	0	514019
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	99249	0	99249
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25370	0	95862	0	305250
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	659.6
	VEH-MILES	0	0	615270	0	518934	0	2962776

X4(W): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES - VHR

Purpose

This table or matrix shows the breakdown of vehicle-hours of travel in the weighted assignment and the breakdown of the average speed according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones.

VEH-HOURS is the amount of vehicle-hours of travel which the weighted assignment says will be made on or in the particular category described by the row and the column description.

MILES/HOUR is the average velocity of the links that fall into the particular category described by the row and the column headings.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 3,300 vehicle-hours of travel on freeways in Yourtown according to this assignment with an average speed of 49.0 miles per hour. Also, there are a total of 11,450 vehicle-hours and an average of 32.7 miles per hour in Yourtown, a total of 45,928 vehicle-hours and an average of 56.5 miles per hour on freeways, and a total of 45,234,576 vehicle-hours and an average of 35.2 miles per hour in the whole study area. When comparing future alternative networks, one goal might be to minimize vehicle-hours of travel.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	VEH-HOURS	3300	11450
	MILES/HOUR	49.0	32.7
:	:	:	:
TOTAL	VEH-HRS	45928	45234576
	MILES/HOUR	56.5	35.2

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TABLE X4(W) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF ASSIGNED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	VEH-HOURS	0	0	0	0	0	0	10822
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	25.76
1	VEH-HOURS	0	0	0	0	0	0	1657
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	27.71
2	VEH-HOURS	0	0	1972	0	102	0	9839
	MILES/HOUR	0.00	0.00	47.54	0.00	38.76	0.00	40.45
3	VEH-HOURS	0	0	4435	0	784	0	20548
	MILES/HOUR	0.00	0.00	40.98	0.00	37.45	0.00	36.21
4	VEH-HOURS	0	0	688	0	3373	0	6654
	MILES/HOUR	0.00	0.00	58.80	0.00	48.08	0.00	47.73
5	VEH-HOURS	0	0	677	0	1637	0	4793
	MILES/HOUR	0.00	0.00	58.98	0.00	48.88	0.00	54.21
6	VEH-HOURS	0	0	4189	0	949	0	9123
	MILES/HOUR	0.00	0.00	55.88	0.00	50.93	0.00	56.34
7	VEH-HOURS	0	0	0	0	2209	0	2209
	MILES/HOUR	0.00	0.00	0.00	0.00	44.92	0.00	44.92
8	VEH-HOURS	0	0	433	0	2113	0	6301
	MILES/HOUR	0.00	0.00	58.65	0.00	45.37	0.00	48.44
9	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	VEH-HOURS	0	0	0	0	0	0	0
	MILES/HOUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	VEH-HRS	0	0	12392	0	11167	0	71946
	MILES/HOUR	0.00	0.00	49.65	0.00	46.47	0.00	41.18

X5(W): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

Purpose

This table or matrix shows the actual counted volumes on links that did have counts made on them and the miles of link which were counted. The listing is presented according to the various input categories of roadway class (freeway, arterial) or defined jurisdictional area. The analyst must refer to the input coding to determine the identity of the category in a particular column or row. Since this table makes use of actual count data, this table is not applicable when conducting a future year assignment.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles of link on which counts were made that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of travel which were counted that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then the total mileage of the freeway links on which counts were made in Yourtown was 1.8, and there were 3,855 vehicle-miles of travel on these links. Also, there are a total of 3.7 miles and 10,357 vehicle-miles in Yourtown, a total of 2.5 miles and 9,878 vehicle-miles on freeways, and a total of 9.1 miles and 74,034 vehicle-miles in the whole study area.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	1.8	3.7
	VEH-MILES	3855	10357
:	:	:	:
TOTAL	MILES	2.5	9.1
	VEH-MILES	9878	74034

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TABLE X5(W) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF COUNTED VOLUMES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	45394
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	83497	0	4498	0	397430
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	179206	0	30303	0	723997
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	40438	0	157506	0	319901
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	40024	0	69499	0	253840
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	225744	0	50218	0	517421
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	98663	0	98663
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	25081	0	90293	0	305564
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	390.0
	VEH-MILES	0	0	593990	0	500980	0	2662210

X6(W): JURISDICTIONAL/FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

Purpose

This table or matrix shows the miles of the links according to the various input categories of roadway class (freeway, arterial) or a defined jurisdictional area and the twenty-four hour capacity in terms of vehicle-miles on each. The analyst must refer to the input coding to determine the identity of the category in a particular column or row.

How to Read

FUNCTIONAL CLASSIFICATION is coded by the various categories of roadway class ranging from 0 to 9 and A to E.

JUR is the jurisdictional area, in practice usually a group of zones, ranging from 0 to 9 and A to E.

MILES is the number of miles that fall into the particular category described by the row and the column heading.

VEH-MILES is the number of vehicle-miles of capacity that fall into the particular category described by the row and the column heading.

How to Use

If "2" in a column or row heading refers to Yourtown and "8" refers to freeways, then there are 7.8 miles of freeway in Yourtown and 63,790 vehicle-miles of capacity on the freeways in Yourtown. Also, there are a total of 18.5 miles and 138,577 vehicle-miles on freeways and a total of 790.1 miles and 8,974,034 vehicle-miles in the entire study area. This information can be used to compare the impacts of various proposed alternative networks.

		FUNCTIONAL CLASSIFICATION	
JUR	UNIT	... 8	... TOTAL
:	:	:	:
2	MILES	7.8	31.7
	VEH-MILES	63790	193577
:	:	:	:
:	:	:	:
TOTAL	MILES	18.5	790.1
	VEH-MILES	138577	8974034

TABLE X6(W) JURISDICTIONAL / FUNCTIONAL CROSS CLASSIFICATION OF LINK CAPACITIES

JUR	UNIT	FUNCTIONAL CLASSIFICATION A	B	C	D	E	F	TOTAL
0	MILES	0.0	0.0	0.0	0.0	0.0	0.0	80.3
	VEH-MILES	0	0	0	0	0	0	150664
1	MILES	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	VEH-MILES	0	0	0	0	0	0	100350
2	MILES	0.0	0.0	5.6	0.0	3.0	0.0	42.5
	VEH-MILES	0	0	188940	0	21371	0	903977
3	MILES	0.0	0.0	5.8	0.0	5.4	0.0	55.1
	VEH-MILES	0	0	194970	0	48790	0	1123329
4	MILES	0.0	0.0	3.5	0.0	52.3	0.0	63.8
	VEH-MILES	0	0	97244	0	371412	0	639634
5	MILES	0.0	0.0	2.9	0.0	57.4	0.0	69.7
	VEH-MILES	0	0	78963	0	387778	0	813120
6	MILES	0.0	0.0	13.2	0.0	31.2	0.0	58.8
	VEH-MILES	0	0	378832	0	208275	0	1271072
7	MILES	0.0	0.0	0.0	0.0	36.5	0.0	36.5
	VEH-MILES	0	0	0	0	273280	0	273280
8	MILES	0.0	0.0	1.8	0.0	39.1	0.0	58.8
	VEH-MILES	0	0	57628	0	291046	0	793134
9	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
A	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
B	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
C	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
D	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
E	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
F	MILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	VEH-MILES	0	0	0	0	0	0	0
TOTAL	MILES	0.0	0.0	32.8	0.0	224.9	0.0	470.3
	VEH-MILES	0	0	996577	0	1601952	0	6068560

C1(W): COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

Purpose

This table analyzes the degree of agreement between predicted and actual volumes on selected routes. A series of links, which is often traveled in sequence from one link to another, forms a route.

A regression equation is used to evaluate the degree of agreement. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

ROUTE is the number assigned to the route being investigated. The printout field for route is not separated from the adjacent field to the right, so the route number can appear to be a part of the number in the adjacent column.

INTCPT is the β_0 value of the y-axis intercept of the regression equation. In many cases the ideal intercept is 0.0.

SLOPE is the β_1 value or the slope of the regression equation. When comparing two sets of supposedly identical data on x-y axes with the same scale, the ideal slope equals 1.0.

UPPER and LOWER are the values of the confidence limits of the slope. It is highly probable that the true slope falls somewhere between these two values.

SAMPLE is the number of links that comprise the particular route.

TOTAL is the sum of the volumes on the various links of the route.

CORR (R) is the coefficient of correlation. This indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship. A value of -1.0 indicates a perfect inverse relationship.

DETERM (R^2) is the coefficient of determination. This value is the proportion of total variability that is explained by the model with 1.0 being a perfect model.

SOS is the sum of squares used to calculate other terms in regression analysis.

RMS is the root mean square error used to estimate the standard deviation of the dependent variable.

PCT ERR is the root mean square error expressed as a percent of average volume of the routes' links.

F is the heading over the F-ratio value for the F-test of significance of the regression equation. For any particular row, the F entry must be evaluated by the number of "degrees of freedom" (df). The degree of freedom for the regression (df_1) is always one. For the error, the degrees of freedom is the number of samples minus two (df_2 = s-2). Enter an F distribution table for df_1 = 1 and df_2 = s-2 to find the critical F-value at certain α-value, which, if smaller than the calculated F-value, means that the regression is significant. Therefore, the test hypothesis will be rejected and concluded that there is significant difference between the assigned volumes and the counted volumes.

How to Use

The table will flag problems with assignments to the listed routes. A value in the F column that is too low or a low coefficient of determination indicates a low level of agreement between the modeled assignment and the counted volumes.

TABLE C1(W) COMPARISON OF ASSIGNED VOLUMES WITH COUNTED VOLUMES

COMPARISON OF ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT WEIGHTEDDEC 14, 1988'
WITH COUNTED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT DEC 14, 1988'

ROUTE	INTCPT	SLOPE	UPPER	LOWER	SAMPLE	TOTAL	CORR.	DETERM.	SOS	RMS	PCT ERR	F
1	6435.770	0.5645	0.7548	0.3743	17.	417510.0	0.83234	0.69279	0.4562E+09	5180.560	21.094	33.83
2	7082.004	0.7267	0.9231	0.5304	13.	320658.0	0.90947	0.82713	0.4126E+08	1781.526	7.223	52.63
3	********	0.5975	1.0838	0.1112	17.	693716.0	0.52802	0.27880	0.1545E+09	3014.296	7.387	5.80
4	511.498	0.9136	1.3221	0.5051	13.	181204.0	0.79745	0.63593	0.3894E+08	1730.762	12.417	19.21
ALL	135.620	0.9630	0.9781	0.9480	843.	7455934.0	0.97431	0.94927	0.3444E+10	2021.373	22.855	15737.27

C3(W): COMPARISON OF ASSIGNED VOLUMES WITH ASSIGNED VOLUMES

Purpose

This table presents a comparison of the assignments from the weighted assignment with the assignments of the fifth iteration. This comparison is in the form of a regression equation.

How to Read

ROUTE is the number assigned to the route being investigated. The printout field for route is not separated from the adjacent field to the right, so the route number can appear to be a part of the number in the adjacent column.

INTCPT is the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

UPPER and LOWER are the values of the confidence limits of the equation. It is highly probable that the true mean falls somewhere between these two values.

SAMPLE is the number of assigned volumes that are compared on the particular route.

TOTAL is the total sums of squares used to calculate other terms in regression analysis.

CORR (R) is the coefficient of correlation. This indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

DETERM is the coefficient of determination (R^2). This value indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

SOS is the sum of squares used to calculate other terms in regression analysis.

RMS is the root mean square error used to estimate the standard deviation of the dependent variable.

PCT ERR is the root mean square error expressed as a percent.

F is the heading over the F-ratio value for the F-test of significance of the regression equation. For any particular row, the F entry must be evaluated by the number of "degrees of freedom" (df). The degree of freedom for the regression (df_1) is always one. For the error, the degrees of freedom is the number of samples minus two (df_2 = s-2). Enter an F distribution table for $df_1 = 1$ and df_2 = s-2 to find the critical F-value at certain α-value, which, if smaller than the calculated F-value, means that the regression is significant. Therefore, the test hypothesis will be rejected and concluded that there is significant difference between the assigned volumes and the previous assigned volumes.

How to Use

The table will flag weighted route assignments that greatly differed from those of the fifth iteration. A value in the F column that is too low or a low coefficient of determination indicates problems with the assignment on that particular route.

TABLE C3(W) COMPARISON OF ASSIGNED VOLUMES WITH ASSIGNED VOLUMES

COMPARISON OF ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT WEIGHTEDDEC 14, 1988'
WITH ASSIGNED VOLUMES FROM ' TYLER 85-85-1 CAPACITY RESTRAINT ITER. 5 DEC 14, 1988'

ROUTE	INTCPT	SLOPE	UPPER	LOWER	SAMPLE	TOTAL	CORR.	DETERM.	SOS	RMS	PCT ERR	F
1	1529.329	0.9140	0.9783	0.8498	17.	417510.0	0.99049	0.98106	0.1626E+08	977.956	3.982	777.06
2	709.126	0.9831	1.0391	0.9271	13.	320658.0	0.99538	0.99079	0.3104E+07	488.662	1.981	1183.07
3	********	1.7163	2.2976	1.1350	17.	693716.0	0.83105	0.69064	0.2011E+09	3439.498	8.429	33.49
4	-245.616	1.0110	1.0340	0.9880	13.	181204.0	0.99926	0.99852	0.2202E+06	130.144	0.934	7418.06
ALL	-16.146	0.9985	1.0076	0.9894	843.	7455934.0	0.99105	0.98219	0.1213E+10	1199.380	13.561	46377.16

C4(W): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

Purpose

This table analyzes the degree of agreement between predicted (assigned) and actual counted volumes by facility type, either

FREEWAY,
ARTERIAL, or
OTHERS.

In addition, comparisons are made for geographical areas, called "sectors," which are groupings of zones. Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to read

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS is the number of links which fall into the category listed in a particular row.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular group of links do not match well with the counted volumes. The counted volumes and the final-output assigned volumes for each facility group should agree within ±10%.

TABLE C4(W) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY FACILITY GROUP

FACILITY GROUP	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
FREEWAYS	1.617307E+04	1.599855E+04	260.	6.364037E+00	9.888152E-01	9.458174E-01	8.945705E-01	2.730906E+03	1.688550E+01
ARTERIALS	8.589414E+03	9.201859E+03	274.	6.442170E+02	9.963010E-01	9.697778E-01	9.404690E-01	2.211931E+03	2.575182E+01
OTHERS	2.381877E+03	2.508094E+03	309.	2.110079E+02	9.644015E-01	9.635154E-01	9.283619E-01	7.303696E+02	3.066360E+01
SECTOR CLASSIFICATION									
1	9.870270E+03	1.006295E+04	37.	-4.033459E+02	1.060385E+00	9.730747E-01	9.468743E-01	1.721954E+03	1.744585E+01
2	9.378105E+03	9.485805E+03	169.	3.216123E+02	9.771900E-01	9.604505E-01	9.224651E-01	1.944004E+03	2.072917E+01
3	1.335555E+04	1.384251E+04	234.	6.666729E+02	9.865437E-01	9.654341E-01	9.320629E-01	2.962408E+03	2.218109E+01
4	6.839559E+03	6.713219E+03	91.	6.824517E+02	8.817479E-01	9.784965E-01	9.574553E-01	1.971489E+03	2.882478E+01
5	4.202039E+03	4.304090E+03	98.	2.031514E+02	9.759401E-01	9.957401E-01	9.914982E-01	5.427192E+02	1.291562E+01
6	7.234664E+03	7.402812E+03	75.	-1.922090E+01	1.025898E+00	9.907042E-01	9.814948E-01	1.114981E+03	1.541165E+01
7	2.811628E+03	2.956186E+03	43.	2.240487E+02	9.717279E-01	9.767268E-01	9.539952E-01	6.474268E+02	2.302675E+01
8	5.432289E+03	5.482551E+03	96.	2.906919E+02	9.557403E-01	9.694571E-01	9.398470E-01	1.244542E+03	2.291006E+01

C5(W): COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

Purpose

This table analyzes the degree of agreement between predicted and actual link volumes by volume groupings or ranges. The ALL row presents this analysis for the entire network of links.

Since a comparison is being made with actual counted data, this table has no application when conducting a future year assignment.

How to Read

VOLUME RANGE lists the minimum and maximum volumes in that particular grouping.

AVERAGE GROUND COUNT PER LINK is the average counted volume of those links which fall into the category listed in a particular row.

AVERAGE ASSIGNED VOLUME PER LINK is the average predicted volume of those links which fall into the category listed in a particular row.

NUMBER OF OBSERVATIONS lists the number of links in the particular volume range.

INTERCEPT is the β_0 value or the value of the y-axis intercept of the regression equation.

SLOPE is the β_1 value or the slope of the regression equation.

COEFFICIENT OF CORRELATION (R) indicates the level of a linear relationship between two variables with 0.0 being no relationship and 1.0 a perfect relationship.

COEFFICIENT OF DETERMINATION (R^2) indicates the proportion of total variability that is explained by the model with 1.0 being a perfect model.

ROOT MEAN SQUARE is the root mean square error used to estimate the standard deviation of the dependent variable.

PERCENT ROOT MEAN SQUARE ERROR is the root mean square error expressed as a percent of average ground count per link.

How to Use

A low coefficient of determination indicates that the assigned volumes on that particular volume range of links do not match well with the counted volumes. This information will indicate whether traffic on certain groups of roads is being systematically over- or underassigned.

TABLE C5(W) COMPARISON OF ASSIGNED VOLUMES AND GROUND COUNTS BY VOLUME RANGE

VOLUME RANGE	AVERAGE GROUND COUNT PER LINK	AVERAGE ASSIGNED VOLUME PER LINK	NUMBER OF OBSERVATIONS	INTERCEPT	SLOPE	COEFFICIENT OF CORRELATION	COEFFICIENT OF DETERMINATION	ROOT MEAN SQUARE	PERCENT ROOT MEAN SQUARE
0 TO 999	4.859375E+02	6.119922E+02	128.	8.951299E+01	1.075198E+00	5.616012E-01	3.153958E-01	4.289243E+02	8.826736E+01
1000 TO 4999	2.518587E+03	2.870163E+03	269.	-1.837461E+02	1.212548E+00	6.849614E-01	4.691721E-01	1.496954E+03	5.943625E+01
5000 TO 9999	7.193078E+03	7.568004E+03	159.	2.775512E+03	6.662644E-01	4.674503E-01	2.185098E-01	1.960825E+03	2.725987E+01
10000 TO 14999	1.268130E+04	1.254854E+04	107.	-7.628887E+02	1.049688E+00	6.206396E-01	3.851934E-01	1.900009E+03	1.498275E+01
15000 TO 24999	1.919136E+04	1.946037E+04	139.	-1.647127E+03	1.099843E+00	7.069159E-01	4.997301E-01	3.012418E+03	1.569673E+01
25000 TO 49999	3.381951E+04	3.303722E+04	41.	-7.156437E+03	1.188475E+00	8.969744E-01	8.045631E-01	3.692880E+03	1.091938E+01
ALL	8.653023E+03	8.844523E+03	843.	3.149900E+02	9.857286E-01	9.743053E-01	9.492708E-01	2.021373E+03	2.336031E+01

I1: CORRIDOR INTERCEPT

Purpose

The person running the assignment can request that a number of cutlines be constructed and the link volumes across the cutlines be reported. The output for each requested cutline is reported on a separate sheet of paper.

How to Read

ANODE is one end of a link.
BNODE is the other end of a link.
RT is the assigned route number this link is on.
F is the functional class. Refer to the input coding to determine what codes denote what class.
SPEED is the originally assigned link speed.
COUNT is the actual counted volume on a link; if a count was not made on the link, then 0 appears.
CAP is the input link capacity.
VOL 1 is the assigned volume from the first iteration.
VOL 2 is the assigned volume from the second iteration.
VOL 3 is the assigned volume from the third iteration.
VOL 4 is the assigned volume from the fourth iteration.
VOL 5 is the assigned volume from the fifth iteration.
VOL 6 is the assigned volume from the weighted assignment.
PCT COUNT is the percentage of VOL 6 / COUNT.
PCT CAP is the percentage of VOL 6 / CAP.

How to Use

The inability to perfectly model traffic behavior leads to differences between predicted and counted volumes in the best of assignments. However, the sums of predicted and counted volumes on a group of competing links (i.e., a corridor) should come close to agreeing.

The level of agreement can be checked by reviewing these tables. The base year counted and assigned volumes should agree within ±10%.

TYLER 85-85-1 CAPACITY RESTRAINT WEIGHTEDDEC 8, 1988

TABLE 11 CORRIDOR INTERCEPT 1

ANODE	BNODE	RT	F	SPEED	COUNT	CAP	VOL 1	VOL 2	VOL 3	VOL 4	VOL 5	VOL 6	PCT COUNT	PCT CAP
568	569	0	3	45	23000	33500	29028	45839	25762	30661	29734	31435	136.7	93.8
569	578	0	3	35	6500	7100	6841	64	8511	8472	7821	6779	104.3	95.5
576	577	0	4	35	3000	18300	494	4379	3400	4275	3319	3262	108.7	17.8
586	587	0	4	30	3100	18300	4675	7479	2760	7399	4331	5154	166.3	28.2
597	598	0	5	30	9000	9600	6575	3455	7120	4897	5287	5494	61.0	57.2
630	631	0	3	30	21300	24300	27390	5013	29818	12549	24991	20831	97.8	85.7
640	641	0	4	30	5100	21300	1670	16141	3596	9425	4047	6490	127.3	30.5
642	644	0	3	30	19200	21300	19780	14218	18707	17243	18888	17956	93.5	84.3
653	654	0	4	30	2400	21300	2777	2732	3412	2345	2533	2738	114.1	12.9
656	675	0	3	30	13800	24300	9819	12978	11401	10712	12985	11738	85.1	48.3
673	681	0	3	35	14500	21300	17647	18631	13176	21275	15145	16875	116.4	79.2
682	683	0	4	30	2800	9600	2646	2088	2943	2983	1926	2473	88.3	25.8
683	687	0	4	35	3000	18300	2400	3717	1899	1869	3543	2734	91.1	14.9
712	713	0	C	45	23200	33500	24077	20964	24936	25092	24061	23980	103.4	71.6
TOTAL					149900	282000	155819	157698	157441	159197	158611	157939	105.4	56.0

R1: ROUTE PROFILE

Purpose

This table lists the volumes on the sequential links of a route so they can be analyzed. The output for each requested route is reported on a separate page. Each link of the route is listed on a row.

How to Read

ANODE is the end of a link with the smaller number.
BNODE is the end of a link with the larger number. The practice of listing the smaller number link in the left column may obscure the sequential numbering of links. Just mentally reverse the order of the listed nodes to help make the sequential listing apparent from one row to the next.
F is the functional class. Refer to the input coding to determine what codes denote what class.
DIST is the length of the link.
SPEED is the originally assigned link speed.
COUNT is the actual counted volume on a link; if a count was not made on the link, then 0 appears.
CAP is the input link capacity.
VOL 1 is the assigned volume from the first iteration.
VOL 2 is the assigned volume from the second iteration.
VOL 3 is the assigned volume from the third iteration.
VOL 4 is the assigned volume from the fourth iteration.
VOL 5 is the assigned volume from the fifth iteration.
VOL 6 is the assigned volume from the weighted assignment.

How to Use

These tables can be used to assess the validity of assignments on sequential links of a specified route.

TYLER 85-85-1 CAPACITY RESTRAINT

WEIGHTEDDEC 14, 1988

TABLE R1 ROUTE 1 PROFILE

ANODE	BNODE	F	DIST	SPEED	COUNT	CAP	VOL 1	VOL 2	VOL 3	VOL 4	VOL 5	VOL 6
364	372	C	0.25	40	14500	33500	16195	18708	14186	16862	16110	16278
371	372	C	0.38	45	15000	33500	17975	19457	14922	17611	16859	17179
371	521	C	0.22	45	15500	33500	17284	19761	15423	18238	17470	17530
520	521	C	0.21	45	16800	33500	17284	19761	15423	18238	17470	17530
520	522	C	0.38	45	18100	33500	22126	26581	19435	23614	22507	22668
522	523	C	0.38	45	18500	33500	22142	26597	19451	23630	22523	22684
523	524	C	0.33	45	19000	33500	22595	27047	19882	24086	22978	23133
524	541	3	0.15	45	21000	33500	24542	29318	21862	26120	25030	25184
540	541	3	0.12	45	23800	33500	24542	29318	21862	26120	25030	25184
540	565	3	0.16	45	21000	33500	24873	28325	21428	26156	25159	25044
565	566	3	0.12	45	20700	33500	25897	28958	22226	27000	26023	25880
566	567	3	0.07	45	21600	33500	29599	40548	27045	32102	31254	31728
567	568	3	0.26	45	22300	33500	28575	45364	26032	30224	29239	31114
568	569	3	0.13	45	23000	33500	29028	45839	25762	30661	29734	31435
569	570	3	0.30	45	22900	33500	30393	37440	28293	31165	30647	31261

L1: LIST OF VOLUMES AND SPEEDS FOR UPDATED LINKS

Purpose

This table presents the assignments from each of the iterations. The reviewer can analyze the stability of the assignment.

How to Read

ANODE is the end of a link with the smaller number.
BNODE is the end of a link with the larger number.
DIST is the length of the link.
FC is the functional class. Refer to the input coding to determine what codes denote what class.
COUNT is the actual counted volume on a link; if a count was not made on the link, then 0 appears.
CAP is the input link capacity.
VOL 1 is the assigned volume from the first iteration.
VOL 2 is the assigned volume from the second iteration.
VOL 3 is the assigned volume from the third iteration.
VOL 4 is the assigned volume from the fourth iteration.
VOL 5 is the assigned volume from the fifth iteration.
VOL 6 is the assigned volume from the weighted assignment.
SPD is the link speed used for the listed iteration.
V/C is the volume to capacity ratio which results from the assignment of that iteration.
., +, #, or * are used to flag links whose assigned volumes grossly exceed capacity.

Symbol	V/C Ratio Range
.	0.00 to 1.24
+	1.25 to 1.49
#	1.50 to 1.99
*	2.00 to 10.0

How to Use

These tables can be used to check length and capacity coding for each link and evaluate the stability of each link assignment. If the volume and/or speed on a link are fluctuating greatly from iteration to iteration, the particular assignment is very sensitive to small changes.

TYLER 85-85-1 CAPACITY RESTRAINT WEIGHTED DEC 8, 1988

TABLE L1 LIST OF VOLUMES AND SPEEDS FOR UPDATED LINKS

ANODE	BNODE	DIST	FC	CAPACITY	VOL 1 SPD 1	VOL 2 SPD 2	VOL 3 SPD 3	VOL 4 SPD 4	VOL 5 SPD 5	VOL 6 SPD 6	V/C 1	V/C 2	V/C 3	V/C 4	V/C 5	V/C 6
301	307	2.08	E	7200	549 40.0	536 43.5	545 43.5	544 43.5	545 43.5	544 42.9	0.1	0.1	0.1	0.1	0.1	0.1
304	402	0.22	1	49000	21447 55.0	20164 60.0	20176 60.0	19958 60.0	20129 60.0	20307 60.0	0.4	0.4	0.4	0.4	0.4	0.4
305	402	0.39	C	26900	17415 54.4	16092 57.1	16053 57.1	15833 58.5	16002 58.5	16204 57.1	0.6	0.6	0.6	0.6	0.6	0.6
305	306	1.71	C	26900	17425 54.9	17174 58.0	16065 58.0	16969 58.3	16011 58.3	16600 57.6	0.6	0.6	0.6	0.6	0.6	0.6
306	316	0.49	C	29500	19173 55.5	17686 58.8	17818 58.8	17501 58.8	17693 58.8	17901 58.8	0.6	0.6	0.6	0.6	0.6	0.6
306	307	0.69	E	7200	929 39.8	916 43.1	925 43.1	924 43.1	925 43.1	924 42.7	0.1	0.1	0.1	0.1	0.1	0.1
306	321	0.38	E	4000	2543 35.1	1320 37.4	2552 38.0	1332 37.4	2481 38.0	2101 37.4	0.6	0.3	0.6	0.3	0.6	0.5
308	309	1.44	E	7200	2268 49.9	3587 54.3	3563 54.0	3784 54.0	3613 54.0	3432 53.3	0.3	0.5	0.5	0.5	0.5	0.5
309	310	0.82	E	7200	2201 50.2	3520 54.7	3496 54.1	3717 54.1	3546 54.1	3365 53.5	0.3	0.5	0.5	0.5	0.5	0.5
310	311	1.27	E	7200	404 39.9	412 43.3	245 43.3	269 43.3	256 43.3	302 42.8	0.1	0.1	0.0	0.0	0.0	0.0
310	415	2.09	E	7200	2654 44.9	4233 48.8	4068 48.4	4297 48.2	4130 48.2	3945 47.9	0.4	0.6	0.6	0.6	0.6	0.5
310	312	0.98	E	7200	217 40.0	503 43.6	495 43.6	513 43.6	500 43.6	460 42.9	0.0	0.1	0.1	0.1	0.1	0.1
311	417	0.50	E	7200	253 40.0	241 43.5	94 43.5	103 43.5	105 43.5	145 42.9	0.0	0.0	0.0	0.0	0.0	0.0
312	313	1.22	E	7200	92 40.0	1388 43.6	1396 43.6	1378 43.6	1391 43.6	1194 43.1	0.0	0.2	0.2	0.2	0.2	0.2
313	314	0.18	E	8200	330 40.0	1852 43.2	1634 43.2	1616 43.2	1629 43.2	1466 43.2	0.0	0.2	0.2	0.2	0.2	0.2
313	320	0.90	E	5600	314 40.0	540 43.5	314 43.5	314 43.5	314 43.5	348 42.9	0.1	0.1	0.1	0.1	0.1	0.1

SELECTED LINKS

CUTOFF PARAMETERS

Purpose	This table appears when using an "all-or-nothing" assignment and will not appear with the usual capacity-restraint output. This is a printout of input values. The intent of the input is to reduce the amount of printed output zonal interchange volumes. For a given node, the most restrictive of the three controls will apply. Either no more than a certain percent of the zonal interchanges on a given link will be printed, interchanges with a volume less than the cutoff will not be printed, or no more than a certain number of zonal interchanges will be printed.
How to Read	ANODE is one end of a link. BNODE is the other end of the link. PER CENT (.GT.) is the value of the cutoff parameter. VOLUME (.LT.) is the value of the cutoff parameter. ZONE PAIRS (.GT.) is the value of the cutoff parameter.
How to Use	This output is simply a reference to document certain inputs.

SELECTED LINK		CUT OFF PARAMETERS		
ANODE	BNODE	PER CENT (.GT.)	VOLUME (.LT.)	ZONE PAIRS (.GT.)
789	822	25	0	32767
850	851	100	32767	32767
534	610	100	0	15

SELECTED LINKS

TRIP INTERCHANGES LOADED ON LINK

Purpose	This table lists the zones whose trips traverse certain links.
How to Read	TRIP INTERCHANGES LOADED ON LINK is the link under consideration. AZONE is one zone of a pair with trips on the link. BZONE is the other zone of a pair with trips on the link. TOTAL is the total number of two-way trips between the two zones on the link under consideration. AZONE-BZONE is the number of assigned trips from zone A to zone B on the link under consideration. BZONE-AZONE is the number of assigned trips from zone B to zone A on the link under consideration.
How to Use	This output can be checked to determine whether the placement of zonal interchanges on certain links seems reasonable.

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TRIP INTERCHANGES LOADED ON LINK 789 822 , 822 789

AZONE	BZONE	ZONE TO ZONE TRIPS TOTAL	AZONE-BZONE	BZONE-AZONE
94	79	1151	576	575
92	38	826	413	413
94	38	765	382	383
35	79	743	372	371
97	38	642	321	321
94	91	624	312	312
92	53	586	293	293
240	229	520	260	260
94	53	452	227	225
94	229	439	220	219
35	91	420	210	210
35	53	418	209	209
92	70	413	207	206
94	237	403	201	202
247	234	400	200	200
92	48	350	175	175
92	52	348	174	174
97	53	340	170	170
30	79	329	165	164
36	79	328	164	164
94	70	322	161	161
97	70	322	161	161
92	37	315	158	157
247	237	310	155	155
92	45	307	154	153
35	237	295	148	147
92	73	285	142	143
		50523		

LISTING OF TRIPS FOR THIS SELECTED LINK CUT OFF AT 25.0 PER CENT

WINDOWING

S1: INPUT EXTERNAL STATION LINKS

Purpose	This table is part of the "Windowing" output. It lists the links intersected by the cordon line used to define the windowed area.
How to Read	Each row of the output lists the link node endpoints.
How to Use	The analyst can check the listed links to insure that the cordon line was drawn as intended. The external station links must be selected so that a centroid does not become an external station. To insure that a centroid does not become an external station, the cordon line must intersect a centroid connector such that the centroid is inside the cordoned subarea. The last single number (one node or centroid number) in a row tells the computer which side of the cordoned area to use (i.e., inside or outside).

DEC 16, 1988

TABLE S1 INPUT EXTERNAL STATION LINKS

472	1
465	1
464	475
476	2
477	478
485	3
484	483
486	497
496	4
510	4
500	499
609	608
531	5
532	501
613	12
628	12
627	615
625	626
624	502
624	11
623	622
658	10
659	661
670	9
668	9
666	665
667	8
471	473
6	

WINDOWING

S2: NODE TYPES FOUND FROM EXTERNAL STATION LINKS

Purpose	This table describes the relationship of the nodes to the windowed area.
How to Read	This table is a matrix-chart. There are fifty entries per row. The top or horizontal axis scale is numbered in increments of five to assist in determining the number of the node in each of the fifty columns. By using the codes printed immediately above the horizontal scale, one can determine the relationship of any node to the windowed portion of the network. E: denotes an external station node. I : denotes a node inside the subarea. N: denotes a node not connected to the network. O: denotes a node outside the subarea.
How to Use	The table can be reviewed to make sure the windowed area was coded as intended.

DEC 16, 1988

TABLE S2 NODE TYPES FOUND FROM EXTERNAL STATION LINKS

(I = INSIDE, O = OUTSIDE, N = NOT IN NETWORK, E = EXTERNAL STATION, U = UNDETERMINED)

NODE	1	6	11	16	21	26	31	36	41	46	50
1	I I I I I I I I I I I I O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
51	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
101	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
151	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
201	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
251	O O N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N O O O O
301	O N N O O O O O O O O O O O O O O O O O O O O O O N O O O O O O O O O O O O O O O O O O O O O O O O O O O
351	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O N
401	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
451	O O O O O O O O O O O O O E E O O O O O E E E I I I E E I I I I I I E E E O O O O O O O O E I I I E
501	I I O O O O O O O E O O O O O O O O O O O O O O O O O O O O N E E O O O O O O O O O O O O O O O O O O O
551	O O O O O O O O O O N O O O N O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O I O O O O
601	O O O N N N I I E O O O E I I I I I I I I I E E E I E E O O O O O O O O O O O O O O O O O O O O O O O O
651	O O O O O O O O E E O I I I I I E E E D E N O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
701	N N N N N N N N O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
751	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
801	O O O O O N N N N O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O N O O O O
851	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
901	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
999	O O O O O O O O O O O O O O O O O O O O O N O O O O O O O O O O O O O O O O O O O O O O O O O O O O O

27 EXTERNAL STATIONS
70 NODES/ZONES NOT CONNECTED IN NETWORK
44 NODES/ZONES IN SUBAREA
857 NODES/ZONES OUTSIDE OF SUBAREA
0 NODES/ZONES UNDETERMINED

WINDOWING

S3: RENUMBERED SUBAREA CENTROIDS AND EXTERNAL STATIONS

Purpose	This table lists the renumbering which occurred as a result of the windowing.
How to Read	NEW ZONE is the zone number of the "windowed" network. OLD ZONE is the zone number of the "regular" network.
How to Use	This table is used to relate the windowed output to the regular network numbering scheme.

DEC 16, 1988

TABLE S3

RENUMBERED SUBAREA CENTROIDS AND EXTERNAL STATIONS
(E INDICATES AN EXTERNAL STATION)

NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE	NEW ZONE	OLD ZONE
1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
9	9	10	10	11	11	12	12	13E	464	14E	465	15E	471	16E	472
17E	476	18E	477	19E	484	20E	485	21E	486	22E	496	23E	500	24E	510
25E	531	26E	532	27E	609	28E	613	29E	623	30E	624	31E	625	32E	627
33E	628	34E	658	35E	659	36E	666	37E	667	38E	668	39E	670		

WINDOWING

S4: TRIPS BY NUMBER OF CORDON CROSSINGS

Purpose	This output tells how many trips crossed the windowing cordon line and tells the trip origin with respect to the cordon line.
How to Read	NUMBER OF CORDON CROSSINGS indicates how many times the trips on that row crossed the cordon line. TRIPS FOR ORIGIN INSIDE is the number of trips with their origin inside of the cordon line. TRIPS FOR ORIGIN OUTSIDE is the number of trips with an origin outside of the cordon line.
How to Use	This output tells the travel activity with respect to the cordon.

TABLE S4 TRIPS BY NUMBER OF CORDON CROSSINGS

NUMBER OF CORDON CROSSINGS	TRIPS FOR ORIGIN INSIDE	TRIPS FOR ORIGIN OUTSIDE
0	6724.	465076.
1	41335.	41224.
2	273.	7317.

CUMULATIVE TIME = 0.0357 MINUTES TIME SINCE LAST QUERY = 0.0273 MINUTES

$STOP

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

201 1

FOCUSING

SUBAREA SECTOR EQUALS

Purpose	This table lists the sector centroids and also the centroids which are equated to the sector centroids.
How to Read	The numbers to the right of the EQUAL on this table may specify ranges of centroids by placing the beginning of the range on the card in one field and immediately following this field by a field with the last centroid of the range with a minus sign in front of the centroid number.
How to Use	Trees will not be built for centroids equated to sector centroids. The exception to this is that trees will be built for all zones equated to the same zone (sector centroids). An entry is generated for each sector centroid, and if it is additionally equated to itself, a warning message will be printed.

SUBAREA SECTOR EQUALS

```
 58 EQUAL   59  -61   64   65  215  216
 71 EQUAL   57   62   63   66  -70   72  219
 73 EQUAL   74   78  -80   91
 75 EQUAL   75
 81 EQUAL   76   77   82
 86 EQUAL   83   84   87
 97 EQUAL   88  -90   92  -96   98
100 EQUAL   85   99  101 -103  105  109
107 EQUAL  104  106  108  111 -113
114 EQUAL  110  115  116
119 EQUAL  117  118  120  122  131  220
128 EQUAL  121  123  127  129  130  140  141
136 EQUAL  133 -135  137
139 EQUAL  132  138  152
151 EQUAL  148 -150  154  158  159  161
155 EQUAL  153  156  157
162 EQUAL  160  163  170
173 EQUAL  171  172  174
187 EQUAL  185  186  188  189  197  198
193 EQUAL  190 -192  194 -196
201 EQUAL  200  203  204  214
218 EQUAL  202  217
```

CUMULATIVE TIME = 0.0275 MINUTES TIME SINCE LAST QUERY = 0.0005 MINUTES

$STOP

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

201	252

FOCUSING

E1: CENTROID TO SECTOR EQUIVALENCES

Purpose	This table lists the internal and external zone numbers. The sector centroids and also the centroids which are equated to the sector centroids are listed in this table.
How to Read	The numbers to the left of the TO on this table indicate all zone numbers of centroids. The numbers to the right of the TO on this table specify either the zone centroids or the sector centroids. If the zone centroids are within the defined subarea or in the transition ring area, the numbers remain the same as the zone numbers. If the zone centroids are located in the outside of the transition ring area, the zone numbers to the left of the TO are aggregated to the sector centroids indicated to the right of the TO on this table.
How to Use	Trees will not be built for centroids equated to sector centroids. The exception to this is that trees will be built for all zones equated to the same zone (sector centroids). An entry is generated for each sector centroid, and if it is additionally equated to itself, a warning message will be printed.

TABLE E1 CENTROID TO SECTOR EQUIVALENCES

```
   1TO   1,    2TO   2,    3TO   3,    4TO   4,    5TO   5,    6TO   6,    7TO   7,    8TO   8,    9TO   9,   10TO  10,
  11TO  11,   12TO  12,   13TO  13,   14TO  14,   15TO  15,   16TO  16,   17TO  17,   18TO  18,   19TO  19,   20TO  20,
  21TO  21,   22TO  22,   23TO  23,   24TO  24,   25TO  25,   26TO  26,   27TO  27,   28TO  28,   29TO  29,   30TO  30,
  31TO  31,   32TO  32,   33TO  33,   34TO  34,   35TO  35,   36TO  36,   37TO  37,   38TO  38,   39TO  39,   40TO  40,
  41TO  41,   42TO  42,   43TO  43,   44TO  44,   45TO  45,   46TO  46,   47TO  47,   48TO  48,   49TO  49,   50TO  50,
  51TO  51,   52TO  52,   53TO  53,   54TO  54,   55TO  55,   56TO  56,   57TO  71,   58TO  58,   59TO  58,   60TO  58,
  61TO  58,   62TO  71,   63TO  71,   64TO  58,   65TO  58,   66TO  71,   67TO  71,   68TO  71,   69TO  71,   70TO  71,
  71TO  71,   72TO  71,   73TO  73,   74TO  73,   75TO  75,   76TO  81,   77TO  81,   78TO  73,   79TO  73,   80TO  73,
  81TO  81,   82TO  81,   83TO  86,   84TO  86,   85TO 100,   86TO  86,   87TO  86,   88TO  97,   89TO  97,   90TO  97,
  91TO  73,   92TO  97,   93TO  97,   94TO  97,   95TO  97,   96TO  97,   97TO  97,   98TO  97,   99TO 100,  100TO 100,
 101TO 100,  102TO 100,  103TO 100,  104TO 107,  105TO 100,  106TO 107,  107TO 107,  108TO 107,  109TO 100,  110TO 114,
 111TO 107,  112TO 107,  113TO 107,  114TO 114,  115TO 114,  116TO 114,  117TO 119,  118TO 119,  119TO 119,  120TO 119,
 121TO 128,  122TO 119,  123TO 128,  124TO 124,  125TO 125,  126TO 126,  127TO 128,  128TO 128,  129TO 128,  130TO 128,
 131TO 119,  132TO 139,  133TO 136,  134TO 136,  135TO 136,  136TO 136,  137TO 136,  138TO 139,  139TO 139,  140TO 128,
 141TO 128,  142TO 142,  143TO 143,  144TO 144,  145TO 145,  146TO 146,  147TO 147,  148TO 151,  149TO 151,  150TO 151,
 151TO 151,  152TO 139,  153TO 155,  154TO 151,  155TO 155,  156TO 155,  157TO 155,  158TO 151,  159TO 151,  160TO 162,
 161TO 151,  162TO 162,  163TO 162,  164TO 164,  165TO 165,  166TO 166,  167TO 167,  168TO 168,  169TO 169,  170TO 162,
 171TO 173,  172TO 173,  173TO 173,  174TO 173,  175TO 175,  176TO 176,  177TO 177,  178TO 178,  179TO 179,  180TO 180,
 181TO 181,  182TO 182,  183TO 183,  184TO 184,  185TO 187,  186TO 187,  187TO 187,  188TO 187,  189TO 187,  190TO 193,
 191TO 193,  192TO 193,  193TO 193,  194TO 193,  195TO 193,  196TO 193,  197TO 187,  198TO 187,  199TO 199,  200TO 201,
 201TO 201,  202TO 218,  203TO 201,  204TO 201,  205TO 205,  206TO 206,  207TO 207,  208TO 208,  209TO 209,  210TO 210,
 211TO 211,  212TO 212,  213TO 213,  214TO 201,  215TO  58,  216TO  58,  217TO 218,  218TO 218,  219TO  71,  220TO 119,
 221TO 221,  222TO 222,  223TO 223,  224TO 224,  225TO 225,  226TO 226,  227TO 227,  228TO 228,  229TO 229,  230TO 230,
 231TO 231,  232TO 232,  233TO 233,  234TO 234,  235TO 235,  236TO 236,  237TO 237,  238TO 238,  239TO 239,  240TO 240,
 241TO 241,  242TO 242,  243TO 243,  244TO 244,  245TO 245,  246TO 246,  247TO 247,  248TO 248,  249TO 249,  250TO 250,
 251TO 251,  252TO 252,
```

DEFAULT EQUIVALENCES HAVE BEEN SET TO SECTOR219

LAST NODE NUMBER FOR THIS NETWORK IS 998
NUMBER OF NODES CONNECTED IN THIS NETWORK = 928
NUMBER OF ONE WAY LINKS = 3078

TREE BUILD TIME = 0.01 MINUTES.

LIST	511	510	500	609	531	532	613	612	629	630	631	632
LIST	632	634	635	636	637	647	648	649	678	679	680	681
LIST	681	673	672	669	668	666	667	471	472	467	466	465
LIST	465	464	476	477	485	484	486	496	512	511	0	0
DIRECT	647	646	0	0	0	0	0	0	0	0	0	0
END	0	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF TURNING MOVEMENTS TO SAVE = 2147

FRATAR

$SUM TRIP ENDS (for base year)

Purpose	This table lists the existing trips by zone. If the Fratar model is used only for external trips, then the listing will be for the external thru trips. This table facilitates checking the input.
How to Read	ZONE NO. is the centroid node number of the zone. NO. TRIPS ENTERING is the input number of trips from this zone entering the study area. NO. TRIPS EXITING is the input number of trips leaving the study area to this zone. NO. INTRAZONAL is the number of trips within a zone. NO. TRIP ENDS is the sum of trips entering and trips exiting. NO. ZONES ENTERING is the number of zones with nonzero interchanges. NO. ZONES EXITING is the number of zones with nonzero interchanges.
How to Use	The analyst should check this output to verify the input data. If the Fratar model is being used only for external trip analysis, then the entries for all zones other than the external should be zero.

FRATAR TYLER 85-85-1 EXTERNAL THRU DEC 16, 1988

ZONE NO.	NO.TRIPS ENTERING	NO.TRIPS EXITING	NO. INTRAZONAL	NO. TRIP ENDS	NO.ZONES ENTERING	NO.ZONES EXITING
208	0	0	0	0	0	0
209	0	0	0	0	0	0
210	0	0	0	0	0	0
211	0	0	0	0	0	0
212	0	0	0	0	0	0
213	0	0	0	0	0	0
214	0	0	0	0	0	0
215	0	0	0	0	0	0
216	0	0	0	0	0	0
217	0	0	0	0	0	0
218	0	0	0	0	0	0
219	0	0	0	0	0	0
220	0	0	0	0	0	0
221	760	760	0	1520	20	18
222	1	1	0	2	1	1
223	181	181	0	362	22	23
224	7	7	0	14	7	7
225	21	21	0	42	13	12
226	7	7	0	14	6	6
227	77	78	0	155	11	13
228	674	674	0	1348	18	19
229	121	121	0	242	23	22
230	1	1	0	2	1	1
231	9	9	0	18	9	9
232	51	51	0	102	19	18
233	21	21	0	42	9	10
234	87	87	0	174	21	22
235	7	7	0	14	6	5
236	14	14	0	28	8	7
237	69	69	0	138	13	15
238	107	107	0	214	11	11
239	13	13	0	26	9	9
240	195	194	0	389	20	21
241	18	18	0	36	11	10
242	2	2	0	4	2	2
243	75	75	0	150	18	20
244	3	2	0	5	3	2
245	38	38	0	76	8	7
246	0	0	0	0	0	0
247	132	132	0	264	19	19
248	9	9	0	18	5	6
249	73	74	0	147	18	17
250	12	12	0	24	7	7
251	1	1	0	2	1	1
252	10	10	0	20	7	6
TOTALS	2796	2796	0	5592		

FRATAR

D1: CONVERGENCE DISTRIBUTION AT THE END OF ITERATION

Purpose	The Fratar model employs growth factors to multiply present trips in order to estimate future trips. The nature of the Fratar model is such that the predicted trips from A to B may not equal the number of trips from B to A. Successive iterations are used to make the model converge toward agreement. This output indicates the level of agreement.
How to Read	FACTOR is the ratio of estimated to actual trips. NUMBER is the number of zones with a given factor.
How to Use	Most of the zones should have a factor of near 1.0 after the final iteration. If there are very many zones with low or high factors, the model is not properly converging. The input trip interchange table and growth factors should then be reviewed.

TABLE D1(9) CONVERGENCE DISTRIBUTION AT THE END OF ITERATION 9

	FACTOR	NUMBER
LESS THAN	0.90	4
	0.90	1
	0.91	1
	0.92	2
	0.93	0
	0.94	2
	0.95	0
	0.96	0
	0.97	0
	0.98	0
	0.99	0
	1.00	231
	1.01	5
	1.02	2
	1.03	1
	1.04	0
	1.05	0
	1.06	1
	1.07	0
	1.08	0
	1.09	0
	1.10	0
GREATER THAN	1.10	2

FRATAR

$SUM TRIP ENDS (for future year)

Purpose	This table lists the projected trips by zone. If the Fratar model is used only for external trips, then the listing will be for the external thru trips. This table facilitates checking the input.
How to Read	ZONE NO. is the centroid node number of the zone. NO. TRIPS ENTERING is the projected number of trips from this zone entering the study area. NO. TRIPS EXITING is the projected number of trips leaving the study area to this zone. NO. INTRAZONAL is the number of trips within a zone. NO. TRIP ENDS is the sum of trips entering and trips exiting. NO. ZONES ENTERING is the number of zones with nonzero interchanges. NO. ZONES EXITING is the number of zones with nonzero interchanges.
How to Use	This table gives the projected number of trips to and from the external zones. The values should be input to the appropriate zones for running the assignment models.

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ZONE NO.	NO.TRIPS ENTERING	NO.TRIPS EXITING	NO. INTRAZONAL	NO. TRIP ENDS	NO.ZONES ENTERING	NO.ZONES EXITING
208	0	0	0	0	0	0
209	0	0	0	0	0	0
210	0	0	0	0	0	0
211	0	0	0	0	0	0
212	0	0	0	0	0	0
213	0	0	0	0	0	0
214	0	0	0	0	0	0
215	0	0	0	0	0	0
216	0	0	0	0	0	0
217	0	0	0	0	0	0
218	0	0	0	0	0	0
219	0	0	0	0	0	0
220	0	0	0	0	0	0
221	1122	1122	0	2244	20	18
222	1	1	0	2	1	1
223	276	276	0	552	22	23
224	7	8	0	15	7	7
225	39	38	0	77	13	12
226	11	11	0	22	6	6
227	117	119	0	236	11	13
228	965	965	0	1930	18	19
229	179	177	0	356	23	22
230	1	1	0	2	1	1
231	11	10	0	21	9	9
232	77	76	0	153	19	18
233	28	29	0	57	9	10
234	122	121	0	243	21	22
235	13	10	0	23	6	5
236	27	27	0	54	8	7
237	88	89	0	177	13	15
238	135	136	0	271	11	11
239	18	20	0	38	9	9
240	248	250	0	498	20	21
241	29	28	0	57	11	10
242	2	2	0	4	2	2
243	120	120	0	240	18	20
244	5	4	0	9	3	2
245	56	55	0	111	8	7
246	0	0	0	0	0	0
247	171	170	0	341	19	19
248	13	15	0	28	5	6
249	113	114	0	227	18	17
250	19	19	0	38	7	7
251	1	1	0	2	1	1
252	12	12	0	24	7	6
TOTALS	4026	4026	0	8052		