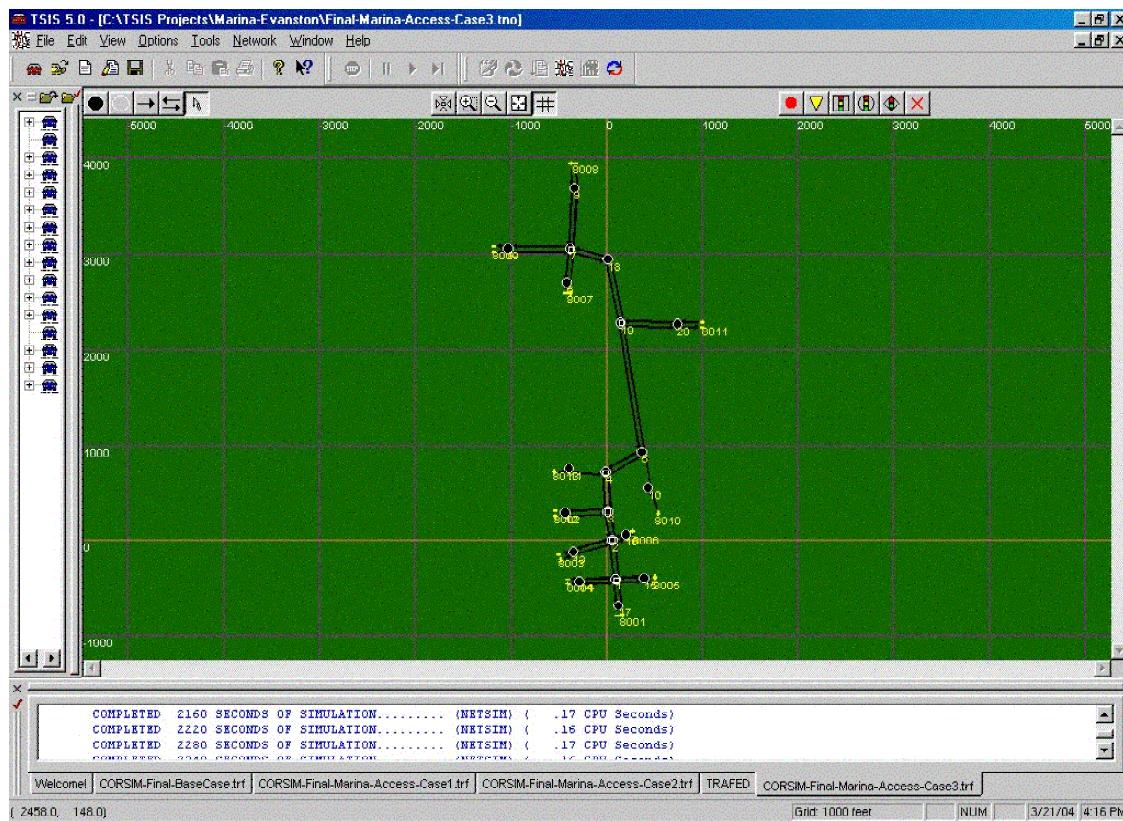


Traffic Impact Analysis and Evaluation for the Proposed Marina in Evanston, IL

Final Report

April 2004



**Prepared by
USACE Chicago District
and
Department of Civil Engineering
NORTHWESTERN UNIVERSITY**



NORTHWESTERN
UNIVERSITY

Evaluation of the Traffic Impact of the Proposed Marina in Evanston, IL

INTRODUCTION AND STUDY OBJECTIVE

The US Army Corps of Engineers has undertaken a traffic impact analysis study for a proposed marina in the south lake shore of Evanston, IL. The proposed marina will be designed to house a total of 365 berths and it is expected to attract a certain amount of vehicular traffic. In response to concerns for the increased traffic the US Army Corps of Engineers is undertaking a study to assess these impacts under at least an expected and a worst case traffic generation scenario.

Northwestern University is assisting the Corps in performing this study (under TASK ORDER by analyzing the data obtained. Standard traffic engineering microscopic and mesoscopic simulation-assignment tools (VISTA and CORSIM) as well as capacity analysis (HCS) procedures will be employed and the impact on the Level of Service of the Adjacent Streets will be assessed, as explained in the tasks below.

METHODOLOGY

The traffic impact analysis methodology was performed in three (3) major steps as follows:

Step A BASE CASE: Assessment of CURRENT traffic conditions

- A1. Identify the impact area by the proposed facility. If the area is small and does not present (or create) new alternative route scenarios then USE the CORSIM microsimulation software produced by Federal Highway Administration; if it is a large area use VISTA to establish routing choices (it does not apply in this case). Use the Highway Capacity Software to evaluate the Level-Of-Service for each intersection.
- A2. Collect current peak hour traffic volume data and traffic signal data for impacted intersections (based on existing data and field studies)
- A3. Evaluate prevailing conditions—Traffic delay per vehicle for each intersection using CORSIM and LOS using HCS.

Step B WORST CASE SCENARIO: Assessment of FUTURE traffic conditions

- B1. Identify the potential worst case scenarios by estimating
 - the highest possible number of vehicles that could be attracted to the proposed facility
 - the worst possible spatio-temporal vehicle distribution

- the worst day of the week
- B2. Superimpose these volumes on top of the current demand
 B3. Evaluate future worst case scenario (Traffic delay per vehicle for each intersection using CORSIM and LOS using HCS)

Step C EXPECTED CASE SCENARIO: Assessment of FUTURE traffic conditions

- C1. Identify the most likely case scenario by estimating the most likely traffic patterns on the highest peak hour and possible number of vehicles that could be attracted to the proposed facility
- C2. Superimpose these volumes on top of the current demand
 C3. Evaluate future expected case scenario (Traffic delay per vehicle for each intersection using CORSIM and LOS using HCS)

Figure 1 depicts the identified impacted area and the current traffic volumes during the peak hour on the weekday (Monday through Thursday). Note that this is the highest possible hourly traffic volumes that could be observed on these roadways. To establish upper bounds on the impact of the proposed facility's, we will use this weekday volume in all three scenarios above.

Table 1 presents the expected temporal distribution of the proposed marina activity, where it can be seen that the highest possible daily number of boats to be used will be realized on June-August Saturdays at the level of 238 and the highest weekday daily number of boats to be used on June-August at the level of 92.

RESULTS

Figures 2 and 3 depicts the increased volumes the Worst Case and the Most Likely Scenario. These volumes were produced as follows:

- ***Worst Case: 50% Incoming from Northbound, 50% Incoming from Southbound, 80% entering the marina, 20% Leaving the marina when 100% of the boats berthed are used.***

We will assume a Saturday June-August boat activity (238) and weekday peak hour traffic volumes as appear in Figure 1, though there is no such peak hour during Saturdays.

We will further assume that each boat generates 2 vehicles (476 total attracted vehicles); this means that a total of (476x2=) 952 vehicles will enter and exit the proposed access road to the marina. We will use a k-factor of 25%, which is the percentage of daily traffic that is expected to be realized during the peak hour that will be used as design hourly volume; note that this is much higher than the recommended by the Institute of Traffic Engineers (10-12% usually). Next, the computations of the additional volumes for this scenario are summarized as follows:

(Highest Possible Attracted Daily Traffic Demand)x(Number of Vehicles/Boat)x2x(K-factor) which is 238 vehicles, distributed as follows: 193 vehicles entering the Marina and 48 leaving the marina during the peak hour. These vehicles have been distributed according to the prevailing volumes. Note that the numbers again have been rounded upwards whenever fractional vehicles had to be assigned to the various roadways. Figure 2 depicts the final Worst Case Scenario demand.

NOTE:

1. The worst case assumes asymmetric volumes entering/leaving the marina, because this increases the impact (worst case). In addition, assuming the entering vehicles to be more than the exiting is a worst case in terms of an impact of the vehicles traveling on Sheridan Rd. because these vehicles may need to wait for a Southbound left turning vehicle into the Marina access road. The opposite would have impacted mostly the marina generated traffic rather than the Sheridan Rd. through traffic.
 2. It was assumed that there will be no turning bay for the Southbound left turning vehicles
 3. No traffic signal is warranted based on the peak hour volumes observed in the simulator.
- ***Most Likely Case: 50% incoming from NB, 50% outgoing to NB, 50% incoming from South and 50% outgoing to South when 25% of the boats berthed are used.***
- We will assume a Wednesday June-August boat activity (92) and weekday peak hour traffic volumes as appear in Figure 1.
- We will further assume that each boat generates 2 vehicles (184 total attracted vehicles); this means that a total of (184x2=) 368 vehicles will enter and exit the proposed access road to the marina. We will use a k-factor of 25% as in the worst case scenario, which means (following the computations outlined before) that 92 vehicles will be generated and attracted during the peak hour on June-August Wednesday: 46 vehicles entering the Marina and 46 leaving the marina during the peak hour. These vehicles have been distributed according to the prevailing volumes as before. Figure 3 depicts the final Expected Case Scenario demand.

NOTE:

1. It is assumed that the Wednesday Marina traffic peak hour will coincide with the general commuter traffic peak hour.
2. It was assumed that there will be no turning bay for the Southbound left turning vehicles
3. No traffic signal is warranted based on the peak hour volumes observed in the simulator.

Table 2 presents the Delays (seconds) per vehicle at each intersection as produced by CORSIM

Table 3 presents the LOS per intersection as produced by HCS

ANALYSIS

Based on the results in Tables 2 and 3, it appears that the impact of the traffic demand attracted by the proposed Marina is minimal or negligible under the worst case scenario as well as the expected case scenario. All intersections appear to be currently operating during the peak hour at a level of service (LOS) C or better (less than 25 seconds delay per vehicle) and none of the LOS changes by the additional traffic. Note that LOS C is recommended to be the design LOS by the Highway Capacity Committee of the Transportation Research Board (and accepted as such by all States); this means that LOS C is considered to be the optimum LOS under Peak Hour conditions for all transportation facilities including signalized intersections. The proposed T-type intersection on Sheridan Rd does not appear to have enough traffic to warrant for a traffic signal, with a delay per vehicle less than 5 seconds under all scenarios. Under the most likely scenario the delays per vehicle at the most traveled intersections of Sheridan/Howard and Sheridan/South are statistically identical to the base case.

No signal is warranted at the T-type access road or any geometric improvements seem to be necessary, though a left turning bay Southbound on Sheridan could improve flow and maintaining constant speed. The gaps on both South and North bound streams are sufficient for the exiting vehicles to be accommodated without a signal.

The extended outputs from the analysis software are included in the Appendix, where all relevant measures of performance are listed.

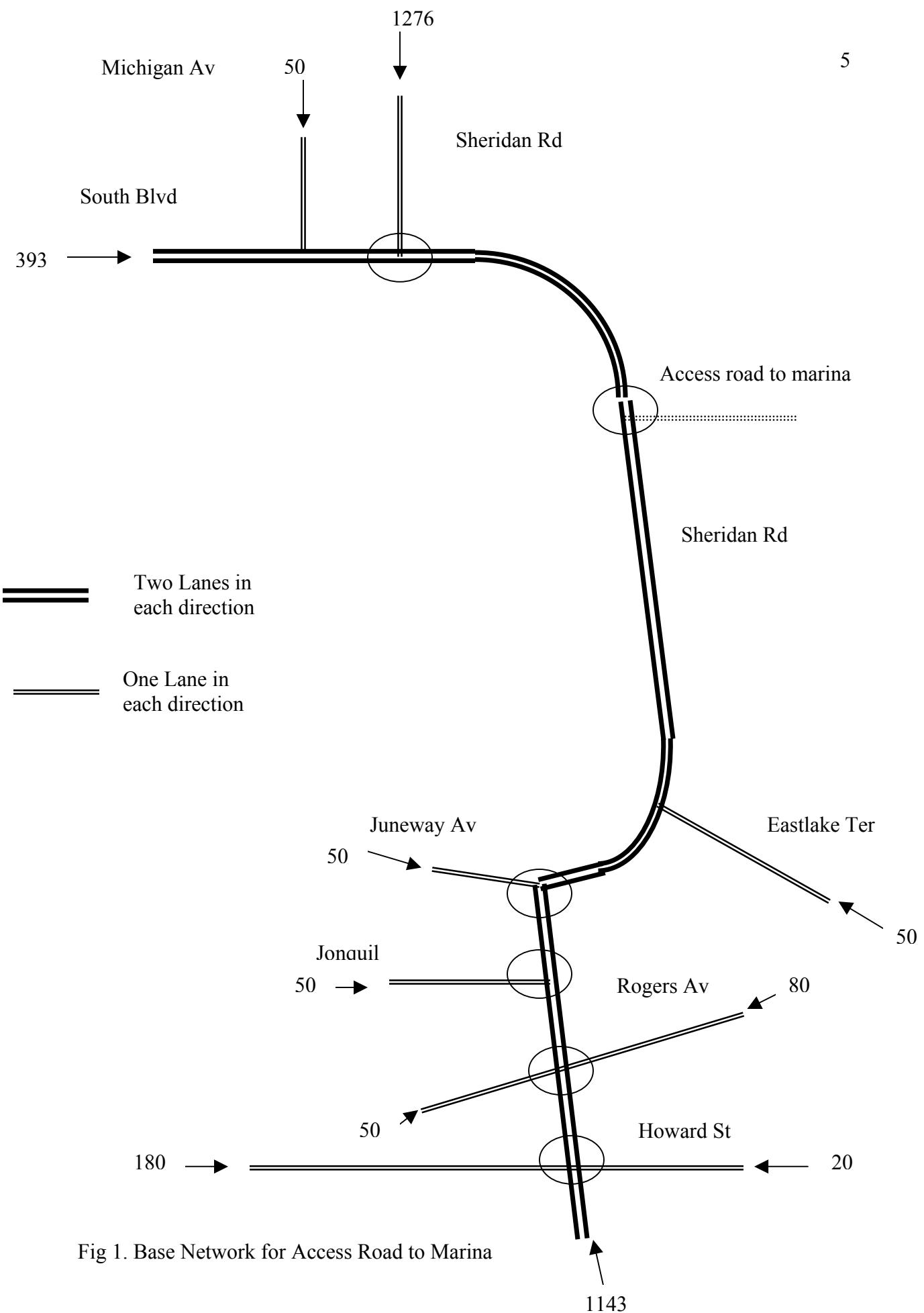


Fig 1. Base Network for Access Road to Marina

1143

Table 1. The (%) of the total **365** BERTHED boats are expected to be used

Month	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
May	45	5	10	15	10	35	50
Ju-Aug	60	10	15	25	15	55	65
Sept	45	5	10	15	10	35	50
Oct	25	5	10	10	10	20	30

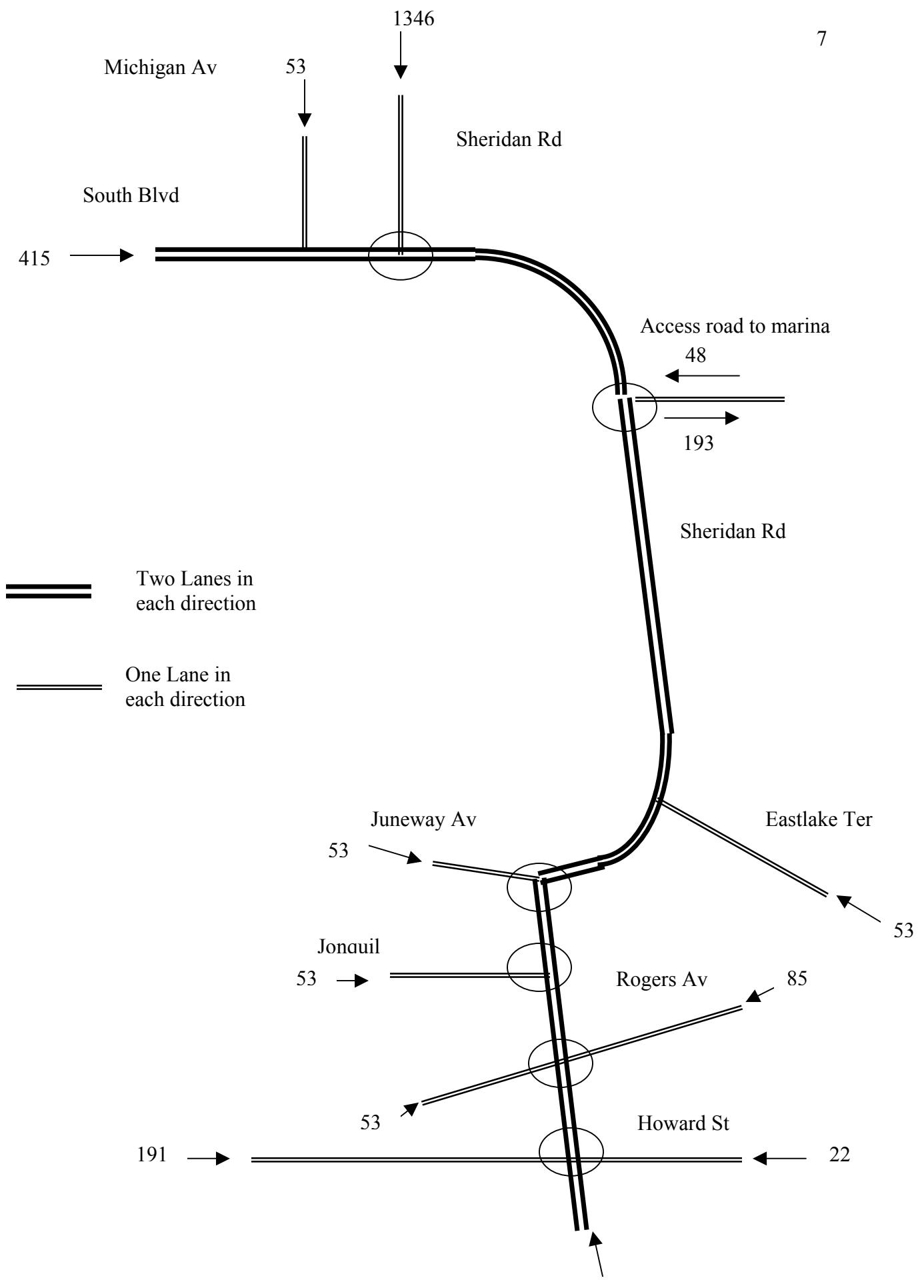


Fig.2 Traffic Volumes for Worst Case Scenario

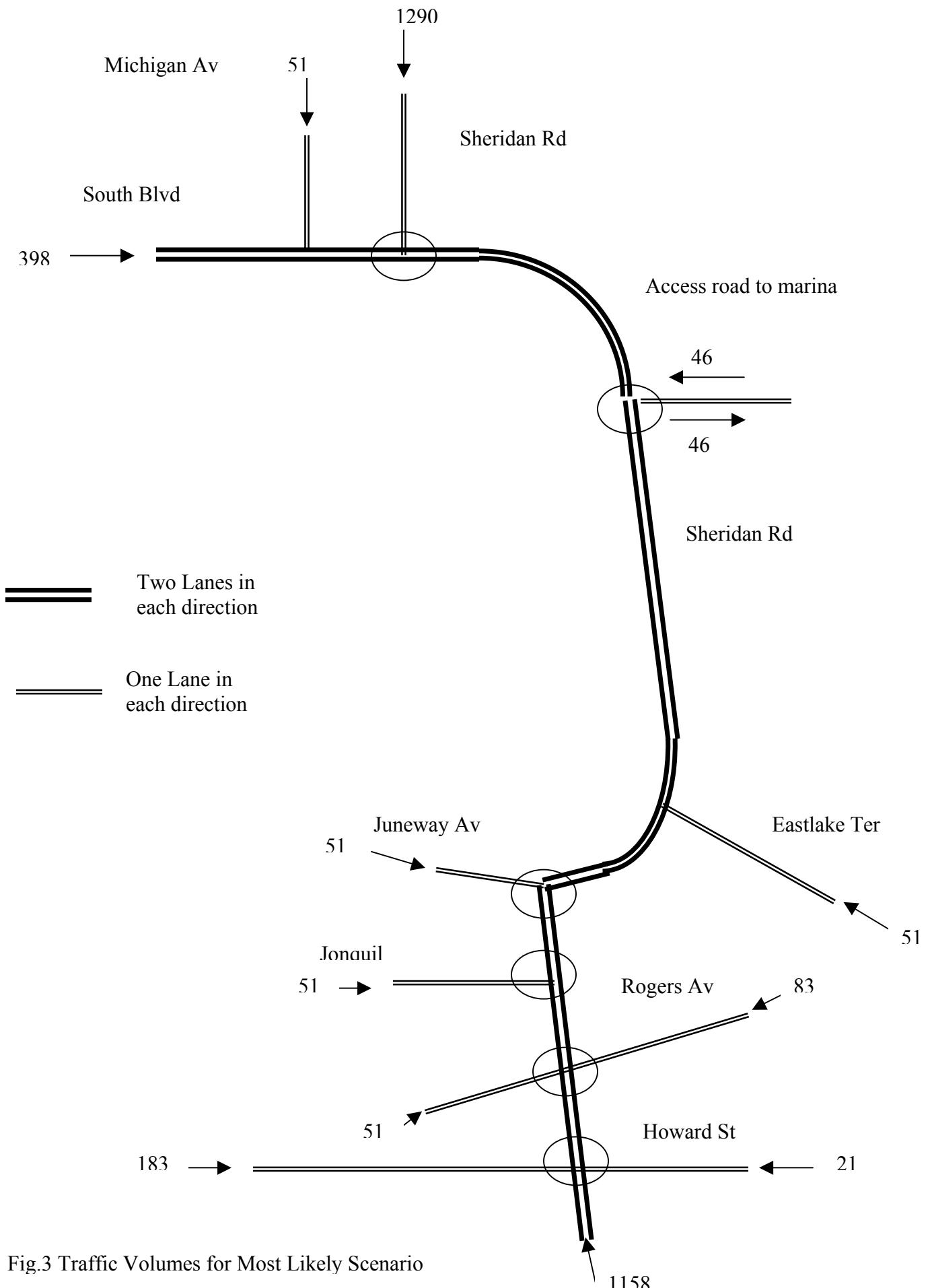


Table 2. DELAYS (Seconds): Delays (seconds) per vehicle at each intersection as produced by CORSIM

Intersection	Base case	Worst Case Scenario	Most Likely Scenario
Sheridan-Howard	12.82	12.88	12.85
Sheridan-Rogers	6.85	7.90	7.13
Sheridan-Jonquil	4.14	4.88	4.77
Sheridan-Juneway	9.72	9.80	9.76
Sheridan-South Blvd	19.14	20.12	19.61
Sheridan-Marina Access Road	-	2.84	2.04

Table 3: HCS Level-Of-Service Results

Intersection	Base case	Worst Case Scenario	Most Likely Scenario
Sheridan-Howard	B	B	B
Sheridan-Rogers	B	B	B
Sheridan-Jonquil	A	A	A
Sheridan-Juneway	B	B	B
Sheridan-South Blvd	C	C	C
Sheridan-Marina Access Road	-	A	A

Appendix I

Base Case

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VERSION 5.0
RELEASE DATE MAY 2001

TRAF SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FHWA OFFICE OF OPERATIONS RESEARCH, DEVELOPMENT AND TECHNOLOGY

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261 :	8	184	3849		195		
262 :	9	872	4489		195		
263 :	10	1640	1353		195		
264 :	11	816	1553		195		
265 :	12	776	1089		195		
266 :	13	864	681		195		
267 :	14	932	377		195		
268 :	15	1600	401		195		
269 :	16	1416	851		195		
270 :	17	1330	120		195		
271 :	6	797	3496		195		
272 :	18	1224	3738		195		
273 :	19	1356	3067		195		
274 :	20	1950	3056		195		
275 :	21	498	3848		195		
276 :	22	476	4222		195		
277 :	1	0	0		210		

0SEQ.# :-----1-----2-----3-----4-----5-----6-----7-----8

TRAF SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FHWA OFFICE OF OPERATIONS RESEARCH, DEVELOPMENT AND TECHNOLOGY

0
 0
 Created by TSIS Sat Apr 10 18:22:11 2004 from TNO Version 52

0
 0
 DATE = 3/19/2004
 USER =
 AGENCY =

RUN CONTROL DATA

VALUE	RUN PARAMETERS AND OPTIONS													
0	0	RUN IDENTIFICATION NUMBER												
0	1	RUN TYPE CODE = (1, 2, 3) TO RUN (SIMULATION, ASSIGNMENT, BOTH) (-1,-2,-3) TO CHECK (SIMULATION, ASSIGNMENT, BOTH) ONLY												
0	NETSIM ENVIRONMENTAL OPTIONS													
	0	FUEL/EMISSION RATE TABLES ARE NOT PRINTED												
	0	SIMULATION: PERFORMED							ENVIRONMENTAL MEASURES: CALCULATED					
	0	RATE TABLES: EMBEDDED							TRAJECTORY FILE: NOT WRITTEN					
0	0	CODE = (0,1,2) FOR UNIFORM DISTRIBUTION, NORMAL DISTRIBUTION, ERLANG DISTRIBUTION												
0	0	INPUT UNITS CODE = (0,1) IF INPUT IS IN (ENGLISH, METRIC) UNITS												
0	0	OUTPUT UNITS CODE = (0,1,2,3) IF OUTPUT IS IN (SAME AS INPUT, ENGLISH, METRIC, BOTH) UNITS												
0	800	CLOCK TIME AT START OF SIMULATION (HHMM)												
0	0	SIGNAL TRANSITION CODE = (0,1,2,3) IF(No, IMMEDIATE, 2-CYCLE, 3-CYCLE) TRANSITION WAS REQUESTED												
0	7581	RANDOM NUMBER SEED												
0	7781	RANDOM NUMBER SEED TO GENERATE TRAFFIC STREAM FOR NETSIM OR LEVEL I SIMULATION												
	7981	RANDOM NUMBER SEED TO GENERATE EMISSION HEADWAYS FOR NETSIM SIMULATION												
	3600	DURATION (SEC) OF TIME PERIOD NO. 1												
0	60	LENGTH OF A TIME INTERVAL, SECONDS												
0	3	MAXIMUM INITIALIZATION TIME, NUMBER OF TIME INTERVALS												
0	0	NUMBER OF TIME INTERVALS BETWEEN SUCCESSIVE STANDARD OUTPUTS												
0	0	TIME INTERMEDIATE OUTPUT WILL BEGIN AT INTERVALS OF 0 SECS. FOR 0 SECS. FOR MICROSCOPIC MODELS												
0	0	NETSIM MOVEMENT-SPECIFIC OUTPUT CODE = (0,1) (IF NOT, IF) REQUESTED FOR NETSIM SUBNETWORK												
0	0	NETSIM GRAPHICS OUTPUT CODE = (0,1) IF GRAPHICS OUTPUT (IS NOT, IS) REQUESTED												
1*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	

TIME PERIOD 1 - NETSIM DATA

NETSIM LINKS																			
		-LANES-				-CHANNEL-													
LINK	LENGTH FT / M	F	C			B234567	DESTINATION LEFT	THRU	RGHT	DIAG	NODE	OPP.	TIME SEC	Q DIS SEC	FREE MPH/KMPH	RTOR CODE	PED CODE	LANE ALIGN -MENT	STREET NAME
		L	PKT	GRD	LINK R															PCT	TYPE
(1, 2)	414/ 126	2	0	0	0	1	0000000	13	3	16	0	3	2.0	1.8	30/ 48	0	0	1-1*	
(2, 1)	414/ 126	2	0	0	0	1	0000000	15	17	14	0	17	2.0	1.8	30/ 48	0	0	1-1*	
(3, 2)	303/ 92	2	0	0	0	1	0000000	16	1	13	0	1	2.0	1.8	30/ 48	0	0	1-1*	
(2, 3)	303/ 92	2	0	0	0	1	0000000	12	4	0	0	4	2.0	1.8	30/ 48	0	0	1-1*	
(4, 3)	410/ 125	2	0	0	0	1	0000000	0	2	12	0	0	2.0	1.8	30/ 48	0	0	1-1*	
(3, 4)	410/ 125	2	0	0	0	1	4400000	0	0	5	0	0	2.0	1.8	30/ 48	0	0	1-1*	
(5, 4)	433/ 132	2	0	0	0	1	1100000	3	0	0	0	11	2.0	1.8	30/ 48	0	0	1-1*	
(4, 5)	433/ 132	2	0	0	0	1	1100000	19	0	0	0	0	2.0	1.8	30/ 48	0	0	1-1*	
(8009, 8)	0/ 0	2	0	0	0	1	0000000	0	21	0	0	0	2.0	1.8	0/ 0	0	0	1-1*	
(8008, 9)	0/ 0	2	0	0	0	1	0000000	0	7	0	0	0	2.0	1.8	0/ 0	0	0	1-1*	
(9, 7)	645/ 197	1	0	0	0	1	0000000	18	6	21	0	6	2.0	1.8	30/ 48	0	0	1-1*	

(7, 9)	645/ 197	1 0 0 0 0	1	0000000	0 8008	0 0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8010, 10)	0/ 0	2 0 0 0 0	1	0000000	0 5	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(10, 5)	377/ 115	1 0 0 0 0	1	0000000	4 19	0 0 0 19 2.0	1.8 30/ 48	0 0 0 1-1*
(8013, 11)	0/ 0	2 0 0 0 0	1	0000000	0 4	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(11, 4)	386/ 118	1 0 0 0 0	1	0000000	0 5	3 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8002, 12)	0/ 0	2 0 0 0 0	1	0000000	0 3	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(12, 3)	444/ 135	1 0 0 0 0	1	0000000	4 0	2 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(3, 12)	444/ 135	1 0 0 0 0	1	0000000	0 8002	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8003, 13)	0/ 0	2 0 0 0 0	1	0000000	0 2	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(13, 2)	418/ 127	1 0 0 0 0	1	0000000	3 16	1 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(2, 13)	418/ 127	1 0 0 0 0	1	0000000	0 8003	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8004, 14)	0/ 0	2 0 0 0 0	1	0000000	0 1	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(14, 1)	372/ 113	1 0 0 0 0	1	0000000	2 15	17 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(1, 14)	372/ 113	1 0 0 0 0	1	0000000	0 8004	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8005, 15)	0/ 0	2 0 0 0 0	1	0000000	0 1	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(15, 1)	296/ 90	1 0 0 0 0	1	0000000	17 14	2 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(1, 15)	296/ 90	1 0 0 0 0	1	0000000	0 8005	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8006, 16)	0/ 0	2 0 0 0 0	1	0000000	0 2	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(16, 2)	160/ 49	1 0 0 0 0	1	0000000	1 13	3 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(2, 16)	160/ 49	1 0 0 0 0	1	0000000	0 8006	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(17, 1)	270/ 82	2 0 0 0 0	1	0000000	14 2	15 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(1, 17)	270/ 82	2 0 0 0 0	1	0000000	0 8001	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8001, 17)	0/ 0	2 0 0 0 0	1	0000000	0 1	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(8007, 6)	0/ 0	2 0 0 0 0	1	0000000	0 7	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(6, 7)	351/ 107	2 0 0 0 0	1	0000000	21 9	18 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(7, 6)	351/ 107	2 0 0 0 0	1	0000000	0 8007	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(18, 7)	406/ 124	2 0 0 0 0	1	4000000	6 21	9 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(7, 18)	406/ 124	2 0 0 0 0	1	4400000	0 0	19 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(19, 18)	684/ 208	2 0 0 0 0	1	1100000	7 0	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(18, 19)	684/ 208	2 0 0 0 0	1	0000000	20 5	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(19, 5)	1360/ 415	2 0 0 0 0	1	4400000	0 0	4 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(5, 19)	1360/ 415	2 0 0 0 0	1	0000000	0 18	20 0 0 2.0	1.8 30/ 48	0 0 0 1-1*
(8011, 20)	0/ 0	2 0 0 0 0	1	0000000	0 19	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*
(20, 19)	594/ 181	1 0 0 0 0	1	0000000	5 0	18 0 0 2.0	1.8 30/ 48	1 0 0 1-1*

1

NETSIM LINKS (CONT.)

		-LANES-				-CHANNEL-				NETSIM LINKS (CONT.)									
LINK	LENGTH FT / M	F L	P K	G R	D L	C R	DESTINATION NODE				O P P. N O D E	LOST TIME SEC	Q DIS HDWY. SEC	FREE SPEED MPH/KMPH		R T O R CODE	P E D CODE	A L I G N T -M E N T	LANE STREET NAME
		L	L	R	PCT	TYPE	B234567	LEFT	THRU	RGHT	DIAG	NODE	SEC	MPH/KMPH	CODE	CODE	-MENT	NAME	
(19, 20)	594/ 181	1 0 0 0 0	1	0000000	0 8011	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*											
(7, 21)	334/ 102	2 0 0 0 0	1	0000000	0 8	22 0 0 2.0	1.8 30/ 48	0 0 0 1-1*											
(21, 8)	314/ 96	2 0 0 0 0	1	0000000	0 8009	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*											
(8, 21)	314/ 96	2 0 0 0 0	1	0000000	22 7	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*											
(21, 7)	334/ 102	2 0 0 0 0	1	0000000	9 18	6 0 0 2.0	1.8 30/ 48	1 0 0 1-1*											
(8012, 22)	0/ 0	2 0 0 0 0	1	0000000	0 21	0 0 0 2.0	1.8 0/ 0	0 0 0 1-1*											
(22, 21)	375/ 114	1 0 0 0 0	1	0000000	7 0	8 0 0 2.0	1.8 30/ 48	1 0 0 1-1*											
(21, 22)	375/ 114	1 0 0 0 0	1	0000000	0 8012	0 0 0 2.0	1.8 30/ 48	0 0 0 1-1*											

* INDICATES DEFAULT VALUES WERE SPECIFIED

LINK TYPE	LANE CHANNELIZATION CODES	RTOR CODES	PEDESTRIAN CODES
IDENTIFIES THE DISTRIBUTION USED FOR QUEUE DISCHARGE AND START-UP LOST TIME CHARACTERISTICS.	0 UNRESTRICTED 1 LEFT TURNS ONLY 2 BUSES ONLY 3 CLOSED 4 RIGHT TURNS ONLY 5 CAR - POOLS 6 CAR - POOLS + BUSES 7 RIGHT TURNS + RIGHT DIAGONAL AND/OR THROUGH 8 LEFT TURNS + LEFT DIAGONAL AND/OR THROUGH 9 ALL PERMITTED MOVEMENTS WITH RESPECT TO THE GEOMETRY AND ADJACENT LANE CHANNELIZATIONS D DIAGONAL TRAFFIC ONLY T THROUGH TRAFFIC ONLY	0 RTOR PERMITTED 1 RTOR PROHIBITED	0 NO PEDESTRIANS 1 LIGHT 2 MODERATE 3 HEAVY

TOTAL LINKS: 53 (ALLOWED: 1000)
 TOTAL NON-ENTRY NODES: 22 (ALLOWED: 500)

OPTIONAL NETSIM LANE ALIGNMENTS

LINK	RECEIVING LINK	LANE	ALIGNED LANES ON RECEIVING LINK
(1, 2)	(2, 3)	2	2
(1, 2)	(2, 3)	1	1
(1, 2)	(2, 16)	1	1
(1, 2)	(2, 13)	2	1
(2, 1)	(1, 14)	1	1
(2, 1)	(1, 17)	1	1
(2, 1)	(1, 17)	2	2
(2, 1)	(1, 15)	2	1
(3, 2)	(2, 13)	1	1
(3, 2)	(2, 1)	1	1
(3, 2)	(2, 1)	2	2
(3, 2)	(2, 16)	2	1

(2, 3)	(3, 4)	2	2
(2, 3)	(3, 4)	1	1
(2, 3)	(3, 12)	2	1
(4, 3)	(3, 12)	1	1
(4, 3)	(3, 2)	1	1
(4, 3)	(3, 2)	2	2
(3, 4)	(4, 5)	1	1
(3, 4)	(4, 5)	2	2
(5, 4)	(4, 3)	1	1
(5, 4)	(4, 3)	2	2
(4, 5)	(5, 19)	2	2
(4, 5)	(5, 19)	1	1
(9, 7)	(7, 18)	1	2
(9, 7)	(7, 6)	1	2
(10, 5)	(5, 19)	1	1 2
(10, 5)	(5, 4)	1	1 2
(11, 4)	(4, 5)	1	1 2
(11, 4)	(4, 3)	1	1 2
(12, 3)	(3, 4)	1	2
(12, 3)	(3, 2)	1	1
(13, 2)	(2, 16)	1	1
(13, 2)	(2, 3)	1	2
(13, 2)	(2, 1)	1	1
(14, 1)	(1, 2)	1	2
(14, 1)	(1, 17)	1	1
(14, 1)	(1, 15)	1	1
(15, 1)	(1, 14)	1	1

(15, 1)	(1, 2)	1	1
(15, 1)	(1, 17)	1	2
(16, 2)	(2, 13)	1	1
(16, 2)	(2, 3)	1	1
(16, 2)	(2, 1)	1	2
(17, 1)	(1, 2)	2	2
(17, 1)	(1, 15)	1	1
(17, 1)	(1, 14)	2	1
(6, 7)	(7, 18)	1	1
(6, 7)	(7, 9)	1	1
(18, 7)	(7, 9)	1	1
(18, 7)	(7, 6)	2	2
(7, 18)	(18, 19)	1	1
(7, 18)	(18, 19)	2	2
(19, 18)	(18, 7)	2	2
(19, 18)	(18, 7)	1	1
(18, 19)	(19, 5)	1	1
(18, 19)	(19, 5)	2	2
(19, 5)	(5, 4)	1	1
(19, 5)	(5, 4)	2	2
(5, 19)	(19, 18)	2	2
(5, 19)	(19, 18)	1	1
(20, 19)	(19, 18)	1	1 2
(20, 19)	(19, 5)	1	1 2
(7, 21)	(21, 8)	1	1
(7, 21)	(21, 8)	2	2

(7, 21)	(21, 22)	1	1
(8, 21)	(21, 7)	2	2
(8, 21)	(21, 7)	1	1
(22, 21)	(21, 8)	1	1
(22, 21)	(21, 7)	1	2

***** WARNING - 500 - Link (19,5) may not have been specified correctly on Record Type 11. Its traffic opposes traffic on link (10,5), but no receiving link (5,10) was input. Check Record Type 11.

1

NETSIM TURNING MOVEMENT DATA

LINK	TURN MOVEMENT PERCENTAGES				TURN MOVEMENT POSSIBLE				POCKET LENGTH (IN FEET/METERS)	
	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	RIGHT
(1, 2)	15	84	1	0	YES	YES	YES	NO	0/ 0	0/ 0
(2, 1)	2	98	0	0	YES	YES	YES	NO	0/ 0	0/ 0
(3, 2)	0	98	2	0	YES	YES	YES	NO	0/ 0	0/ 0
(2, 3)	2	98	0	0	YES	YES	NO	NO	0/ 0	0/ 0
(4, 3)	0	98	2	0	NO	YES	YES	NO	0/ 0	0/ 0
(3, 4)	0	0	100	0	NO	NO	YES	NO	0/ 0	0/ 0
(5, 4)	100	0	0	0	YES	NO	NO	NO	0/ 0	0/ 0
(4, 5)	100	0	0	0	YES	NO	NO	NO	0/ 0	0/ 0
(8009, 8)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8008, 9)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(9, 7)	98	1	1	0	YES	YES	YES	NO	0/ 0	0/ 0
(7, 9)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8010, 10)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(10, 5)	50	50	0	0	YES	YES	NO	NO	0/ 0	0/ 0
(8013, 11)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(11, 4)	0	39	61	0	NO	YES	YES	NO	0/ 0	0/ 0
(8002, 12)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(12, 3)	39	0	61	0	YES	NO	YES	NO	0/ 0	0/ 0
(3, 12)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8003, 13)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(13, 2)	30	22	48	0	YES	YES	YES	NO	0/ 0	0/ 0
(2, 13)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8004, 14)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(14, 1)	6	6	88	0	YES	YES	YES	NO	0/ 0	0/ 0
(1, 14)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8005, 15)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(15, 1)	19	29	52	0	YES	YES	YES	NO	0/ 0	0/ 0
(1, 15)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8006, 16)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(16, 2)	25	25	50	0	YES	YES	YES	NO	0/ 0	0/ 0
(2, 16)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(17, 1)	15	84	1	0	YES	YES	YES	NO	0/ 0	0/ 0
(1, 17)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8001, 17)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0
(8007, 6)	0	100	0	0	NO	YES	NO	NO	0/ 0	0/ 0

(6, 7)	34	33	33	0	YES	YES	YES	NO	0/	0	0/	0
(7, 6)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(18, 7)	0	27	73	0	YES	YES	YES	NO	0/	0	0/	0
(7, 18)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(19, 18)	100	0	0	0	YES	NO	NO	NO	0/	0	0/	0
(18, 19)	5	95	0	0	YES	YES	NO	NO	0/	0	0/	0
(19, 5)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(5, 19)	0	95	5	0	NO	YES	YES	NO	0/	0	0/	0
(8011, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(20, 19)	50	0	50	0	YES	NO	YES	NO	0/	0	0/	0
(19, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(7, 21)	0	99	1	0	NO	YES	YES	NO	0/	0	0/	0
(21, 8)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8, 21)	0	100	0	0	YES	YES	NO	NO	0/	0	0/	0
(21, 7)	4	93	3	0	YES	YES	YES	NO	0/	0	0/	0
(8012, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(22, 21)	98	0	2	0	YES	NO	YES	NO	0/	0	0/	0
(21, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0

1 SPECIFIED FIXED-TIME SIGNAL CONTROL, AND SIGN CONTROL, CODES
0

0	INTERVAL NUMBER	OFFSET 0 SEC		CYCLE LENGTH 110 SEC				
		DURATION (SEC)	(PCT)	(14, 1)	(17, 1)	(15, 1)	(2, 1)	
0	1	80	72	2	1	2	1	
0	2	26	23	1	2	1	2	
0	3	3	2	0	2	0	2	
0	4	1	0	2	2	2	2	
0	NODE 1							
0	INTERVAL NUMBER	OFFSET 5 SEC		CYCLE LENGTH 110 SEC				
		DURATION (SEC)	(PCT)	(13, 2)	(1, 2)	(16, 2)	(3, 2)	
0	1	80	72	2	1	2	1	
0	2	26	23	1	2	1	2	
0	3	3	2	0	2	0	2	
0	4	1	0	2	2	2	2	
0	NODE 2							
0	INTERVAL NUMBER	OFFSET 10 SEC		CYCLE LENGTH 110 SEC				
		DURATION (SEC)	(PCT)	(12, 3)	(2, 3)	(4, 3)		
0	1	80	72	2	1	1		
0	2	26	23	1	2	2		
0	3	3	2	0	2	2		
0	4	1	0	2	2	2		
0	NODE 3							
0	INTERVAL NUMBER	OFFSET 15 SEC		CYCLE LENGTH 110 SEC				
		DURATION (SEC)	(PCT)	(11, 4)	(3, 4)	(5, 4)		
0	1	80	72	2	1	1		
0	2	26	23	1	2	2		
0	3	3	2	0	2	2		
0	4	1	0	2	2	2		
0	NODE 4							
0	INTERVAL NUMBER	NODE 5 IS UNDER SIGN CONTROL		CYCLE LENGTH 110 SEC				
		DURATION (SEC)	(PCT)	(4, 5)	(10, 5)	(19, 5)		

1	0	100	1	1	1	
0	0		NODE	6	IS UNDER SIGN CONTROL	
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8007, 6)	(7, 6)		
1	1	0 100	1	1		
0						
0			NODE	7		
0			OFFSET	0 SEC		CYCLE LENGTH 110 SEC
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(21, 7)	(6, 7)	(18, 7)	(9, 7)
0	1	80 72	2	1	3	1
0	2	30 27	1	2	1	2
0						
0			NODE	8 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8009, 8)	(21, 8)		
0	1	0 100	1	1		
0			NODE	9 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8008, 9)	(7, 9)		
0	1	0 100	1	1		
0			NODE	10 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8010, 10)			
0	1	0 100	1			
0			NODE	11 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8013, 11)			
0	1	0 100	1			
0			NODE	12 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8002, 12)	(3, 12)		
0	1	0 100	1	1		
0			NODE	13 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8003, 13)	(2, 13)		
0	1	0 100	1	1		
0			NODE	14 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8004, 14)	(1, 14)		
1	1	0 100	1	1		
0						
0			NODE	15 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8005, 15)	(1, 15)		
0	1	0 100	1	1		
0						
0			NODE	16 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(8006, 16)	(2, 16)		
0	1	0 100	1	1		
0						
0			NODE	17 IS UNDER SIGN CONTROL		
0	INTERVAL	DURATION	+-----	- - - - -	APPROACHES	+
0	NUMBER	(SEC) (PCT)	(1, 17)	(8001, 17)		
0	1	0 100	1	1		
0						
0			NODE	18 IS UNDER SIGN CONTROL		

INTERVAL NUMBER		DURATION (SEC)	DURATION (PCT)	(7, 18)	(19, 18)	APPROACHES	
0	1	0	100	1	1		
0	0	0	0	1	1	NODE 19 IS UNDER SIGN CONTROL	
INTERVAL NUMBER		DURATION (SEC)	DURATION (PCT)	(18, 19)	(5, 19)	(20, 19)	APPROACHES
0	1	0	100	1	1	1	
0	0	0	0	1	1	NODE 20 IS UNDER SIGN CONTROL	APPROACHES
INTERVAL NUMBER		DURATION (SEC)	DURATION (PCT)	(8011, 20)	(19, 20)		
0	1	0	100	1	1		
0	0	0	0	1	1	NODE 21 IS UNDER SIGN CONTROL	APPROACHES
INTERVAL NUMBER		DURATION (SEC)	DURATION (PCT)	(7, 21)	(8, 21)	(22, 21)	
0	1	0	100	1	1	1	
0	0	0	0	1	1	NODE 22 IS UNDER SIGN CONTROL	APPROACHES
INTERVAL NUMBER		DURATION (SEC)	DURATION (PCT)	(8012, 22)	(21, 22)		
1	1	0	100	1	1		
INTERPRETATION OF SIGNAL CODES							
	0	YIELD OR AMBER					
	1	GREEN					
	2	RED					
	3	RED WITH GREEN RIGHT ARROW					
	4	RED WITH GREEN LEFT ARROW					
	5	STOP					
	6	RED WITH GREEN DIAGONAL ARROW					
	7	NO TURNS-GREEN THRU ARROW					
	8	RED WITH LEFT AND RIGHT GREEN ARROW					
	9	NO LEFT TURN-GREEN THRU AND RIGHT					

CONTROL CODES	GO	= PROTECTED
	NOGO	= NOT PERMITTED
	AMBR	= AMBER
	PERM	= PERMITTED NOT PROTECTED
	PROT	= PROTECTED
	STOP	= STOP SIGN
	YLD	= YIELD SIGN

NODE 1 **FIXED TIME CONTROL** **OFFSET =** 0 SECONDS **CYCLE LENGTH =** 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----

		(14, 1)	(17, 1)	(15, 1)	(2, 1)
1	80	LEFT THRU RITE DIAG NOGO NOGO NOGO	LEFT THRU RITE DIAG PERM GO GO	LEFT THRU RITE DIAG NOGO NOGO NOGO	LEFT THRU RITE DIAG PERM GO GO
2	26	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
3	3	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO
4	1	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO

NODE 2 FIXED TIME CONTROL OFFSET = 5 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----

		(13, 2)	(1, 2)	(16, 2)	(3, 2)
1	80	LEFT THRU RITE DIAG NOGO NOGO NOGO	LEFT THRU RITE DIAG PERM GO GO	LEFT THRU RITE DIAG NOGO NOGO NOGO	LEFT THRU RITE DIAG PERM GO GO
2	26	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
3	3	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO
4	1	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO

NODE 3 FIXED TIME CONTROL OFFSET = 10 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----

		(12, 3)	(2, 3)	(4, 3)
1	80	LEFT THRU RITE DIAG NOGO NOGO	LEFT THRU RITE DIAG PERM GO	LEFT THRU RITE DIAG GO GO
2	26	PROT GO	NOGO NOGO	NOGO NOGO
3	3	AMBR AMBR	NOGO NOGO	NOGO NOGO
4	1	NOGO NOGO	NOGO NOGO	NOGO NOGO

NODE 4 FIXED TIME CONTROL OFFSET = 15 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----

		(11, 4)	(3, 4)	(5, 4)
1	80	LEFT THRU RITE DIAG NOGO NOGO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PROT
2	26	GO GO	NOGO	NOGO
3	3	AMBR AMBR	NOGO	NOGO
4	1	NOGO NOGO	NOGO	NOGO

1

NODE 5 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----

		(4, 5)	(10, 5)	(19, 5)
1	0	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG PERM GO	LEFT THRU RITE DIAG GO
		LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
		LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG

NODE 6	SIGN CONTROL
INTERVAL DURATION	(8007, 6) APPROACHES
	LEFT THRU RITE DIAG (7, 6) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0	GO GO
NODE 7	FIXED TIME CONTROL OFFSET = 0 SECONDS CYCLE LENGTH = 110 SECONDS
INTERVAL DURATION	(21, 7) APPROACHES (6, 7) (18, 7) (9, 7)
	LEFT THRU RITE DIAG
1 80	NOGO NOGO NOGO PERM GO GO NOGO NOGO GO PERM GO GO
2 30	PERM GO GO NOGO NOGO NOGO PERM GO GO NOGO NOGO NOGO
NODE 8	SIGN CONTROL
INTERVAL DURATION	(8009, 8) APPROACHES (21, 8)
	LEFT THRU RITE DIAG
1 0	GO GO
NODE 9	SIGN CONTROL
INTERVAL DURATION	(8008, 9) APPROACHES (7, 9)
	LEFT THRU RITE DIAG
1 0	GO GO
NODE 10	SIGN CONTROL
INTERVAL DURATION	(8010, 10) APPROACHES
	LEFT THRU RITE DIAG
1 0	GO
NODE 11	SIGN CONTROL
INTERVAL DURATION	(8013, 11) APPROACHES

1 0 LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
 GO

NODE 12 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8002, 12) (3, 12)
LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

NODE 13 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8003, 13) (2, 13)
LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

NODE 14 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8004, 14) (1, 14)
LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

NODE 15 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8005, 15) (1, 15)
LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

NODE 16 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8006, 16) (2, 16)
LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

NODE 17 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----

		(1, 17)	(8001, 17)					
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	
NODE	18	SIGN CONTROL						
INTERVAL DURATION		APPROACHES						
		(7, 18)	(19, 18)					
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	
NODE	19	SIGN CONTROL						
INTERVAL DURATION		APPROACHES						
		(18, 19)	(5, 19)	(20, 19)				
1	0	LEFT THRU RITE DIAG PERM	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	
NODE	20	SIGN CONTROL						
INTERVAL DURATION		APPROACHES						
		(8011, 20)	(19, 20)					
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	
NODE	21	SIGN CONTROL						
INTERVAL DURATION		APPROACHES						
		(7, 21)	(8, 21)	(22, 21)				
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PERM	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	
NODE	22	SIGN CONTROL						
INTERVAL DURATION		APPROACHES						
		(8012, 22)	(21, 22)					
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	

ENTRY LINK VOLUMES

LINK	FLOW RATE (VEH/HOUR)	TRUCKS (PERCENT)	CAR POOLS (PERCENT)	HOV VIOLATORS (PERCENT)
------	-------------------------	---------------------	------------------------	----------------------------

(8008, 9)	1319	0	0	1.00
(8009, 8)	407	0	0	1.00
(8010, 10)	52	0	0	1.00
(8013, 11)	52	0	0	1.00
(8002, 12)	52	0	0	1.00
(8003, 13)	52	0	0	1.00
(8004, 14)	187	0	0	1.00
(8005, 15)	21	0	0	1.00
(8006, 16)	82	0	0	1.00
(8001, 17)	1186	0	0	1.00
(8007, 6)	10	0	0	1.00
(8011, 20)	120	0	0	1.00
(8012, 22)	52	0	0	1.00

NETSIM VEHICLE TYPE SPECIFICATIONS

VEHICLE TYPE	LENGTH FEET/METERS	Q DSCHG FACTOR (PCT)	HDWY AVG. OCCUP.	FLEET COMPONENT PERCENTAGES				PERF. INDEX
				AUTO	TRUCK	CARPOOL	BUS	
1**	16.0/ 4.9	100	1.3	75	0	0	0	2
2**	35.0/ 10.7	120	1.2	0	100	0	0	3
3**	16.0/ 4.9	100	2.5	0	0	100	0	2
4**	40.0/ 12.2	120	25.0	0	0	0	100	7
5**	14.0/ 4.3	100	1.3	25	0	0	0	1
6**	53.0/ 16.2	120	1.2	0	0	0	0	4
7**	53.0/ 16.2	120	1.2	0	0	0	0	5
8**	64.0/ 19.5	120	1.2	0	0	0	0	6
9**	14.0/ 4.3	100	2.5	0	0	0	0	1

** INDICATES THAT ALL PARAMETERS FOR VEHICLE TYPE ASSUME DEFAULT VALUES

1

DEFAULT LINK GEOMETRIC DATA

WIDTH OF LANES 12 FEET

LONGITUDINAL DISTANCE FROM THE STOP LINE TO THE NEAR CURB 4 FEET

FORWARD SIGHT DISTANCE AT STOP LINE 1000 FEET

1

LANE CHANGE DATA

PARAMETERS	VALUE ENGLISH / METRIC	UNITS
DURATION OF LANE CHANGE MANEUVER	3*	SECONDS
MEAN DRIVER REACTION TIME	10*	TENTHS OF A SECOND
TIME REQUIRED FOR SUCCESSIVE LANE CHANGES	20*	TENTHS OF A SECOND

DECELERATION AT BEGINNING OF LANE CHANGE MANEUVER	5*	/	2	FEET [METERS] / SECOND**2
DIFFERENCE IN VEHICLE'S DECELERATION OVER THE DISTANCE BETWEEN ITS POSITION WHEN IT BEGINS TO RESPOND TO AN OBSTRUCTION AND THE POSITION OF THE OBSTRUCTION -				
FOR MANDATORY LANE CHANGE:	10*	/	3	FEET [METERS] / SECOND**2
FOR DISCRETIONARY LANE CHANGE:	5*	/	2	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF LEAD VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/	4	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF FOLLOWER VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/	4	FEET [METERS] / SECOND**2
DRIVER TYPE FACTOR USED TO COMPUTE DRIVER AGGRESSIONESS	25*			
URGENCY THRESHOLD	2*	/	1	10 * SECONDS**2 / FEET [METERS]
SAFETY FACTOR FOR COMPUTATION OF PERCEIVED RISK OF LANE CHANGE	8*			FACTOR * 10
PERCENT OF DRIVERS WHO COOPERATE WITH A LANE CHANGER	50*			%
HEADWAY BELOW WHICH ALL DRIVERS WILL ATTEMPT TO CHANGE LANES	20*			TENTHS OF A SECOND
HEADWAY ABOVE WHICH NO DRIVERS WILL ATTEMPT TO CHANGE LANES	50*			TENTHS OF A SECOND
FORWARD DISTANCE SCANNED BY DRIVER FOR A TURN MOVEMENT / BUS STATION IN ORDER TO ASSESS NEED FOR A LANE CHANGE	300*	/	91	FEET / [METERS]

* INDICATES DEFAULT VALUES WERE SPECIFIED

MAXIMUM ACCELERATION TABLE

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	8.00	9.00	6.00	5.00	5.00	4.00	3.00	2.00	2.00	1.00	1.00	
2	6.00	12.00	10.00	8.00	7.00	6.00	4.00	4.00	4.00	2.00	2.00	2.00
3	4.69	5.35	4.94	3.47	3.09	2.61	2.14	1.70	1.27	.86	.46	.06
4	2.81	2.42	2.15	2.04	1.74	1.42	1.12	.83	.56	.30	.04	-.23
5	2.76	2.37	1.81	1.56	1.25	.97	.73	.52	.32	.14	-.05	-.23
6	2.45	2.14	1.42	1.12	.85	.63	.44	.29	.14	.00	-.14	-.27
7	7.47	5.33	3.17	2.66	2.29	1.65	1.40	.95	.75	.50	-.33	-.35

GRADE CORRECTION FACTORS FOR ACCELERATION (USED BY FRESIM ONLY)

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.21	.21	.21	.22	.23	.25	.26	.27	.28	.28	.30	.31
4	.16	.15	.19	.22	.24	.25	.27	.28	.29	.31	.31	.31
5	.18	.17	.20	.23	.25	.27	.28	.30	.31	.31	.31	.31
6	.18	.18	.22	.25	.27	.29	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

GRADE CORRECTION FACTORS FOR FUEL CONSUMPTION (USED BY FRESIM ONLY)

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.26	.26	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
4	.11	.11	.23	.27	.28	.29	.30	.30	.30	.30	.30	.30
5	.16	.16	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
6	.20	.20	.28	.29	.30	.30	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

**** THERE WERE 1 WARNING MESSAGES IN DATA.

1

INITIALIZATION STATISTICS

TIME INTERVAL NUMBER	SUBNETWORK TYPE	PRIOR CONTENT (VEHICLES)	CURRENT CONTENT (VEHICLES)	PERCENT DIFFERENCE
1	NETSIM	0	44	10000
2	NETSIM	44	96	118
3	NETSIM	96	123	28

INITIALIZATION TIME EXHAUSTED, SIMULATION WILL BE PERFORMED ANYWAY
CUMULATIVE NETSIM STATISTICS AT TIME 9:0:0

1

ELAPSED TIME IS 1:0:0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

LINK	VEHICLE		VEHICLE MINUTES			RATIO	MINUTES/MILE		SECONDS / VEHICLE				AVERAGE VALUES			
	MILES	TRIPS	MOVE TIME	DELAY TIME	TOTAL TIME		MOVE TOTAL	TOTAL TIME	DELAY TIME	TOTAL TIME	DELAY TIME	CONTROL	QUEUE DELAY	STOP* TIME	(%) VPH	MPH
(1, 2)	81.23	1036	162.5	153.6	316.0	.51	3.89	1.89	18.2	8.9	7.3	6.8	6.6	20	1036	15.4
(2, 1)	136.43	1740	272.9	307.2	580.0	.47	4.25	2.25	20.2	10.8	8.6	7.5	7.1	25	1740	14.1
(3, 2)	99.79	1739	199.6	137.4	337.0	.59	3.38	1.38	11.6	4.7	3.4	3.1	3.0	12	1739	17.8
(2, 3)	53.43	931	106.9	44.9	151.7	.70	2.84	.84	9.7	2.9	2.0	1.9	1.9	7	931	21.1
(4, 3)	134.91	1738	269.8	156.6	426.5	.63	3.16	1.16	14.7	5.4	3.7	3.4	3.2	14	1738	19.0
(3, 4)	72.76	937	145.5	76.0	221.5	.66	3.04	1.04	14.1	4.8	2.5	.4	.3	9	937	19.7
(5, 4)	137.44	1719	274.9	351.6	626.5	.44	4.56	2.56	21.8	12.2	9.3	7.0	6.4	44	1719	13.2
(4, 5)	74.97	964	149.9	44.0	194.0	.77	2.59	.59	12.1	2.7	.5	.1	.0	0	964	23.2

* AVERAGE QUEUE AND STOP TIME ARE COMPUTED AS TOTAL QUEUE TIME OR TOTAL STOP TIME DIVIDED BY TOTAL NUMBER OF VEHICLES DISCHARGED FROM LINK PLUS NUMBER OF VEHICLES CURRENTLY ON THE LINK.

1 CUMULATIVE NETSIM STATISTICS AT TIME 9:0:0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

LINK	VEHICLE		VEHICLE MINUTES			RATIO	MINUTES/MILE		SECONDS / VEHICLE				AVERAGE VALUES			
	MILES	TRIPS	MOVE TIME	DELAY TIME	TOTAL TIME	MOVE/ TOTAL	TOTAL TIME	DELAY TIME	TOTAL TIME	DELAY TIME	CONTROL DELAY	QUEUE DELAY	STOP* TIME	STOPS (%)	VPH	MPH
(19, 20)	13.68	123	27.4	2.9	30.2	.91	2.21	.21	14.7	1.4	.0	.0	.0	0	123	27.2
(7, 21)	18.69	296	37.4	6.2	43.6	.86	2.33	.33	8.8	1.3	.0	.0	.0	0	296	25.7

(21, 8)	17.31	291	34.6	1.8	36.4	.95	2.10	.10	7.5	.4	.0	.0	.0	0	291	28.6
(8, 21)	24.09	405	46.6	.0	46.6	1.00	1.94	.00	6.9	.0	.0	.0	.0	0	405	31.0
(21, 7)	28.85	456	57.7	280.9	338.6	.17	11.74	9.74	45.0	37.4	35.4	33.3	32.5	76	456	5.1
(8012, 22)			51												51	
(22, 21)	3.69	52	7.4	1.6	9.0	.82	2.45	.45	10.4	1.9	.5	.2	.1	3	52	24.5
(21, 22)	.53	8	1.1	.1	1.2	.89	2.25	.25	9.0	1.0	.0	.0	.0	0	8	26.7
0SUBNETWORK=	2641.17	3552	88.01	55.81	143.82	.61	3.27	1.27	2.34	.91	.65	.52	.49	125.5		18.4
			-- VEHICLE - HOURS --						--- MINUTES / VEHICLE-TRIP ---					PER TRIP		

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CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

NUMBER OF LANE LINK CHANGES	VEH-MINS *		AVERAGE	-- CONGESTION --		Q U E U E L E N G T H (V E H I C L E)													
	QUEUE	STOP	OCCUPANCY	STORAGE	PHASE	AVERAGE QUEUE BY LANE **							MAXIMUM QUEUE BY LANE						
	TIME	TIME	(VEHICLE)	(%)	FAILURE	1	2	3	4	5	6	7	1	2	3	4	5	6	7
---	-----	-----	-----	-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
(1, 2)	118.0	114.4	5.7	13.7	1	0	2	0	0	0	0	0	4	8	0	0	0	0	0
(2, 1)	220.6	207.5	10.2	24.7	1	2	2	0	0	0	0	0	11	14	0	0	0	0	0
(3, 2)	90.8	86.8	6.2	20.3	0	1	1	0	0	0	0	0	7	6	0	0	0	0	0
(2, 3)	29.7	29.0	3.0	10.0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0
(4, 3)	98.7	94.5	7.5	18.3	0	1	1	0	0	0	0	0	6	8	0	0	0	0	0
(3, 4)	6.2	5.1	4.1	10.1	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0
(5, 4)	202.1	184.1	11.0	25.3	0	2	2	0	0	0	0	0	12	13	0	0	0	0	0
(4, 5)	.9	.1	3.7	8.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
(9, 7)	179.7	164.8	11.6	35.8	0	5	0	0	0	0	0	0	17	0	0	0	0	0	0
(7, 9)	.0	.0	3.8	11.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(10, 5)	.5	.4	.3	1.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
(11, 4)	19.5	19.3	.8	4.3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
(12, 3)	16.2	16.0	.9	3.9	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
(3, 12)	.0	.0	.2	.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(13, 2)	18.8	18.6	.9	4.3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0

(2, 13)	.1	.0	.9	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(14, 1)	51.8	50.0	2.2	11.6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1, 14)	.1	.0	.6	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(15, 1)	6.1	6.1	.3	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1, 15)	.1	.0	.2	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16, 2)	28.6	28.2	1.0	12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(2, 16)	.0	.0	.1	.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(17, 1)	311.1	294.9	8.7	32.2	9	2	4	0	0	0	0	0	0	0	0	0	0	10	11	0	0	0	0	0
(1, 17)	.4	.0	4.1	15.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(6, 7)	1.1	1.1	.1	.2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
(7, 6)	.0	.0	.1	.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 7)	224.6	217.3	8.2	20.2	0	0	4	0	0	0	0	0	0	0	0	0	0	12	12	0	0	0	0	0
(7, 18)	.2	.0	7.0	17.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(19, 18)	.0	.0	5.7	8.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 19)	25.8	23.7	9.1	13.3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0
(19, 5)	1.0	.8	18.5	13.6	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0
(5, 19)	.0	.0	9.7	7.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(20, 19)	2.1	2.0	1.2	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

1 CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

NUMBER OF LANE LINK CHANGES	VEH-MINS *		AVERAGE	-- CONGESTION --		QUEUE LENGTH (VEHICLE)													
	QUEUE	STOP	OCCUPANCY	STORAGE	PHASE	AVERAGE QUEUE BY LANE **							MAXIMUM QUEUE BY LANE						
	TIME	TIME	(VEHICLE)	(%)	FAILURE	1	2	3	4	5	6	7	1	2	3	4	5	6	7
---	-----	-----	-----	-----	-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(19, 20)	.0	.0	.8	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(7, 21)	.1	.0	.9	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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( 21,   8)     .0     .0     .8    2.5     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
15
(   8,  21)     .0     .0    1.5    4.9     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
1
( 21,   7) 257.4  251.1    6.2   18.5     6     2     2     0     0     0     0     0     0     0     0     0     9     6     0     0     0     0     0     0     0
154
( 22,  21)     .1     .1     .3    1.5     0     0     0     0     0     0     0     0     0     0     0     0     1     0     0     0     0     0     0     0     0
0
( 21,  22)     .0     .0     .0    .2     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
0
OSUBNETWORK= 1912.3 1815.8 157.9 11.1 17
3985

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* THESE VALUES INCLUDE THE TIME FOR VEHICLES CURRENTLY ON THE LINK.

** AVERAGE QUEUE CALCULATED BASED ON TIME SINCE BEGINNING OF SIMULATION

11

CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

DISCHARGE BY LANE

(6, 7)	6	6	3	3	0	0	0	0	0	0	0	0	0
(7, 6)	12	12	15	15	0	0	0	0	0	0	0	0	0
(18, 7)	729	729	279	279	0	0	0	0	0	0	0	0	0
(7, 18)	904	904	810	810	0	0	0	0	0	0	0	0	0
(19, 18)	727	727	284	284	0	0	0	0	0	0	0	0	0
(18, 19)	1004	1004	709	709	0	0	0	0	0	0	0	0	0
(19, 5)	1158	1158	536	536	0	0	0	0	0	0	0	0	0
(5, 19)	488	488	512	512	0	0	0	0	0	0	0	0	0
(20, 19)	120	120	0	0	0	0	0	0	0	0	0	0	0
(19, 20)	123	123	0	0	0	0	0	0	0	0	0	0	0
(7, 21)	86	86	210	210	0	0	0	0	0	0	0	0	0
(21, 8)	94	94	197	197	0	0	0	0	0	0	0	0	0
(8, 21)	368	368	37	37	0	0	0	0	0	0	0	0	0
(21, 7)	286	286	170	170	0	0	0	0	0	0	0	0	0
(22, 21)	52	52	0	0	0	0	0	0	0	0	0	0	0
(21, 22)	8	8	0	0	0	0	0	0	0	0	0	0	0

1

NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(1, 2)	105.6	1346.8	199.6	410.8
(2, 1)	177.4	2262.0	399.3	754.1
(3, 2)	129.7	2260.7	178.6	438.0
(2, 3)	69.5	1210.3	58.3	197.2
(4, 3)	175.4	2259.4	203.6	554.4
(3, 4)	94.6	1218.1	98.8	288.0
(5, 4)	178.7	2234.7	457.1	814.4
(4, 5)	97.5	1253.2	57.2	252.2
(9, 7)	208.5	1706.9	459.6	876.6
(7, 9)	114.5	971.1	30.8	259.8
(10, 5)	4.8	67.6	1.5	11.2
(11, 4)	5.0	68.9	29.0	39.1
(12, 3)	5.7	67.6	23.6	34.9
(3, 12)	3.9	48.1	.9	8.6
(13, 2)	5.5	68.9	28.0	38.9
(2, 13)	19.7	250.9	6.7	46.1
(14, 1)	17.2	244.4	83.3	117.7
(1, 14)	14.7	209.3	6.1	35.6
(15, 1)	1.5	27.3	8.9	12.0
(1, 15)	4.2	75.4	1.9	10.3
(16, 2)	3.2	106.6	40.8	47.2
(2, 16)	1.1	39.0	.7	2.9
(17, 1)	78.5	1535.3	487.0	644.0
(1, 17)	124.8	2440.1	40.4	289.9
(6, 7)	.8	11.7	1.7	3.2
(7, 6)	2.3	35.1	.6	5.1
(18, 7)	100.8	1310.4	402.2	603.7
(7, 18)	171.3	2228.2	169.3	511.9

(19, 18)	170.3	1314.3	64.0	404.5
(18, 19)	288.5	2226.9	99.3	676.3
(19, 5)	567.2	2202.2	266.6	1401.0
(5, 19)	334.8	1300.0	57.6	727.3

1

NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(20, 19)	17.5	156.0	8.3	43.4
(19, 20)	17.8	159.9	3.7	39.3
(7, 21)	24.3	384.8	8.1	56.7
(21, 8)	22.5	378.3	2.3	47.3
(8, 21)	31.3	526.5	.0	60.6
(21, 7)	37.5	592.8	365.2	440.2
(22, 21)	4.8	67.6	2.1	11.7
(21, 22)	.7	10.4	.2	1.6

1 *** NOTE *** TIME PERIOD 1 SPECIFIC NETSIM STATISTICS ARE THE SAME AS CUMULATIVE OUTPUT AT THE END OF TIME PERIOD 1.

1

NETSIM CUMULATIVE VALUES OF FUEL CONSUMPTION

VEHICLE TYPE-	FUEL CONSUMPTION												M.P.G.	
	5	1	2	6	7	8	4	5	1	2	6	7		8	4
(7, 9)	2.72	4.05	.00	.00	.00	.00	8.20	15.09	.00	.00	.00	.00	.00	.00
(3, 12)	.12	.19	.00	.00	.00	.00	5.98	11.00	.00	.00	.00	.00	.00	.00
(19, 20)	.34	.71	.00	.00	.00	.00	7.99	14.49	.00	.00	.00	.00	.00	.00
(2, 13)	.72	.86	.00	.00	.00	.00	6.12	11.55	.00	.00	.00	.00	.00	.00
(1, 14)	.50	.77	.00	.00	.00	.00	5.46	10.25	.00	.00	.00	.00	.00	.00
(21, 8)	.19	.44	.00	.00	.00	.00	19.52	31.43	.00	.00	.00	.00	.00	.00
(1, 15)	.13	.28	.00	.00	.00	.00	4.61	8.19	.00	.00	.00	.00	.00	.00
(2, 16)	.06	.06	.00	.00	.00	.00	4.30	7.75	.00	.00	.00	.00	.00	.00
(1, 17)	2.91	4.81	.00	.00	.00	.00	8.48	14.66	.00	.00	.00	.00	.00	.00
(21, 22)	.01	.04	.00	.00	.00	.00	7.44	9.91	.00	.00	.00	.00	.00	.00
(7, 6)	.10	.09	.00	.00	.00	.00	5.48	11.83	.00	.00	.00	.00	.00	.00
(5, 19)	4.42	7.77	.00	.00	.00	.00	14.30	24.26	.00	.00	.00	.00	.00	.00
(2, 1)	3.01	6.14	.00	.00	.00	.00	11.70	16.52	.00	.00	.00	.00	.00	.00
(3, 2)	2.07	3.81	.00	.00	.00	.00	12.58	19.37	.00	.00	.00	.00	.00	.00
(2, 3)	1.15	2.13	.00	.00	.00	.00	11.49	18.92	.00	.00	.00	.00	.00	.00
(13, 2)	.11	.29	.00	.00	.00	.00	7.70	10.70	.00	.00	.00	.00	.00	.00
(1, 2)	2.13	3.95	.00	.00	.00	.00	9.50	15.34	.00	.00	.00	.00	.00	.00
(7, 21)	.56	1.24	.00	.00	.00	.00	6.93	11.86	.00	.00	.00	.00	.00	.00
(14, 1)	.44	1.07	.00	.00	.00	.00	6.40	9.15	.00	.00	.00	.00	.00	.00
(4, 3)	4.81	7.67	.00	.00	.00	.00	7.02	12.25	.00	.00	.00	.00	.00	.00
(15, 1)	.04	.08	.00	.00	.00	.00	7.33	10.48	.00	.00	.00	.00	.00	.00
(16, 2)	.14	.34	.00	.00	.00	.00	4.04	4.93	.00	.00	.00	.00	.00	.00
(17, 1)	2.87	6.46	.00	.00	.00	.00	5.03	6.65	.00	.00	.00	.00	.00	.00

(18, 19)	6.35	9.88	.00	.00	.00	.00	.00	8.54	15.58	.00	.00	.00	.00	.00
(21, 7)	1.32	2.53	.00	.00	.00	.00	.00	6.65	7.72	.00	.00	.00	.00	.00
(8, 21)	.63	.79	.00	.00	.00	.00	.00	11.17	19.62	.00	.00	.00	.00	.00
(22, 21)	.07	.13	.00	.00	.00	.00	.00	14.21	19.58	.00	.00	.00	.00	.00
(18, 7)	2.74	5.78	.00	.00	.00	.00	.00	6.70	9.54	.00	.00	.00	.00	.00
(4, 5)	2.59	4.39	.00	.00	.00	.00	.00	6.69	11.94	.00	.00	.00	.00	.00
(5, 4)	5.80	9.98	.00	.00	.00	.00	.00	5.78	9.32	.00	.00	.00	.00	.00
(10, 5)	.08	.12	.00	.00	.00	.00	.00	13.58	20.14	.00	.00	.00	.00	.00
(11, 4)	.11	.30	.00	.00	.00	.00	.00	7.99	9.16	.00	.00	.00	.00	.00
(7, 18)	4.28	7.23	.00	.00	.00	.00	.00	7.76	13.01	.00	.00	.00	.00	.00
(9, 7)	3.71	7.93	.00	.00	.00	.00	.00	10.30	14.83	.00	.00	.00	.00	.00
(6, 7)	.02	.02	.00	.00	.00	.00	.00	8.74	19.05	.00	.00	.00	.00	.00
(19, 18)	1.59	3.09	.00	.00	.00	.00	.00	20.38	31.83	.00	.00	.00	.00	.00
(19, 5)	5.42	9.85	.00	.00	.00	.00	.00	21.14	32.69	.00	.00	.00	.00	.00
(3, 4)	.99	2.02	.00	.00	.00	.00	.00	18.42	26.93	.00	.00	.00	.00	.00
(12, 3)	.13	.24	.00	.00	.00	.00	.00	7.90	13.12	.00	.00	.00	.00	.00
(20, 19)	.22	.42	.00	.00	.00	.00	.00	14.02	23.91	.00	.00	.00	.00	.00
SUBNETWORK-	65.59	117.94	.00	.00	.00	.00	.00	10.07	16.18	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK						
	VEHICLE EMISSIONS (GRAMS/ MILE)						
	5	1	2	6	7	8	4
(7, 9)	.30	.35	.00	.00	.00	.00	.00
(3, 12)	.48	.58	.00	.00	.00	.00	.00
(19, 20)	.30	.37	.00	.00	.00	.00	.00
(2, 13)	.43	.49	.00	.00	.00	.00	.00
(1, 14)	.48	.56	.00	.00	.00	.00	.00
(21, 8)	.04	.04	.00	.00	.00	.00	.00
(1, 15)	.62	.82	.00	.00	.00	.00	.00
(2, 16)	.68	.84	.00	.00	.00	.00	.00
(1, 17)	.26	.32	.00	.00	.00	.00	.00
(21, 22)	.30	.66	.00	.00	.00	.00	.00
(7, 6)	.54	.48	.00	.00	.00	.00	.00
(5, 19)	.11	.13	.00	.00	.00	.00	.00
(2, 1)	.10	.12	.00	.00	.00	.00	.00
(3, 2)	.11	.13	.00	.00	.00	.00	.00
(2, 3)	.15	.16	.00	.00	.00	.00	.00
(13, 2)	.27	.30	.00	.00	.00	.00	.00
(1, 2)	.18	.21	.00	.00	.00	.00	.00
(7, 21)	.37	.48	.00	.00	.00	.00	.00
(14, 1)	.30	.44	.00	.00	.00	.00	.00
(4, 3)	.34	.40	.00	.00	.00	.00	.00
(15, 1)	.29	.30	.00	.00	.00	.00	.00
(16, 2)	.53	.60	.00	.00	.00	.00	.00
(17, 1)	.40	.59	.00	.00	.00	.00	.00
(18, 19)	.29	.33	.00	.00	.00	.00	.00
(21, 7)	.14	.18	.00	.00	.00	.00	.00
(8, 21)	.26	.29	.00	.00	.00	.00	.00
(22, 21)	.20	.29	.00	.00	.00	.00	.00
(18, 7)	.30	.39	.00	.00	.00	.00	.00

(4, 5)	.41	.50	.00	.00	.00	.00	.00
(5, 4)	.42	.51	.00	.00	.00	.00	.00
(10, 5)	.20	.26	.00	.00	.00	.00	.00
(11, 4)	.31	.34	.00	.00	.00	.00	.00
(7, 18)	.30	.39	.00	.00	.00	.00	.00
(9, 7)	.17	.20	.00	.00	.00	.00	.00
(6, 7)	.23	.28	.00	.00	.00	.00	.00
(19, 18)	.04	.04	.00	.00	.00	.00	.00
(19, 5)	.02	.02	.00	.00	.00	.00	.00
(3, 4)	.04	.05	.00	.00	.00	.00	.00
(12, 3)	.23	.23	.00	.00	.00	.00	.00
(20, 19)	.16	.17	.00	.00	.00	.00	.00
SUBNETWORK-	.19	.23	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK	VEHICLE EMISSIONS (GRAMS/ MILE)					
		5	1	2	6	7	8
(7, 9)	19.53	27.65	.00	.00	.00	.00	.00
(3, 12)	31.44	46.52	.00	.00	.00	.00	.00
(19, 20)	19.71	29.63	.00	.00	.00	.00	.00
(2, 13)	27.65	37.88	.00	.00	.00	.00	.00
(1, 14)	30.28	42.72	.00	.00	.00	.00	.00
(21, 8)	3.34	3.55	.00	.00	.00	.00	.00
(1, 15)	39.83	64.70	.00	.00	.00	.00	.00
(2, 16)	37.30	62.24	.00	.00	.00	.00	.00
(1, 17)	17.40	24.60	.00	.00	.00	.00	.00
(21, 22)	16.89	53.17	.00	.00	.00	.00	.00
(7, 6)	36.40	38.55	.00	.00	.00	.00	.00
(5, 19)	7.68	11.31	.00	.00	.00	.00	.00
(2, 1)	6.33	8.45	.00	.00	.00	.00	.00
(3, 2)	7.01	9.62	.00	.00	.00	.00	.00
(2, 3)	10.80	12.73	.00	.00	.00	.00	.00
(13, 2)	21.30	24.94	.00	.00	.00	.00	.00
(1, 2)	12.24	16.22	.00	.00	.00	.00	.00
(7, 21)	23.60	37.27	.00	.00	.00	.00	.00
(14, 1)	21.07	35.22	.00	.00	.00	.00	.00
(4, 3)	21.25	30.78	.00	.00	.00	.00	.00
(15, 1)	26.72	25.32	.00	.00	.00	.00	.00
(16, 2)	42.11	51.43	.00	.00	.00	.00	.00
(17, 1)	25.75	44.04	.00	.00	.00	.00	.00
(18, 19)	18.42	25.93	.00	.00	.00	.00	.00
(21, 7)	8.61	12.12	.00	.00	.00	.00	.00
(8, 21)	23.34	26.28	.00	.00	.00	.00	.00
(22, 21)	17.63	23.83	.00	.00	.00	.00	.00
(18, 7)	19.16	30.65	.00	.00	.00	.00	.00
(4, 5)	24.87	39.33	.00	.00	.00	.00	.00
(5, 4)	24.33	37.42	.00	.00	.00	.00	.00
(10, 5)	17.72	22.99	.00	.00	.00	.00	.00
(11, 4)	25.10	28.33	.00	.00	.00	.00	.00
(7, 18)	18.99	30.75	.00	.00	.00	.00	.00

(9, 7)	11.66	15.73	.00	.00	.00	.00	.00
(6, 7)	19.75	25.11	.00	.00	.00	.00	.00
(19, 18)	2.86	3.38	.00	.00	.00	.00	.00
(19, 5)	1.90	2.32	.00	.00	.00	.00	.00
(3, 4)	3.14	4.30	.00	.00	.00	.00	.00
(12, 3)	17.76	20.01	.00	.00	.00	.00	.00
(20, 19)	13.82	14.65	.00	.00	.00	.00	.00
SUBNETWORK-	12.40	17.93	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

LINK	VEHICLE TYPE-	VEHICLE EMISSIONS (GRAMS/ MILE)						
		5	1	2	6	7	8	4
(7, 9)	1.48	1.09	.00	.00	.00	.00	.00	.00
(3, 12)	2.29	1.74	.00	.00	.00	.00	.00	.00
(19, 20)	1.55	1.16	.00	.00	.00	.00	.00	.00
(2, 13)	2.22	1.61	.00	.00	.00	.00	.00	.00
(1, 14)	2.58	1.90	.00	.00	.00	.00	.00	.00
(21, 8)	.25	.20	.00	.00	.00	.00	.00	.00
(1, 15)	3.13	2.53	.00	.00	.00	.00	.00	.00
(2, 16)	3.54	2.70	.00	.00	.00	.00	.00	.00
(1, 17)	1.37	1.17	.00	.00	.00	.00	.00	.00
(21, 22)	1.78	2.00	.00	.00	.00	.00	.00	.00
(7, 6)	2.53	1.60	.00	.00	.00	.00	.00	.00
(5, 19)	.56	.43	.00	.00	.00	.00	.00	.00
(2, 1)	.57	.50	.00	.00	.00	.00	.00	.00
(3, 2)	.57	.47	.00	.00	.00	.00	.00	.00
(2, 3)	.79	.62	.00	.00	.00	.00	.00	.00
(13, 2)	1.08	.82	.00	.00	.00	.00	.00	.00
(1, 2)	.97	.74	.00	.00	.00	.00	.00	.00
(7, 21)	1.95	1.62	.00	.00	.00	.00	.00	.00
(14, 1)	1.53	1.37	.00	.00	.00	.00	.00	.00
(4, 3)	1.79	1.31	.00	.00	.00	.00	.00	.00
(15, 1)	.83	.77	.00	.00	.00	.00	.00	.00
(16, 2)	2.09	1.83	.00	.00	.00	.00	.00	.00
(17, 1)	2.18	2.03	.00	.00	.00	.00	.00	.00
(18, 19)	1.39	1.00	.00	.00	.00	.00	.00	.00
(21, 7)	.74	.74	.00	.00	.00	.00	.00	.00
(8, 21)	.84	.75	.00	.00	.00	.00	.00	.00
(22, 21)	.58	.73	.00	.00	.00	.00	.00	.00
(18, 7)	1.62	1.29	.00	.00	.00	.00	.00	.00
(4, 5)	2.04	1.53	.00	.00	.00	.00	.00	.00
(5, 4)	2.14	1.67	.00	.00	.00	.00	.00	.00
(10, 5)	.60	.68	.00	.00	.00	.00	.00	.00
(11, 4)	1.13	.96	.00	.00	.00	.00	.00	.00
(7, 18)	1.64	1.29	.00	.00	.00	.00	.00	.00
(9, 7)	.76	.71	.00	.00	.00	.00	.00	.00
(6, 7)	.67	.74	.00	.00	.00	.00	.00	.00
(19, 18)	.18	.15	.00	.00	.00	.00	.00	.00
(19, 5)	.11	.08	.00	.00	.00	.00	.00	.00
(3, 4)	.23	.19	.00	.00	.00	.00	.00	.00

(12, 3)	1.00	.65	.00	.00	.00	.00
(20, 19)	.56	.43	.00	.00	.00	.00
SUBNETWORK-	.96	.76	.00	.00	.00	.00
VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS						

THE HIGHEST NUMBER OF VEHICLES ON THE NETWORK WAS 170 VEHICLES (MAXIMUM ALLOWED IS 20000).
THIS MAXIMUM OCCURRED AT 1259 SECONDS.

THE FRACTION OF VEHICLES THAT WERE UNABLE TO COMPLETE THEIR ASSIGNED TURN MOVEMENT WAS .00320

NETWORK-WIDE AVERAGE STATISTICS

TOTAL VEHICLE- MILE = 2641.17 VEHICLE-HOURS OF: MOVE TIME = 88.01 , DELAY TIME = 55.81 , TOTAL TIME = 143.82

Appendix II

Most Likely Scenario

INPUT FILE NAME: C:\TSIS Projects\Marina-Evanston\SC-mostlikely.trf
RUN DATE : 03/26/04

TTTTTTTTTTT	RRRRRRRRR	AAAAAAA	FFFFFFF
TTTTTTTTTTT	RRRRRRRRRR	AAAAAAA	FFFFFFF
TTTTTTTTTTT	RRRRRRRRRRR	AAAAAAAAA	FFFFFFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRRRRRRRRR	AAAAAAAAAA	FFFFF
TTT	RRRRRRRRRR	AAAAAAAAAA	FFFFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRR RRR	AAA AAA	FFF
TTT	RRR RRR	AAA AAA	FFF

VERSION 5.0
RELEASE DATE MAY 2001

TRAF SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

FHWA OFFICE OF OPERATIONS RESEARCH, DEVELOPMENT AND TECHNOLOGY

1 CARD FILE LIST
 0SEQ.# :-----+---1---+---2---+---3---+---4---+---5---+---6---+---7---+---8

```

1 :Created by TSIS Fri Mar 26 16:04:15 2004 from TNO Version 52          0
2 :                                                               0   1
3 :     1   0      3    7981 0000  0      3 800      7781 7581  2
4 :3600                                         3   2
5 :                                         3
6 :     0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
7 :     1   2 414      2   0100      13   3   16      3   20   18   30   0   11
8 :     2   1 414      2   0100      15   17   14      17   20   18   30   0   11
9 :     3   2 303      2   0100      16   1   13      1   20   18   30   0   11
10:    2   3 303      2   0100      12   4      4   20   18   30   0   11
11:    4   3 410      2   0100      2   12      20   18   30   0   11
12:    3   4 410      2   0144      5      20   18   30   0   11
13:    5   4 433      2   0111      3      11   20   18   30   0   11
14:    4   5 433      2   0111      19      20   18   30   0   11
15: 8009   8      2   0100      21      20   18   0   0   11
16: 8008   9      2   0100      7      20   18   0   0   11
17: 9   7 645      1   010      18   6   21      6   20   18   30   0   11
18: 7   9 645      1   010      8008      20   18   30   0   11
19: 8010 10      2   0100      5      20   18   0   0   11
20: 10  5 377      1   010      4   19      19   20   18   30   0   11
21: 8013 11      2   0100      4      20   18   0   0   11
22: 11  4 386      1   010      5   3      20   18   30   0   11
23: 8002 12      2   0100      3      20   18   0   0   11
24: 12  3 444      1   010      4   2      20   18   30   0   11
25: 3   12 444      1   010      8002      20   18   30   0   11
26: 8003 13      2   0100      2      20   18   0   0   11
27: 13  2 418      1   010      3   16   1      16   20   18   30   0   11
28: 2   13 418      1   010      8003      20   18   30   0   11
29: 8004 14      2   0100      1      20   18   0   0   11
30: 14  1 372      1   010      2   15   17      15   20   18   30   0   11
31: 1   14 372      1   010      8004      20   18   30   0   11
32: 8005 15      2   0100      1      20   18   0   0   11
33: 15  1 296      1   010      17   14   2      14   20   18   30   0   11
34: 1   15 296      1   010      8005      20   18   30   0   11
35: 8006 16      2   0100      2      20   18   0   0   11
36: 16  2 160      1   010      1   13   3      13   20   18   30   0   11
37: 2   16 160      1   010      8006      20   18   30   0   11
38: 17  1 270      2   0100      14   2   15      2   20   18   30   0   11
39: 1   17 270      2   0100      8001      20   18   30   0   11
40: 8001 17      2   0100      1      20   18   0   0   11
41: 8007 6       2   0100      7      20   18   0   0   11
42: 6   7 351      2   0100      21   9   18      9   20   18   30   0   11
43: 7   6 351      2   0100      8007      20   18   30   0   11
44: 18  7 406      2   0140      6   21   9      21   20   18   30   0   11
45: 7   18 406      2   0144      19      20   18   30   0   11
46: 19  18 684      2   0111      7      20   18   30   0   11
47: 18  19 684      2   0100      20   5      5   20   18   30   0   11

```

48 :	19	51360	2	0144	4	20	18	30	0	11
49 :	5	191360	2	0100	18 20	20	18	30	0	11
50 :	8011	20	2	0100	19	20	18	0		11
0SEQ.# :	-----1-----2-----3-----4-----5-----6-----7-----8									

1
 0SEQ.# :-----1-----2-----3-----4-----5-----6-----7-----8

51 :	20	19	594	1	010	5	18	20	18	30	10	11
52 :	19	20	594	1	010	8011		20	18	30	0	11
53 :	7	21	334	2	0100	8	22	20	18	30	0	11
54 :	21	8	314	2	0100	8009		20	18	30	0	11
55 :	8	21	314	2	0100	22 7	7	20	18	30	0	11
56 :	21	7	334	2	0100	9 18 6	18	20	18	30	10	11
57 :	8012	22		2	0100	21		20	18	0		11
58 :	22	21	375	1	010	7 8		20	18	30	10	11
59 :	21	22	375	1	010	8012		20	18	30	0	11
60 :	1	2	2	3	2 1							14
61 :	1	2	2	3	1 1							14
62 :	1	2	2	16	1 1							14
63 :	1	2	2	13	2 1							14
64 :	2	1	1	14	1 1							14
65 :	2	1	1	17	1 1							14
66 :	2	1	1	17	2 1							14
67 :	2	1	1	15	2 1							14
68 :	3	2	2	13	1 1							14
69 :	3	2	2	1	1 1							14
70 :	3	2	2	1	2 1							14
71 :	3	2	2	16	2 1							14
72 :	2	3	3	4	2 1							14
73 :	2	3	3	4	1 1							14
74 :	2	3	3	12	2 1							14
75 :	4	3	3	12	1 1							14
76 :	4	3	3	2	1 1							14
77 :	4	3	3	2	2 1							14
78 :	3	4	4	5	1 1							14
79 :	3	4	4	5	2 1							14
80 :	5	4	4	3	1 1							14
81 :	5	4	4	3	2 1							14
82 :	4	5	5	19	2 1							14
83 :	4	5	5	19	1 1							14
84 :	9	7	7	18	1 1							14
85 :	9	7	7	6	1 1							14
86 :	10	5	5	19	1 11							14
87 :	10	5	5	4	1 11							14
88 :	11	4	4	5	1 11							14
89 :	11	4	4	3	1 11							14
90 :	12	3	3	4	1 1							14
91 :	12	3	3	2	1 1							14
92 :	13	2	2	16	1 1							14
93 :	13	2	2	3	1 1							14
94 :	13	2	2	1	1 1							14
95 :	14	1	1	2	1 1							14
96 :	14	1	1	17	1 1							14

97 :	14	1	1	15	1	1		14
98 :	15	1	1	14	1	1		14
99 :	15	1	1	2	1	1		14
100 :	15	1	1	17	1	1		14
0SEQ.#	-----1-----	-----2-----	-----3-----	-----4-----	-----5-----	-----6-----	-----7-----	-----8-----

1 CARD FILE LIST (CONT.)
 0SEQ.# :-----1-----2-----3-----4-----5-----6-----7-----8

101 :	16	2	2	13	1	1		14
102 :	16	2	2	3	1	1		14
103 :	16	2	2	1	1	1		14
104 :	17	1	1	2	2	1		14
105 :	17	1	1	2	1	1		14
106 :	17	1	1	15	1	1		14
107 :	17	1	1	14	2	1		14
108 :	6	7	7	18	1	1		14
109 :	6	7	7	9	1	1		14
110 :	18	7	7	9	1	1		14
111 :	18	7	7	6	2	1		14
112 :	7	18	18	19	1	1		14
113 :	7	18	18	19	2	1		14
114 :	19	18	18	7	2	1		14
115 :	19	18	18	7	1	1		14
116 :	18	19	19	5	1	1		14
117 :	18	19	19	5	2	1		14
118 :	19	5	5	4	1	1		14
119 :	19	5	5	4	2	1		14
120 :	5	19	19	18	2	1		14
121 :	5	19	19	18	1	1		14
122 :	20	19	19	18	1	11		14
123 :	20	19	19	5	1	11		14
124 :	7	21	21	8	1	1		14
125 :	7	21	21	8	2	1		14
126 :	7	21	21	22	1	1		14
127 :	8	21	21	7	2	1		14
128 :	8	21	21	7	1	1		14
129 :	22	21	21	8	1	1		14
130 :	22	21	21	7	1	1		14
131 :	1	2	15	84	1	0		21
132 :	2	1	2	98	0	0		21
133 :	3	2	0	98	2	0		21
134 :	2	3	2	98	0	0		21
135 :	4	3	0	98	2	0		21
136 :	3	4	0	0	100	0		21
137 :	5	4	100	0	0	0		21
138 :	4	5	100	0	0	0		21
139 :	8009	8		100				21
140 :	8008	9		100				21
141 :	9	7	98	1	1	0		21
142 :	7	9		100				21
143 :	8010	10		100				21
144 :	10	5	50	50	0	0		21
145 :	8013	11		100				21

146 :	11	4	0	37	63	0		21			
147 :	8002	12		100				21			
148 :	12	3	37	0	63	0		21			
149 :	3	12		100				21			
150 :	8003	13		100				21			
0SEQ.# :	-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8										
1	CARD FILE LIST (CONT.)										
0SEQ.# :	-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8										
151 :	13	2	29	23	48	0		21			
152 :	2	13		100				21			
153 :	8004	14		100				21			
154 :	14	1	4	7	89	0		21			
155 :	1	14		100				21			
156 :	8005	15		100				21			
157 :	15	1	20	29	51	0		21			
158 :	1	15		100				21			
159 :	8006	16		100				21			
160 :	16	2	25	25	50	0		21			
161 :	2	16		100				21			
162 :	17	1	15	84	1	0		21			
163 :	1	17		100				21			
164 :	8001	17		100				21			
165 :	8007	6		100				21			
166 :	6	7	33	33	33	0		21			
167 :	7	6		100				21			
168 :	18	7	0	27	73	0		21			
169 :	7	18	0	0	100	0		21			
170 :	19	18	100	0	0	0		21			
171 :	18	19	2	98	0	0		21			
172 :	19	5	0	0	100	0		21			
173 :	5	19	0	98	2	0		21			
174 :	8011	20		100				21			
175 :	20	19	50	0	50	0		21			
176 :	19	20		100				21			
177 :	7	21	0	99	1	0		21			
178 :	21	8		100				21			
179 :	8	21	0	100	0	0		21			
180 :	21	7	4	93	3	0		21			
181 :	8012	22		100				21			
182 :	22	21	98	0	2	0		21			
183 :	21	22		100				21			
184 :	1	0	14	17	15	2	80	26	3	1	35
185 :	2	5	13	1	16	3	80	26	3	1	35
186 :	3	10	12	2	4		80	26	3	1	35
187 :	4	0	11	3	5		80	26	3	1	35
188 :	5		4	10	19						35
189 :	7	0	21	6	18	9	80	30			35
190 :	8		8009	21							35
191 :	9		8008	7							35
192 :	10		8010								35
193 :	11		8013								35
194 :	12		8002	3							35

195 :	13	8003	2		35	
196 :	14	8004	1		35	
197 :	15	8005	1		35	
198 :	16	8006	2		35	
199 :	17	18001			35	
200 :	6	8007	7		35	
0SEQ.# :	-----1-----2-----3-----4-----5-----6-----7-----8					
1	CARD FILE LIST (CONT.)					
0SEQ.# :	-----1-----2-----3-----4-----5-----6-----7-----8					
201 :	18	7	19		35	
202 :	19	0	5	20	18	
				80	30	
203 :	20	8011	19		35	
204 :	21	7	8	22		
205 :	22	8012	21		35	
206 :	1	2121	1212	0202	2222	
207 :	2	2121	1212	0202	2222	
208 :	3	211	122	022	222	
209 :	4	211	122	022	222	
210 :	5	111			36	
211 :	7	2131	1212		36	
212 :	8	11			36	
213 :	9	11			36	
214 :	10	1			36	
215 :	11	1			36	
216 :	12	11			36	
217 :	13	11			36	
218 :	14	11			36	
219 :	15	11			36	
220 :	16	11			36	
221 :	17	11			36	
222 :	6	11			36	
223 :	18	11			36	
224 :	19	121	212		36	
225 :	20	11			36	
226 :	21	111			36	
227 :	22	11			36	
228 :8008	91292	0	0	100	50	
229 :8009	8 399	0	0	100	50	
230 :8010	10 51	0	0	100	50	
231 :8013	11 51	0	0	100	50	
232 :8002	12 51	0	0	100	50	
233 :8003	13 51	0	0	100	50	
234 :8004	14 183	0	0	100	50	
235 :8005	15 21	0	0	100	50	
236 :8006	16 83	0	0	100	50	
237 :8001	171160	0	0	100	50	
238 :8007	6 10	0	0	100	50	
239 :8011	20 46	0	0	100	50	
240 :8012	22 51	0	0	100	50	
241 :	0				170	
242 :8008	856	4745			195	
243 :8009	24	3849			195	

244 :8010	1720	1081	195
245 :8013	656	1553	195
246 :8002	668	1085	195
247 :8003	712	629	195
248 :8004	796	377	195
249 :8005	1712	397	195
250 :8006	1486	871	195
0SEQ.#	-----1-----2-----3-----4-----5-----6-----7-----8		

1 CARD FILE LIST (CONT.)
 0SEQ.# -----1-----2-----3-----4-----5-----6-----7-----8

251 :8001	1340	24	195
252 :8007	797	3388	195
253 :8011	2203	3056	195
254 :8012	487	4431	195
255 : 1	1304	389	195
256 : 2	1264	801	195
257 : 3	1220	1101	195
258 : 4	1200	1511	195
259 : 5	1576	1725	195
260 : 7	832	3845	195
261 : 8	184	3849	195
262 : 9	872	4489	195
263 : 10	1640	1353	195
264 : 11	816	1553	195
265 : 12	776	1089	195
266 : 13	864	681	195
267 : 14	932	377	195
268 : 15	1600	401	195
269 : 16	1416	851	195
270 : 17	1330	120	195
271 : 6	797	3496	195
272 : 18	1224	3738	195
273 : 19	1356	3067	195
274 : 20	1950	3056	195
275 : 21	498	3848	195
276 : 22	476	4222	195
277 : 1	0	0	210
0SEQ.#	-----1-----2-----3-----4-----5-----6-----7-----8		

TRAF SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FHWA OFFICE OF OPERATIONS RESEARCH, DEVELOPMENT AND TECHNOLOGY

0
 0
 Created by TSIS Fri Mar 26 16:04:15 2004 from TNO Version 52

0
 0
 DATE = 3/19/2004
 USER =
 AGENCY =
 RUN CONTROL DATA
 VALUE RUN PARAMETERS AND OPTIONS
 0 0 RUN IDENTIFICATION NUMBER
 0 1 RUN TYPE CODE = (1, 2, 3) TO RUN (SIMULATION, ASSIGNMENT, BOTH)
 (-1,-2,-3) TO CHECK (SIMULATION, ASSIGNMENT, BOTH) ONLY
 0 NETSIM ENVIRONMENTAL OPTIONS

 0 FUEL/EMISSION RATE TABLES ARE NOT PRINTED
 0 SIMULATION: PERFORMED ENVIRONMENTAL MEASURES: CALCULATED
 RATE TABLES: EMBEDDED TRAJECTORY FILE: NOT WRITTEN
 0 CODE = (0,1,2) FOR UNIFORM DISTRIBUTION, NORMAL DISTRIBUTION, ERLANG DISTRIBUTION
 0 INPUT UNITS CODE = (0,1) IF INPUT IS IN (ENGLISH, METRIC) UNITS
 0 OUTPUT UNITS CODE = (0,1,2,3) IF OUTPUT IS IN (SAME AS INPUT, ENGLISH, METRIC, BOTH) UNITS
 0 800 CLOCK TIME AT START OF SIMULATION (HHMM)
 0 0 SIGNAL TRANSITION CODE = (0,1,2,3) IF(NO, IMMEDIATE, 2-CYCLE, 3-CYCLE) TRANSITION WAS REQUESTED
 0 7581 RANDOM NUMBER SEED
 7781 RANDOM NUMBER SEED TO GENERATE TRAFFIC STREAM FOR NETSIM OR LEVEL I SIMULATION
 7981 RANDOM NUMBER SEED TO GENERATE EMISSION HEADWAYS FOR NETSIM SIMULATION
 3600 DURATION (SEC) OF TIME PERIOD NO. 1
 0 60 LENGTH OF A TIME INTERVAL, SECONDS
 0 3 MAXIMUM INITIALIZATION TIME, NUMBER OF TIME INTERVALS
 0 0 NUMBER OF TIME INTERVALS BETWEEN SUCCESSIVE STANDARD OUTPUTS
 0 0 TIME INTERMEDIATE OUTPUT WILL BEGIN AT INTERVALS OF 0 SECS. FOR 0 SECS. FOR MICROSCOPIC MODELS
 0 0 NETSIM MOVEMENT-SPECIFIC OUTPUT CODE = (0,1) (IF NOT, IF) REQUESTED FOR NETSIM SUBNETWORK
 0 0 NETSIM GRAPHICS OUTPUT CODE = (0,1) IF GRAPHICS OUTPUT (IS NOT, IS) REQUESTED

TIME PERIOD 1 - NETSIM DATA

1

 0 NETSIM LINKS
 -LANES- -CHANNEL-
 F C
 U U
 LENGTH L PKT GRD LINK R DESTINATION NODE OPP. TIME HDWY. FREE RTOR PED LANE STREET
 FT / M L L R PCT TYPE B234567 LEFT THRU RGHT DIAG NODE SEC SEC MPH/KMPH CODE CODE ALIGN -MENT NAME
 (1, 2) 414/ 126 2 0 0 0 1 0000000 13 3 16 0 3 2.0 1.8 30/ 48 0 0 1-1*
 (2, 1) 414/ 126 2 0 0 0 1 0000000 15 17 14 0 17 2.0 1.8 30/ 48 0 0 1-1*
 (3, 2) 303/ 92 2 0 0 0 1 0000000 16 1 13 0 1 2.0 1.8 30/ 48 0 0 1-1*
 (2, 3) 303/ 92 2 0 0 0 1 0000000 12 4 0 0 4 2.0 1.8 30/ 48 0 0 1-1*

(4, 3)	410/ 125	2 0 0 0 0	1	0000000	0 2 12 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(3, 4)	410/ 125	2 0 0 0 0	1	4400000	0 0 5 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(5, 4)	433/ 132	2 0 0 0 0	1	1100000	3 0 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(4, 5)	433/ 132	2 0 0 0 0	1	1100000	19 0 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8009, 8)	0/ 0 2 0 0 0	0 1	0000000	0 21 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(8008, 9)	0/ 0 2 0 0 0	0 1	0000000	0 7 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(9, 7)	645/ 197	1 0 0 0 0	1	0000000	18 6 21 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(7, 9)	645/ 197	1 0 0 0 0	1	0000000	0 8008 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8010, 10)	0/ 0 2 0 0 0	0 1	0000000	0 5 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(10, 5)	377/ 115	1 0 0 0 0	1	0000000	4 19 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8013, 11)	0/ 0 2 0 0 0	0 1	0000000	0 4 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(11, 4)	386/ 118	1 0 0 0 0	1	0000000	0 5 3 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8002, 12)	0/ 0 2 0 0 0	0 1	0000000	0 3 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(12, 3)	444/ 135	1 0 0 0 0	1	0000000	4 0 2 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(3, 12)	444/ 135	1 0 0 0 0	1	0000000	0 8002 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8003, 13)	0/ 0 2 0 0 0	0 1	0000000	0 2 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(13, 2)	418/ 127	1 0 0 0 0	1	0000000	3 16 1 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(2, 13)	418/ 127	1 0 0 0 0	1	0000000	0 8003 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8004, 14)	0/ 0 2 0 0 0	0 1	0000000	0 1 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(14, 1)	372/ 113	1 0 0 0 0	1	0000000	2 15 17 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(1, 14)	372/ 113	1 0 0 0 0	1	0000000	0 8004 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8005, 15)	0/ 0 2 0 0 0	0 1	0000000	0 1 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(15, 1)	296/ 90	1 0 0 0 0	1	0000000	17 14 2 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(1, 15)	296/ 90	1 0 0 0 0	1	0000000	0 8005 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8006, 16)	0/ 0 2 0 0 0	0 1	0000000	0 2 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(16, 2)	160/ 49	1 0 0 0 0	1	0000000	1 13 3 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(2, 16)	160/ 49	1 0 0 0 0	1	0000000	0 8006 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(17, 1)	270/ 82	2 0 0 0 0	1	0000000	14 2 15 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(1, 17)	270/ 82	2 0 0 0 0	1	0000000	0 8001 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8001, 17)	0/ 0 2 0 0 0	0 1	0000000	0 1 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(8007, 6)	0/ 0 2 0 0 0	0 7	0000000	0 7 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(6, 7)	351/ 107	2 0 0 0 0	1	0000000	21 9 18 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(7, 6)	351/ 107	2 0 0 0 0	1	0000000	0 8007 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(18, 7)	406/ 124	2 0 0 0 0	1	4000000	6 21 9 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(7, 18)	406/ 124	2 0 0 0 0	1	4400000	0 0 19 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(19, 18)	684/ 208	2 0 0 0 0	1	1100000	7 0 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(18, 19)	684/ 208	2 0 0 0 0	1	0000000	20 5 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(19, 5)	1360/ 415	2 0 0 0 0	1	4400000	0 0 4 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(5, 19)	1360/ 415	2 0 0 0 0	1	0000000	0 18 20 0 0 0	2.0	1.8	30/ 48	0 0	1-1*
(8011, 20)	0/ 0 2 0 0 0	0 1	0000000	0 19 0 0 0 0	2.0	1.8	0/ 0	0 0	0 0	1-1*
(20, 19)	594/ 181	1 0 0 0 0	1	0000000	5 0 18 0 0 0	2.0	1.8	30/ 48	1 0	1-1*

1

NETSIM LINKS (CONT.)

0	-LANES-		-CHANNEL-											STREET NAME	
	LINK	LENGTH FT / M	F U	C U	DESTINATION NODE					OPP. NODE	TIME SEC	Q DIS HDWY. SEC	FREE SPEED MPH/KMPH	LANE ALIGN -MENT	
			L R	P C T	G R D	L I N K T Y P E	B 2 3 4 5 6	LEFT	THRU	RGHT	DIAG				
(19, 20)	594/ 181	1 0 0 0 1	0000000	0 8011 0 0 0 0	2.0	1.8	30/ 48	0 0	0 0	1-1*					
(7, 21)	334/ 102	2 0 0 0 1	0000000	0 8 22 0 0 0	2.0	1.8	30/ 48	0 0	0 0	1-1*					
(21, 8)	314/ 96	2 0 0 0 1	0000000	0 8009 0 0 0 0	2.0	1.8	30/ 48	0 0	0 0	1-1*					

(8, 21)	314/ 96	2 0 0 0 0	1	0000000	22	7	0	0	7 2.0	1.8	30/ 48	0 0	1-1*
(21, 7)	334/ 102	2 0 0 0 0	1	0000000	9	18	6	0	18 2.0	1.8	30/ 48	1 0	1-1*
(8012, 22)	0/ 0	2 0 0 0 0	1	0000000	0	21	0	0	0 2.0	1.8	0/ 0	0 0	1-1*
(22, 21)	375/ 114	1 0 0 0 0	1	0000000	7	0	8	0	0 2.0	1.8	30/ 48	1 0	1-1*
(21, 22)	375/ 114	1 0 0 0 0	1	0000000	0 8012	0	0	0	2.0	1.8	30/ 48	0 0	1-1*

* INDICATES DEFAULT VALUES WERE SPECIFIED

LINK TYPE	LANE CHANNELIZATION CODES	RTOR CODES	PEDESTRIAN CODES
IDENTIFIES THE DISTRIBUTION USED FOR QUEUE DISCHARGE AND START-UP LOST TIME CHARACTERISTICS.	0 UNRESTRICTED 1 LEFT TURNS ONLY 2 BUSES ONLY 3 CLOSED 4 RIGHT TURNS ONLY 5 CAR - POOLS 6 CAR - POOLS + BUSES 7 RIGHT TURNS + RIGHT DIAGONAL AND/OR THROUGH 8 LEFT TURNS + LEFT DIAGONAL AND/OR THROUGH 9 ALL PERMITTED MOVEMENTS WITH RESPECT TO THE GEOMETRY AND ADJACENT LANE CHANNELIZATIONS D DIAGONAL TRAFFIC ONLY T THROUGH TRAFFIC ONLY	0 RTOR PERMITTED 1 RTOR PROHIBITED	0 NO PEDESTRIANS 1 LIGHT 2 MODERATE 3 HEAVY

TOTAL LINKS: 53 (ALLOWED: 1000)
 TOTAL NON-ENTRY NODES: 22 (ALLOWED: 500)

OPTIONAL NETSIM LANE ALIGNMENTS

LINK	RECEIVING LINK	LANE	ALIGNED LANES ON RECEIVING LINK
(1, 2)	(2, 3)	2	2
(1, 2)	(2, 3)	1	1
(1, 2)	(2, 16)	1	1
(1, 2)	(2, 13)	2	1
(2, 1)	(1, 14)	1	1
(2, 1)	(1, 17)	1	1
(2, 1)	(1, 17)	2	2
(2, 1)	(1, 15)	2	1
(3, 2)	(2, 13)	1	1

(3, 2)	(2, 1)	1	1
(3, 2)	(2, 1)	2	2
(3, 2)	(2, 16)	2	1
(2, 3)	(3, 4)	2	2
(2, 3)	(3, 4)	1	1
(2, 3)	(3, 12)	2	1
(4, 3)	(3, 12)	1	1
(4, 3)	(3, 2)	1	1
(4, 3)	(3, 2)	2	2
(3, 4)	(4, 5)	1	1
(3, 4)	(4, 5)	2	2
(5, 4)	(4, 3)	1	1
(5, 4)	(4, 3)	2	2
(4, 5)	(5, 19)	2	2
(4, 5)	(5, 19)	1	1
(9, 7)	(7, 18)	1	2
(9, 7)	(7, 6)	1	2
(10, 5)	(5, 19)	1	1 2
(10, 5)	(5, 4)	1	1 2
(11, 4)	(4, 5)	1	1 2
(11, 4)	(4, 3)	1	1 2
(12, 3)	(3, 4)	1	2
(12, 3)	(3, 2)	1	1
(13, 2)	(2, 16)	1	1
(13, 2)	(2, 3)	1	2
(13, 2)	(2, 1)	1	1
(14, 1)	(1, 2)	1	2

(14, 1)	(1, 17)	1	1
(14, 1)	(1, 15)	1	1
(15, 1)	(1, 14)	1	1
(15, 1)	(1, 2)	1	1
(15, 1)	(1, 17)	1	2
(16, 2)	(2, 13)	1	1
(16, 2)	(2, 3)	1	1
(16, 2)	(2, 1)	1	2
(17, 1)	(1, 2)	2	2
(17, 1)	(1, 2)	1	1
(17, 1)	(1, 15)	1	1
(17, 1)	(1, 14)	2	1
(6, 7)	(7, 18)	1	1
(6, 7)	(7, 9)	1	1
(18, 7)	(7, 9)	1	1
(18, 7)	(7, 6)	2	2
(7, 18)	(18, 19)	1	1
(7, 18)	(18, 19)	2	2
(19, 18)	(18, 7)	2	2
(19, 18)	(18, 7)	1	1
(18, 19)	(19, 5)	1	1
(18, 19)	(19, 5)	2	2
(19, 5)	(5, 4)	1	1
(19, 5)	(5, 4)	2	2
(5, 19)	(19, 18)	2	2
(5, 19)	(19, 18)	1	1
(20, 19)	(19, 18)	1	1 2

(20, 19)	(19, 5)	1	1	2
(7, 21)	(21, 8)	1	1	
(7, 21)	(21, 8)	2	2	
(7, 21)	(21, 22)	1	1	
(8, 21)	(21, 7)	2	2	
(8, 21)	(21, 7)	1	1	
(22, 21)	(21, 8)	1	1	

***** WARNING - 500 - Link (19,5) may not have been specified correctly on Record Type 11. Its traffic opposes traffic on link (10,5), but no receiving link (5,10) was input. Check Record Type 11.

1

NETSIM TURNING MOVEMENT DATA

LINK	TURN MOVEMENT PERCENTAGES				TURN MOVEMENT POSSIBLE				POCKET LENGTH (IN FEET/METERS)			
	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	RIGHT	LEFT	RIGHT
(1, 2)	15	84	1	0	YES	YES	YES	NO	0/	0	0/	0
(2, 1)	2	98	0	0	YES	YES	YES	NO	0/	0	0/	0
(3, 2)	0	98	2	0	YES	YES	YES	NO	0/	0	0/	0
(2, 3)	2	98	0	0	YES	YES	NO	NO	0/	0	0/	0
(4, 3)	0	98	2	0	NO	YES	YES	NO	0/	0	0/	0
(3, 4)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(5, 4)	100	0	0	0	YES	NO	NO	NO	0/	0	0/	0
(4, 5)	100	0	0	0	YES	NO	NO	NO	0/	0	0/	0
(8009, 8)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8008, 9)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(9, 7)	98	1	1	0	YES	YES	YES	NO	0/	0	0/	0
(7, 9)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8010, 10)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(10, 5)	50	50	0	0	YES	YES	NO	NO	0/	0	0/	0
(8013, 11)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(11, 4)	0	37	63	0	NO	YES	YES	NO	0/	0	0/	0
(8002, 12)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(12, 3)	37	0	63	0	YES	NO	YES	NO	0/	0	0/	0
(3, 12)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8003, 13)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(13, 2)	29	23	48	0	YES	YES	YES	NO	0/	0	0/	0
(2, 13)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8004, 14)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(14, 1)	4	7	89	0	YES	YES	YES	NO	0/	0	0/	0
(1, 14)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8005, 15)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(15, 1)	20	29	51	0	YES	YES	YES	NO	0/	0	0/	0
(1, 15)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0

(8006, 16)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(16, 2)	25	25	50	0	YES	YES	YES	NO	0/	0	0/	0
(2, 16)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(17, 1)	15	84	1	0	YES	YES	YES	NO	0/	0	0/	0
(1, 17)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8001, 17)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8007, 6)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(6, 7)	34	33	33	0	YES	YES	YES	NO	0/	0	0/	0
(7, 6)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(18, 7)	0	27	73	0	YES	YES	YES	NO	0/	0	0/	0
(7, 18)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(19, 18)	100	0	0	0	YES	NO	NO	NO	0/	0	0/	0
(18, 19)	2	98	0	0	YES	YES	NO	NO	0/	0	0/	0
(19, 5)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(5, 19)	0	98	2	0	NO	YES	YES	NO	0/	0	0/	0
(8011, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(20, 19)	50	0	50	0	YES	NO	YES	NO	0/	0	0/	0
(19, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(7, 21)	0	99	1	0	NO	YES	YES	NO	0/	0	0/	0
(21, 8)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8, 21)	0	100	0	0	YES	YES	NO	NO	0/	0	0/	0
(21, 7)	4	93	3	0	YES	YES	YES	NO	0/	0	0/	0
(8012, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(22, 21)	98	0	2	0	YES	NO	YES	NO	0/	0	0/	0
(21, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0

SPECIFIED FIXED-TIME SIGNAL CONTROL, AND SIGN CONTROL, CODES

INTERVAL NUMBER	OFFSET		0 SEC		NODE 1			CYCLE LENGTH		110 SEC	
	DURATION (SEC)	DURATION (PCT)	+ - - - -	(14, 1)	(17, 1)	(15, 1)	- - - - -	(2, 1)	- - - - -	+ + + + +	
1	80	72		2	1		2		1		
2	26	23		1	2		1		2		
3	3	2		0	2		0		2		

		NODE		2							
		OFFSET 5 SEC								CYCLE LENGTH 110 SEC	
		DURATION		+-----+		APPROACHES		+-----+			
INTERVAL NUMBER	(SEC)	(PCT)	(13 , 2)	(1 , 2)	(16 , 2)	(3 , 2)					
1	80	72	2	1	2	1	2	1	2		
2	26	23	1	2	1	1	2	1	2		
3	3	2	0	2	0	0	2	0	2		

	4	1	0	2	2	2	2	
					NODE	3		
	OFFSET	10 SEC						CYCLE LENGTH 110 SEC
INTERVAL	DURATION		+ - - - -		- - - - -		- - - - -	+
NUMBER	(SEC)	(PCT)	(12 ,	3)	(2 ,	3)	(4 ,	3)
1	80	72	2		1		1	
2	26	23		1		2		2
3	2	2			2		2	

NUMBER (SEC) (PCT) (8006, 16) (2, 16)
 1 0 100 1
 NODE 17 IS UNDER SIGN CONTROL
 APPROACHES +-----+
 INTERVAL DURATION
 NUMBER (SEC) (PCT) (1, 17) (8001, 17)
 1 0 100 1
 NODE 18 IS UNDER SIGN CONTROL
 APPROACHES +-----+
 INTERVAL DURATION
 NUMBER (SEC) (PCT) (7, 18) (19, 18)
 1 0 100 1
 NODE 19
 CYCLE LENGTH 110 SEC
 INTERVAL DURATION 0 SEC
 NUMBER (SEC) (PCT) (+-----+ APPROACHES +-----+
 1 80 72 (5, 19) (20, 19) (18, 19)
 2 30 27 1 2 1
 2 1 2
 NODE 20 IS UNDER SIGN CONTROL
 APPROACHES +-----+
 INTERVAL DURATION
 NUMBER (SEC) (PCT) (8011, 20) (19, 20)
 1 0 100 1
 NODE 21 IS UNDER SIGN CONTROL
 APPROACHES +-----+
 NUMBER (SEC) (PCT) (7, 21) (8, 21) (22, 21)
 1 0 100 1 1 1
 NODE 22 IS UNDER SIGN CONTROL
 APPROACHES +-----+
 NUMBER (SEC) (PCT) (8012, 22) (21, 22)
 1 0 100 1
 INTERPRETATION OF SIGNAL CODES

0	YIELD OR AMBER
1	GREEN
2	RED
3	RED WITH GREEN RIGHT ARROW
4	RED WITH GREEN LEFT ARROW
5	STOP
6	RED WITH GREEN DIAGONAL ARROW
7	NO TURNS-GREEN THRU ARROW
8	RED WITH LEFT AND RIGHT GREEN ARROW
9	NO LEFT TURN-GREEN THRU AND RIGHT

TRAFFIC CONTROL TABLE - SIGNS AND FIXED TIME SIGNALS

CONTROL CODES GO = PROTECTED
 NOGO = NOT PERMITTED

AMBR = AMBER
 PERM = PERMITTED NOT PROTECTED
 PROT = PROTECTED
 STOP = STOP SIGN
 YLD = YIELD SIGN

NODE 1		FIXED TIME CONTROL		OFFSET = 0 SECONDS	CYCLE LENGTH = 110 SECONDS	
INTERVAL DURATION		APPROACHES				
		(14, 1)	(17, 1)	(15, 1)	(2, 1)	
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
3	3	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	NOGO NOGO NOGO
4	1	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO	NOGO NOGO NOGO
		NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO
NODE 2		FIXED TIME CONTROL		OFFSET = 5 SECONDS	CYCLE LENGTH = 110 SECONDS	
INTERVAL DURATION		APPROACHES				
		(13, 2)	(1, 2)	(16, 2)	(3, 2)	
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
3	3	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	NOGO NOGO NOGO
4	1	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO	NOGO NOGO NOGO
		NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO
NODE 3		FIXED TIME CONTROL		OFFSET = 10 SECONDS	CYCLE LENGTH = 110 SECONDS	
INTERVAL DURATION		APPROACHES				
		(12, 3)	(2, 3)	(4, 3)		
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO	PERM GO	GO GO	NOGO NOGO	
3	3	PROT GO	NOGO NOGO		NOGO NOGO	
4	1	AMBR AMBR	NOGO NOGO		NOGO NOGO	
		NOGO NOGO	NOGO NOGO		NOGO NOGO	
NODE 4		FIXED TIME CONTROL		OFFSET = 0 SECONDS	CYCLE LENGTH = 110 SECONDS	
INTERVAL DURATION		APPROACHES				
		(11, 4)	(3, 4)	(5, 4)		
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO	GO	PROT	NOGO	
3	3	GO GO	NOGO		NOGO	
4	1	AMBR AMBR	NOGO		NOGO	
		NOGO NOGO	NOGO		NOGO	

NODE 5 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (4, 5) (10, 5) (19, 5)
 LEFT THRU RITE DIAG
 1 0 PROT PERM GO GO

NODE 6 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8007, 6) (7, 6)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 7 FIXED TIME CONTROL OFFSET = 0 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----
 (21, 7) (6, 7) (18, 7) (9, 7)
 LEFT THRU RITE DIAG
 1 80 NOGO NOGO NOGO PERM GO GO NOGO NOGO GO PERM GO GO NOGO NOGO NOGO
 2 30 PERM GO GO NOGO NOGO NOGO PERM GO GO NOGO NOGO NOGO

NODE 8 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8009, 8) (21, 8)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 9 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8008, 9) (7, 9)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 10 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8010, 10)
 LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG

1 1 0 GO

 NODE 11 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8013, 11) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO

 NODE 12 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8002, 12) (3, 12) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

 NODE 13 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8003, 13) (2, 13) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

 NODE 14 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8004, 14) (1, 14) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

 NODE 15 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8005, 15) (1, 15) LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG LEFT THRU RITE DIAG
1 0 GO GO

 NODE 16 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8006, 16) (2, 16)

1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
<hr/>							
		SIGN CONTROL					
<hr/>							
INTERVAL DURATION							
(1, 17) (8001, 17) APPROACHES							
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
<hr/>							
		SIGN CONTROL					
<hr/>							
INTERVAL DURATION							
(7, 18) (19, 18) APPROACHES							
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
<hr/>							
		FIXED TIME CONTROL					
OFFSET = 0 SECONDS CYCLE LENGTH = 110 SECONDS							
<hr/>							
INTERVAL DURATION							
(5, 19) (20, 19) (18, 19) APPROACHES							
1	80	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG NOGO	LEFT THRU RITE DIAG NOGO	LEFT THRU RITE DIAG PERM	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG
2	30	NOGO	NOGO	PROT	GO	NOGO	NOGO
<hr/>							
		SIGN CONTROL					
<hr/>							
INTERVAL DURATION							
(8011, 20) (19, 20) APPROACHES							
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
<hr/>							
		SIGN CONTROL					
<hr/>							
INTERVAL DURATION							
(7, 21) (8, 21) (22, 21) APPROACHES							
1	0	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG PERM	LEFT THRU RITE DIAG PROT	LEFT THRU RITE DIAG GO	LEFT THRU RITE DIAG
<hr/>							
		SIGN CONTROL					

INTERVAL DURATION		APPROACHES				
		(8012, 22)	(21, 22)	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
1	0	GO	GO	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG

ENTRY LINK VOLUMES

LINK	FLOW RATE (VEH/HOUR)	TRUCKS (PERCENT)	CAR POOLS (PERCENT)	HOV VIOLATORS (PERCENT)
(8008, 9)	1292	0	0	1.00
(8009, 8)	399	0	0	1.00
(8010, 10)	51	0	0	1.00
(8013, 11)	51	0	0	1.00
(8002, 12)	51	0	0	1.00
(8003, 13)	51	0	0	1.00
(8004, 14)	183	0	0	1.00
(8005, 15)	21	0	0	1.00
(8006, 16)	83	0	0	1.00
(8001, 17)	1160	0	0	1.00
(8007, 6)	10	0	0	1.00
(8011, 20)	46	0	0	1.00
(8012, 22)	51	0	0	1.00

NETSIM VEHICLE TYPE SPECIFICATIONS

VEHICLE TYPE	LENGTH FEET/METERS	Q DSCHG HDWY FACTOR (PCT)	AVG. OCCUP.	FLEET COMPONENT PERCENTAGES				PERF. INDEX
				AUTO	TRUCK	CARPOOL	BUS	
1**	16.0/ 4.9	100	1.3	75	0	0	0	2
2**	35.0/ 10.7	120	1.2	0	100	0	0	3
3**	16.0/ 4.9	100	2.5	0	0	100	0	2
4**	40.0/ 12.2	120	25.0	0	0	0	100	7
5**	14.0/ 4.3	100	1.3	25	0	0	0	1
6**	53.0/ 16.2	120	1.2	0	0	0	0	4
7**	53.0/ 16.2	120	1.2	0	0	0	0	5
8**	64.0/ 19.5	120	1.2	0	0	0	0	6
9**	14.0/ 4.3	100	2.5	0	0	0	0	1

** INDICATES THAT ALL PARAMETERS FOR VEHICLE TYPE ASSUME DEFAULT VALUES

1

DEFAULT LINK GEOMETRIC DATA

WIDTH OF LANES 12 FEET

LONGITUDINAL DISTANCE FROM THE STOP 4 FEET
LINE TO THE NEAR CURB

FORWARD SIGHT DISTANCE AT STOP LINE 1000 FEET

1

PARAMETERS	LANE CHANGE DATA		UNITS
	VALUE ENGLISH / METRIC		
DURATION OF LANE CHANGE MANEUVER	3*		SECONDS
MEAN DRIVER REACTION TIME	10*		TENTHS OF A SECOND
TIME REQUIRED FOR SUCCESSIVE LANE CHANGES	20*		TENTHS OF A SECOND
DECCELERATION AT BEGINNING OF LANE CHANGE MANEUVER	5*	/ 2	FEET [METERS] / SECOND**2
DIFFERENCE IN VEHICLE'S DECELERATION OVER THE DISTANCE BETWEEN ITS POSITION WHEN IT BEGINS TO RESPOND TO AN OBSTRUCTION AND THE POSITION OF THE OBSTRUCTION -			
FOR MANDATORY LANE CHANGE:	10*	/ 3	FEET [METERS] / SECOND**2
FOR DISCRETIONARY LANE CHANGE:	5*	/ 2	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF LEAD VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/ 4	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF FOLLOWER VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/ 4	FEET [METERS] / SECOND**2
DRIVER TYPE FACTOR USED TO COMPUTE DRIVER AGGRESSIONESS	25*		
URGENCY THRESHOLD	2*	/ 1	10 * SECONDS**2 / FEET [METERS]
SAFETY FACTOR FOR COMPUTATION OF PERCEIVED RISK OF LANE CHANGE	8*		FACTOR * 10
PERCENT OF DRIVERS WHO COOPERATE WITH A LANE CHANGER	50*		%
HEADWAY BELOW WHICH ALL DRIVERS WILL ATTEMPT TO CHANGE LANES	20*		TENTHS OF A SECOND
HEADWAY ABOVE WHICH NO DRIVERS WILL ATTEMPT TO CHANGE LANES	50*		TENTHS OF A SECOND
FORWARD DISTANCE SCANNED BY DRIVER FOR A TURN MOVEMENT / BUS STATION IN ORDER TO ASSESS NEED FOR A LANE CHANGE	300*	/ 91	FEET / [METERS]

* INDICATES DEFAULT VALUES WERE SPECIFIED

MAXIMUM ACCELERATION TABLE

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	8.00	9.00	6.00	5.00	5.00	5.00	4.00	3.00	2.00	2.00	1.00	1.00

2	6.00	12.00	10.00	8.00	7.00	6.00	4.00	4.00	4.00	2.00	2.00	2.00
3	4.69	5.35	4.94	3.47	3.09	2.61	2.14	1.70	1.27	.86	.46	.06
4	2.81	2.42	2.15	2.04	1.74	1.42	1.12	.83	.56	.30	.04	-.23
5	2.76	2.37	1.81	1.56	1.25	.97	.73	.52	.32	.14	-.05	-.23
6	2.45	2.14	1.42	1.12	.85	.63	.44	.29	.14	.00	-.14	-.27
7	7.47	5.33	3.17	2.66	2.29	1.65	1.40	.95	.75	.50	-.33	-.35

GRADE CORRECTION FACTORS FOR ACCELERATION (USED BY FRESIM ONLY)

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.21	.21	.21	.22	.23	.25	.26	.27	.28	.28	.30	.31
4	.16	.15	.19	.22	.24	.25	.27	.28	.29	.31	.31	.31
5	.18	.17	.20	.23	.25	.27	.28	.30	.31	.31	.31	.31
6	.18	.18	.22	.25	.27	.29	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

GRADE CORRECTION FACTORS FOR FUEL CONSUMPTION (USED BY FRESIM ONLY)

PERFORMANCE INDEX	0 FT/SEC	10 FT/SEC	20 FT/SEC	30 FT/SEC	40 FT/SEC	50 FT/SEC	60 FT/SEC	70 FT/SEC	80 FT/SEC	90 FT/SEC	100 FT/SEC	110 FT/SEC
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.26	.26	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
4	.11	.11	.23	.27	.28	.29	.30	.30	.30	.30	.30	.30
5	.16	.16	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
6	.20	.20	.28	.29	.30	.30	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

**** THERE WERE 1 WARNING MESSAGES IN DATA.

1

INITIALIZATION STATISTICS

TIME INTERVAL NUMBER	SUBNETWORK TYPE	PRIOR CONTENT (VEHICLES)	CURRENT CONTENT (VEHICLES)	PERCENT DIFFERENCE
1	NETSIM	0	42	10000
2	NETSIM	42	93	121
3	NETSIM	93	122	31

INITIALIZATION TIME EXHAUSTED, SIMULATION WILL BE PERFORMED ANYWAY
CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

1

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

LINK	VEHICLE MILES TRIPS	VEHICLE MINUTES			RATIO	MINUTES/MILE	----- SECONDS / VEHICLE -----			----- AVERAGE VALUES -----		
		MOVE TIME	DELAY TIME	TOTAL MOVE/ TIME			TOTAL TIME	DELAY TIME	TOTAL TIME	DELAY TIME	CONTROL TIME	QUEUE DELAY	STOP* TIME	STOPS (%)	VOL MPH

		CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0																	
(	1, 2)	78.72	1004	157.4	182.6	340.0	.46	4.32	2.32	20.5	11.1	9.4	8.6	8.3	23	1004	13.9	
(	2, 1)	135.41	1727	270.8	242.4	513.2	.53	3.79	1.79	17.8	8.5	6.1	5.2	4.9	24	1727	15.8	
(	3, 2)	99.74	1738	199.5	225.7	425.2	.47	4.26	2.26	14.6	7.8	6.3	5.6	5.3	21	1738	14.1	
(	2, 3)	52.51	915	105.0	39.7	144.7	.73	2.76	.76	9.5	2.6	1.7	1.7	1.6	6	915	21.8	
(	4, 3)	134.91	1738	269.8	68.9	338.7	.80	2.51	.51	11.7	2.4	.6	.5	.5	2	1738	23.9	
(	3, 4)	71.28	918	142.6	82.3	224.8	.63	3.15	1.15	14.7	5.4	3.1	1.0	.8	25	918	19.0	
(	5, 4)	136.43	1706	272.9	409.6	682.5	.40	5.00	3.00	24.0	14.4	11.1	8.8	8.2	49	1706	12.0	
(	4, 5)	73.66	947	147.3	44.6	191.9	.77	2.61	.61	12.1	2.8	.5	.2	.0	0	947	23.0	
(8009,	8)		398														398		
(8008,	9)		1290														1290		
(	9, 7)	156.85	1284	313.7	327.9	641.6	.49	4.09	2.09	29.9	15.3	11.5	7.6	6.9	49	1284	14.7	
(	7, 9)	84.77	719	169.5	25.6	195.1	.87	2.30	.30	16.2	2.1	.0	.0	.0	0	719	26.1	
(8010,	10)		50														50		
(	10, 5)	3.64	51	7.3	1.5	8.8	.83	2.41	.41	10.3	1.8	1.2	1.0	1.0	25	51	24.9	
(8013,	11)		50														50		
(	11, 4)	3.80	52	7.6	19.0	26.6	.29	6.99	4.99	30.7	21.9	19.0	18.4	18.2	65	52	8.6	
(8002,	12)		50														50		
(	12, 3)	4.29	51	8.6	14.2	22.8	.38	5.30	3.30	26.8	16.7	15.2	14.6	14.5	70	51	11.3	
(	3, 12)	3.32	41	6.6	.7	7.3	.91	2.20	.20	10.7	1.0	.0	.0	.0	0	41	27.2	
(8003,	13)		50														50		
(	13, 2)	4.12	52	8.2	18.4	26.6	.31	6.47	4.47	30.8	21.3	18.5	18.0	17.7	69	52	9.3	
(	2, 13)	14.43	184	28.9	5.5	34.4	.84	2.38	.38	11.2	1.8	.0	.0	.0	0	184	25.2	
(8004,	14)		183														183		
(	14, 1)	12.96	184	25.9	61.2	87.2	.30	6.72	4.72	28.2	19.8	16.9	15.9	15.4	78	184	8.9	
(	1, 14)	11.41	162	22.8	5.0	27.9	.82	2.44	.44	10.3	1.9	.0	.0	.0	0	162	24.6	
(8005,	15)		21														21		
(	15, 1)	1.18	21	2.4	7.2	9.5	.25	8.10	6.10	26.0	19.6	18.7	17.8	17.8	76	21	7.4	
(	1, 15)	2.98	54	6.0	1.3	7.3	.82	2.45	.45	8.1	1.5	.0	.1	.0	0	54	24.5	
(8006,	16)		83														83		
(	16, 2)	2.55	84	5.1	29.9	35.0	.15	13.74	11.74	24.7	21.1	19.7	19.4	19.2	71	84	4.4	
(	2, 16)	.84	30	1.7	.6	2.3	.73	2.73	.73	4.6	1.2	.0	.1	.0	0	30	22.0	
(	17, 1)	59.06	1155	118.1	289.1	407.2	.29	6.89	4.89	21.1	15.0	13.3	11.9	11.3	48	1155	8.7	
(	1, 17)	95.32	1864	190.6	32.7	223.4	.85	2.34	.34	7.2	1.1	.0	.0	.0	0	1864	25.6	
(8001,	17)		1159														1159		
(8007,	6)		10														10		
(	6, 7)	.60	9	1.2	1.2	2.4	.49	4.07	2.07	14.7	7.4	6.7	6.0	6.0	44	9	14.8	
(	7, 6)	1.54	24	3.1	.4	3.5	.88	2.27	.27	8.5	1.0	.0	.0	.0	0	24	26.5	
(	18, 7)	74.51	969	149.0	263.0	412.0	.36	5.53	3.53	25.3	16.1	12.5	9.6	8.9	27	969	10.8	
(	7, 18)	129.18	1680	258.4	126.3	384.6	.67	2.98	.98	13.7	4.5	1.8	.0	.0	0	1680	20.2	
(	19, 18)	126.95	980	253.9	65.7	319.6	.79	2.52	.52	19.5	4.0	.7	.0	.0	0	980	23.8	
(	18, 19)	217.38	1678	434.8	277.3	712.1	.61	3.28	1.28	25.4	9.9	7.8	6.2	5.7	34	1678	18.3	
(	19, 5)	430.15	1670	860.3	258.4	1118.7	.77	2.60	.60	39.9	9.2	3.4	.1	.0	2	1670	23.1	
(	5, 19)	252.68	981	505.4	205.0	710.4	.71	2.81	.81	43.4	12.5	9.4	7.5	6.9	45	981	21.3	
(8011,	20)		45														45		
(	20, 19)	5.29	47	10.6	25.8	36.4	.29	6.88	4.88	46.4	32.9	30.1	29.2	28.9	72	47	8.7	

* AVERAGE QUEUE AND STOP TIME ARE COMPUTED AS TOTAL QUEUE TIME OR TOTAL STOP TIME DIVIDED BY TOTAL NUMBER OF VEHICLES DISCHARGED FROM LINK PLUS NUMBER OF VEHICLES CURRENTLY ON THE LINK.

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS). TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

LINK	VEHICLE		VEHICLE MINUTES			RATIO	MINUTES/MILE		SECONDS / VEHICLE					AVERAGE VALUES		
	MILES	TRIPS	MOVE TIME	DELAY TIME	TOTAL TIME	MOVE/ TOTAL	TOTAL TIME	DELAY TIME	TOTAL TIME	DELAY TIME	CONTROL DELAY	QUEUE DELAY	STOP* TIME	STOPS (%)	VPH	MPH
(19, 20)	4.56	41	9.1	1.0	10.1	.90	2.22	.22	14.8	1.5	.0	.0	.0	0	41	27.0
(7, 21)	17.94	284	35.9	6.2	42.0	.85	2.34	.34	8.9	1.3	.0	.0	.0	0	284	25.6
(21, 8)	16.59	279	33.2	1.5	34.7	.96	2.09	.09	7.5	.3	.0	.0	.0	0	279	28.7
(8, 21)	23.67	398	45.7	.0	45.7	1.00	1.93	.00	6.9	.0	.0	.0	.0	0	398	31.1
(21, 7)	28.40	449	56.8	262.2	319.0	.18	11.23	9.23	42.4	34.9	32.9	30.9	30.1	75	449	5.3
(8012, 22)		50													50	
(22, 21)	3.62	51	7.2	1.5	8.8	.83	2.42	.42	10.3	1.8	.6	.2	.1	5	51	24.8
(21, 22)	.53	8	1.1	.1	1.2	.90	2.22	.22	8.9	.9	.0	.0	.0	0	8	27.0
0SUBNETWORK=	2577.79	3406	85.90	60.52	146.42	.59	3.41	1.41	2.48	1.02	.73	.56	.53	160.8		17.6
-- VEHICLE - HOURS --									--- MINUTES / VEHICLE-TRIP ---					PER TRIP		

1 CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

(10, 5)	.9	.9	.3	1.6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
(11, 4)	15.9	15.8	.8	4.0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
(12, 3)	12.4	12.3	.7	3.2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
(3, 12)	.0	.0	.2	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(13, 2)	15.6	15.4	.8	3.7	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
(2, 13)	.1	.0	.8	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(14, 1)	49.4	48.0	2.1	11.2	0	1	0	0	0	0	0	0	5	0	0	0	0	0	0
(1, 14)	.1	.0	.7	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(15, 1)	6.5	6.5	.3	2.1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
(1, 15)	.1	.0	.2	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16, 2)	27.5	27.2	.9	11.9	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
(2, 16)	.0	.0	.1	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(17, 1)	229.6	217.9	7.1	26.3	3	1	3	0	0	0	0	0	9	12	0	0	0	0	0
(1, 17)	.6	.0	4.1	15.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(6, 7)	1.0	1.0	.1	.2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
(7, 6)	.0	.0	.1	.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 7)	158.0	146.3	7.3	18.1	0	0	3	0	0	0	0	0	11	11	0	0	0	0	0
(7, 18)	.3	.0	6.8	16.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(19, 18)	.3	.0	5.8	8.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 19)	173.3	159.0	12.4	18.1	0	2	2	0	0	0	0	0	11	12	0	0	0	0	0
(19, 5)	1.9	1.3	19.1	14.1	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0
(5, 19)	123.1	112.9	12.3	9.0	0	1	1	0	0	0	0	0	9	9	0	0	0	0	0
(20, 19)	22.9	22.6	1.1	3.6	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0

1 CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

NUMBER	VEH-MINS *	AVERAGE	-- CONGESTION --	-----	QUEUE LENGTH (VEHICLE)	-----
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* THESE VALUES INCLUDE THE TIME FOR VEHICLES CURRENTLY ON THE LINK.
** AVERAGE QUEUE CALCULATED BASED ON TIME SINCE BEGINNING OF SIMULATION

1

CUMULATIVE NETSIM STATISTICS AT TIME 9:0:0

ELAPSED TIME IS 1:0:0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

DISCHARGE BY LANE

(13, 2)	52	52	0	0	0	0	0	0	0	0	0	0	0
(2, 13)	184	184	0	0	0	0	0	0	0	0	0	0	0
(14, 1)	184	184	0	0	0	0	0	0	0	0	0	0	0
(1, 14)	162	162	0	0	0	0	0	0	0	0	0	0	0
(15, 1)	21	21	0	0	0	0	0	0	0	0	0	0	0
(1, 15)	54	54	0	0	0	0	0	0	0	0	0	0	0
(16, 2)	84	84	0	0	0	0	0	0	0	0	0	0	0
(2, 16)	30	30	0	0	0	0	0	0	0	0	0	0	0
(17, 1)	836	836	319	319	0	0	0	0	0	0	0	0	0
(1, 17)	1076	1076	788	788	0	0	0	0	0	0	0	0	0
(6, 7)	6	6	3	3	0	0	0	0	0	0	0	0	0
(7, 6)	12	12	12	12	0	0	0	0	0	0	0	0	0
(18, 7)	702	702	267	267	0	0	0	0	0	0	0	0	0
(7, 18)	883	883	797	797	0	0	0	0	0	0	0	0	0
(19, 18)	600	600	380	380	0	0	0	0	0	0	0	0	0
(18, 19)	946	946	732	732	0	0	0	0	0	0	0	0	0
(19, 5)	1081	1081	589	589	0	0	0	0	0	0	0	0	0
(5, 19)	452	452	529	529	0	0	0	0	0	0	0	0	0
(20, 19)	47	47	0	0	0	0	0	0	0	0	0	0	0
(19, 20)	41	41	0	0	0	0	0	0	0	0	0	0	0
(7, 21)	85	85	199	199	0	0	0	0	0	0	0	0	0
(21, 8)	94	94	185	185	0	0	0	0	0	0	0	0	0
(8, 21)	369	369	29	29	0	0	0	0	0	0	0	0	0
(21, 7)	268	268	181	181	0	0	0	0	0	0	0	0	0
(22, 21)	51	51	0	0	0	0	0	0	0	0	0	0	0
(21, 22)	8	8	0	0	0	0	0	0	0	0	0	0	0

1

NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(1, 2)	102.3	1305.2	237.3	442.0
(2, 1)	176.0	2245.1	315.1	667.2
(3, 2)	129.7	2259.4	293.4	552.7
(2, 3)	68.3	1189.5	51.6	188.2
(4, 3)	175.4	2259.4	89.5	440.3
(3, 4)	92.7	1193.4	106.9	292.3
(5, 4)	177.4	2217.8	532.5	887.2
(4, 5)	95.8	1231.1	57.9	249.5
(9, 7)	203.9	1669.2	426.3	834.1
(7, 9)	110.2	934.7	33.2	253.6
(10, 5)	4.7	66.3	2.0	11.4
(11, 4)	4.9	67.6	24.7	34.5
(12, 3)	5.6	66.3	18.4	29.6
(3, 12)	4.3	53.3	.9	9.5
(13, 2)	5.4	67.6	23.9	34.6
(2, 13)	18.8	239.2	7.2	44.7
(14, 1)	16.9	239.2	79.6	113.3
(1, 14)	14.8	210.6	6.6	36.2

(15, 1)	1.5	27.3	9.3	12.4
(1, 15)	3.9	70.2	1.7	9.5
(16, 2)	3.3	109.2	38.8	45.5
(2, 16)	1.1	39.0	.8	3.0
(17, 1)	76.8	1501.5	375.8	529.4
(1, 17)	123.9	2423.2	42.5	290.4
(6, 7)	.8	11.7	1.6	3.2
(7, 6)	2.0	31.2	.5	4.5
(18, 7)	96.9	1259.7	341.9	535.7
(7, 18)	167.9	2184.0	164.2	500.0
(19, 18)	165.0	1274.0	85.4	415.5
(18, 19)	282.6	2181.4	360.5	925.7
(19, 5)	559.2	2171.0	335.9	1454.3
(5, 19)	328.5	1275.3	266.5	923.5

1

NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(20, 19)	6.9	61.1	33.6	47.3
(19, 20)	5.9	53.3	1.3	13.2
(7, 21)	23.3	369.2	8.0	54.6
(21, 8)	21.6	362.7	2.0	45.1
(8, 21)	30.8	517.4	.0	59.4
(21, 7)	36.9	583.7	340.8	414.7
(22, 21)	4.7	66.3	2.0	11.4
(21, 22)	.7	10.4	.2	1.5

1 *** NOTE *** TIME PERIOD 1 SPECIFIC NETSIM STATISTICS ARE THE SAME AS CUMULATIVE OUTPUT AT THE END OF TIME PERIOD 1.

1

NETSIM CUMULATIVE VALUES OF FUEL CONSUMPTION

VEHICLE TYPE-	FUEL CONSUMPTION												
	GALLONS				M.P.G.								
5	1	2	6	7	8	4	5	1	2	6	7	8	4
(7, 9)	2.65	3.89	.00	.00	.00	.00	8.30	15.04	.00	.00	.00	.00	.00
(3, 12)	.12	.21	.00	.00	.00	.00	6.08	11.36	.00	.00	.00	.00	.00
(19, 20)	.10	.24	.00	.00	.00	.00	8.40	14.54	.00	.00	.00	.00	.00
(2, 13)	.65	.81	.00	.00	.00	.00	6.09	11.67	.00	.00	.00	.00	.00
(1, 14)	.49	.76	.00	.00	.00	.00	5.77	10.47	.00	.00	.00	.00	.00
(21, 8)	.18	.41	.00	.00	.00	.00	20.23	31.80	.00	.00	.00	.00	.00
(1, 15)	.14	.25	.00	.00	.00	.00	4.33	8.33	.00	.00	.00	.00	.00
(2, 16)	.06	.08	.00	.00	.00	.00	4.44	6.43	.00	.00	.00	.00	.00
(1, 17)	2.91	4.86	.00	.00	.00	.00	8.30	14.46	.00	.00	.00	.00	.00
(21, 22)	.01	.04	.00	.00	.00	.00	7.44	10.18	.00	.00	.00	.00	.00
(7, 6)	.10	.08	.00	.00	.00	.00	5.34	12.45	.00	.00	.00	.00	.00
(5, 19)	5.03	9.17	.00	.00	.00	.00	12.34	20.20	.00	.00	.00	.00	.00
(2, 1)	3.08	5.94	.00	.00	.00	.00	11.33	17.05	.00	.00	.00	.00	.00

(3, 2)	2.04	4.07	.00	.00	.00	.00	12.50	18.21	.00	.00	.00	.00	.00
(2, 3)	1.21	2.10	.00	.00	.00	.00	10.81	18.72	.00	.00	.00	.00	.00
(13, 2)	.09	.28	.00	.00	.00	.00	9.30	10.95	.00	.00	.00	.00	.00
(1, 2)	2.29	4.22	.00	.00	.00	.00	8.75	13.88	.00	.00	.00	.00	.00
(7, 21)	.59	1.18	.00	.00	.00	.00	6.55	11.89	.00	.00	.00	.00	.00
(14, 1)	.45	1.04	.00	.00	.00	.00	6.22	9.20	.00	.00	.00	.00	.00
(4, 3)	4.53	7.00	.00	.00	.00	.00	7.31	13.45	.00	.00	.00	.00	.00
(15, 1)	.04	.08	.00	.00	.00	.00	7.13	10.67	.00	.00	.00	.00	.00
(16, 2)	.15	.31	.00	.00	.00	.00	3.92	5.43	.00	.00	.00	.00	.00
(17, 1)	2.69	5.54	.00	.00	.00	.00	5.35	7.53	.00	.00	.00	.00	.00
(18, 19)	7.14	11.89	.00	.00	.00	.00	7.34	12.75	.00	.00	.00	.00	.00
(21, 7)	1.21	2.37	.00	.00	.00	.00	7.03	8.18	.00	.00	.00	.00	.00
(8, 21)	.61	.78	.00	.00	.00	.00	11.22	19.68	.00	.00	.00	.00	.00
(22, 21)	.07	.11	.00	.00	.00	.00	14.32	21.97	.00	.00	.00	.00	.00
(18, 7)	2.53	5.26	.00	.00	.00	.00	7.16	10.01	.00	.00	.00	.00	.00
(4, 5)	2.56	4.38	.00	.00	.00	.00	6.63	11.69	.00	.00	.00	.00	.00
(5, 4)	5.69	10.26	.00	.00	.00	.00	5.68	9.03	.00	.00	.00	.00	.00
(10, 5)	.09	.11	.00	.00	.00	.00	12.14	20.56	.00	.00	.00	.00	.00
(11, 4)	.10	.27	.00	.00	.00	.00	9.34	9.87	.00	.00	.00	.00	.00
(7, 18)	4.18	7.07	.00	.00	.00	.00	7.74	13.06	.00	.00	.00	.00	.00
(9, 7)	3.72	7.64	.00	.00	.00	.00	10.00	15.12	.00	.00	.00	.00	.00
(6, 7)	.02	.02	.00	.00	.00	.00	8.72	19.91	.00	.00	.00	.00	.00
(19, 18)	2.43	4.28	.00	.00	.00	.00	13.24	22.21	.00	.00	.00	.00	.00
(19, 5)	6.00	11.19	.00	.00	.00	.00	18.34	28.66	.00	.00	.00	.00	.00
(3, 4)	.98	2.00	.00	.00	.00	.00	18.19	26.55	.00	.00	.00	.00	.00
(12, 3)	.12	.23	.00	.00	.00	.00	9.10	13.33	.00	.00	.00	.00	.00
(20, 19)	.08	.34	.00	.00	.00	.00	9.37	12.39	.00	.00	.00	.00	.00
SUBNETWORK-	67.10	120.75	.00	.00	.00	.00	9.55	15.46	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK	VEHICLE EMISSIONS (GRAMS/ MILE)					
		5	1	2	6	7	8
(7, 9)		.30	.35	.00	.00	.00	.00
(3, 12)		.46	.56	.00	.00	.00	.00
(19, 20)		.27	.36	.00	.00	.00	.00
(2, 13)		.42	.47	.00	.00	.00	.00
(1, 14)		.44	.54	.00	.00	.00	.00
(21, 8)		.03	.04	.00	.00	.00	.00
(1, 15)		.67	.81	.00	.00	.00	.00
(2, 16)		.62	1.06	.00	.00	.00	.00
(1, 17)		.27	.32	.00	.00	.00	.00
(21, 22)		.30	.63	.00	.00	.00	.00
(7, 6)		.54	.47	.00	.00	.00	.00
(5, 19)		.13	.15	.00	.00	.00	.00
(2, 1)		.12	.14	.00	.00	.00	.00
(3, 2)		.08	.08	.00	.00	.00	.00
(2, 3)		.17	.17	.00	.00	.00	.00
(13, 2)		.24	.30	.00	.00	.00	.00
(1, 2)		.19	.24	.00	.00	.00	.00
(7, 21)		.40	.48	.00	.00	.00	.00

(14, 1)	.34	.44	.00	.00	.00	.00	.00
(4, 3)	.33	.38	.00	.00	.00	.00	.00
(15, 1)	.29	.28	.00	.00	.00	.00	.00
(16, 2)	.51	.57	.00	.00	.00	.00	.00
(17, 1)	.39	.57	.00	.00	.00	.00	.00
(18, 19)	.33	.37	.00	.00	.00	.00	.00
(21, 7)	.13	.17	.00	.00	.00	.00	.00
(8, 21)	.26	.29	.00	.00	.00	.00	.00
(22, 21)	.20	.24	.00	.00	.00	.00	.00
(18, 7)	.26	.36	.00	.00	.00	.00	.00
(4, 5)	.41	.51	.00	.00	.00	.00	.00
(5, 4)	.41	.50	.00	.00	.00	.00	.00
(10, 5)	.22	.25	.00	.00	.00	.00	.00
(11, 4)	.24	.34	.00	.00	.00	.00	.00
(7, 18)	.30	.39	.00	.00	.00	.00	.00
(9, 7)	.18	.20	.00	.00	.00	.00	.00
(6, 7)	.24	.28	.00	.00	.00	.00	.00
(19, 18)	.12	.14	.00	.00	.00	.00	.00
(19, 5)	.04	.05	.00	.00	.00	.00	.00
(3, 4)	.04	.05	.00	.00	.00	.00	.00
(12, 3)	.26	.25	.00	.00	.00	.00	.00
(20, 19)	.15	.20	.00	.00	.00	.00	.00
SUBNETWORK-	.20	.24	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

LINK VEHICLE TYPE-	VEHICLE EMISSIONS (GRAMS/ MILE) CO						
	5	1	2	6	7	8	4
(7, 9)	18.73	27.31	.00	.00	.00	.00	.00
(3, 12)	30.04	45.42	.00	.00	.00	.00	.00
(19, 20)	17.46	29.02	.00	.00	.00	.00	.00
(2, 13)	26.98	36.56	.00	.00	.00	.00	.00
(1, 14)	27.36	41.45	.00	.00	.00	.00	.00
(21, 8)	2.78	3.30	.00	.00	.00	.00	.00
(1, 15)	42.25	64.88	.00	.00	.00	.00	.00
(2, 16)	33.49	79.11	.00	.00	.00	.00	.00
(1, 17)	17.71	25.26	.00	.00	.00	.00	.00
(21, 22)	16.89	50.43	.00	.00	.00	.00	.00
(7, 6)	35.30	38.19	.00	.00	.00	.00	.00
(5, 19)	8.65	12.20	.00	.00	.00	.00	.00
(2, 1)	7.29	9.97	.00	.00	.00	.00	.00
(3, 2)	5.33	5.98	.00	.00	.00	.00	.00
(2, 3)	11.28	13.24	.00	.00	.00	.00	.00
(13, 2)	19.77	24.98	.00	.00	.00	.00	.00
(1, 2)	12.15	17.68	.00	.00	.00	.00	.00
(7, 21)	25.88	37.40	.00	.00	.00	.00	.00
(14, 1)	24.42	35.45	.00	.00	.00	.00	.00
(4, 3)	20.91	29.82	.00	.00	.00	.00	.00
(15, 1)	26.75	25.04	.00	.00	.00	.00	.00
(16, 2)	42.14	49.58	.00	.00	.00	.00	.00
(17, 1)	25.72	44.18	.00	.00	.00	.00	.00

(18, 19)	20.45	27.93	.00	.00	.00	.00	.00
(21, 7)	7.70	11.64	.00	.00	.00	.00	.00
(8, 21)	23.19	26.23	.00	.00	.00	.00	.00
(22, 21)	17.65	20.91	.00	.00	.00	.00	.00
(18, 7)	15.25	26.73	.00	.00	.00	.00	.00
(4, 5)	24.74	39.83	.00	.00	.00	.00	.00
(5, 4)	23.97	36.25	.00	.00	.00	.00	.00
(10, 5)	18.54	22.57	.00	.00	.00	.00	.00
(11, 4)	20.57	27.43	.00	.00	.00	.00	.00
(7, 18)	18.99	30.60	.00	.00	.00	.00	.00
(9, 7)	12.64	15.73	.00	.00	.00	.00	.00
(6, 7)	19.79	24.49	.00	.00	.00	.00	.00
(19, 18)	7.61	10.52	.00	.00	.00	.00	.00
(19, 5)	3.03	4.14	.00	.00	.00	.00	.00
(3, 4)	2.96	3.94	.00	.00	.00	.00	.00
(12, 3)	20.16	21.40	.00	.00	.00	.00	.00
(20, 19)	12.21	17.69	.00	.00	.00	.00	.00
SUBNETWORK-	12.94	18.57	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK	VEHICLE EMISSIONS (GRAMS/ MILE)					
		5	1	2	6	7	8
(7, 9)		1.47	1.09	.00	.00	.00	.00
(3, 12)		2.27	1.68	.00	.00	.00	.00
(19, 20)		1.45	1.15	.00	.00	.00	.00
(2, 13)		2.25	1.58	.00	.00	.00	.00
(1, 14)		2.39	1.83	.00	.00	.00	.00
(21, 8)		.19	.18	.00	.00	.00	.00
(1, 15)		3.39	2.49	.00	.00	.00	.00
(2, 16)		3.43	3.41	.00	.00	.00	.00
(1, 17)		1.41	1.19	.00	.00	.00	.00
(21, 22)		1.78	1.95	.00	.00	.00	.00
(7, 6)		2.64	1.48	.00	.00	.00	.00
(5, 19)		.66	.52	.00	.00	.00	.00
(2, 1)		.68	.56	.00	.00	.00	.00
(3, 2)		.44	.37	.00	.00	.00	.00
(2, 3)		.88	.66	.00	.00	.00	.00
(13, 2)		.84	.88	.00	.00	.00	.00
(1, 2)		1.04	.86	.00	.00	.00	.00
(7, 21)		2.06	1.60	.00	.00	.00	.00
(14, 1)		1.66	1.36	.00	.00	.00	.00
(4, 3)		1.78	1.27	.00	.00	.00	.00
(15, 1)		.83	.66	.00	.00	.00	.00
(16, 2)		2.02	1.68	.00	.00	.00	.00
(17, 1)		2.07	1.90	.00	.00	.00	.00
(18, 19)		1.61	1.18	.00	.00	.00	.00
(21, 7)		.68	.70	.00	.00	.00	.00
(8, 21)		.84	.75	.00	.00	.00	.00
(22, 21)		.58	.59	.00	.00	.00	.00
(18, 7)		1.43	1.27	.00	.00	.00	.00

(4, 5)	2.07	1.57	.00	.00	.00	.00
(5, 4)	2.12	1.66	.00	.00	.00	.00
(10, 5)	.74	.64	.00	.00	.00	.00
(11, 4)	.87	.98	.00	.00	.00	.00
(7, 18)	1.65	1.28	.00	.00	.00	.00
(9, 7)	.81	.71	.00	.00	.00	.00
(6, 7)	.70	.66	.00	.00	.00	.00
(19, 18)	.64	.50	.00	.00	.00	.00
(19, 5)	.22	.17	.00	.00	.00	.00
(3, 4)	.23	.18	.00	.00	.00	.00
(12, 3)	.98	.70	.00	.00	.00	.00
(20, 19)	.60	.55	.00	.00	.00	.00
SUBNETWORK-	1.04	.81	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

THE HIGHEST NUMBER OF VEHICLES ON THE NETWORK WAS 175 VEHICLES (MAXIMUM ALLOWED IS 20000).
THIS MAXIMUM OCCURRED AT 2618 SECONDS.

THE FRACTION OF VEHICLES THAT WERE UNABLE TO COMPLETE THEIR ASSIGNED TURN MOVEMENT WAS .00305

NETWORK-WIDE AVERAGE STATISTICS

TOTAL VEHICLE- MILE = 2677.79 VEHICLE-HOURS OF: MOVE TIME = 85.90 , DELAY TIME = 60.52 , TOTAL TIME = 146.42

Appendix III

Worst Case Scenario

INPUT FILE NAME: C:\TSIS Projects\Marina\New-S3.trf
RUN DATE : 04/10/04

VERSION 5.0
RELEASE DATE MAY 2001

TRAFFIC SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

1 CARD FILE LIST
0SEQ.# : -----+---1---+---2---+---3---+---4---+---5---+---6---+---7---+---8
1 :Created by TSIS Sat Apr 10 18:27:20 2004 from TNO Version 52 0
2 : 3 192004 0 1
3 : 1 0 3 7981 0000 0 3 800 7781 7581 2
4 : 3600 3
5 : 60 4

CARD FILE LIST (CONT.)

51 :	20	19	594	1	010	5	18	20	18	30	10	11
52 :	19	20	594	1	010	8011		20	18	30	0	11
53 :	7	21	334	2	0100	8	22	20	18	30	0	11
54 :	21	8	314	2	0100	8009		20	18	30	0	11


```

104 : 17 1 1 2 2 1 14
105 : 17 1 1 2 1 1 14
106 : 17 1 1 15 1 1 14
107 : 17 1 1 14 2 1 14
108 : 6 7 7 18 1 1 14
109 : 6 7 7 9 1 1 14
110 : 18 7 7 9 1 1 14
111 : 18 7 7 6 2 1 14
112 : 7 18 18 19 1 1 14
113 : 7 18 18 19 2 1 14
114 : 19 18 18 7 2 1 14
115 : 19 18 18 7 1 1 14
116 : 18 19 19 5 1 1 14
117 : 18 19 19 5 2 1 14
118 : 19 5 5 4 1 1 14
119 : 19 5 5 4 2 1 14
120 : 5 19 19 18 2 1 14
121 : 5 19 19 18 1 1 14
122 : 20 19 19 18 1 11 14
123 : 20 19 19 5 1 11 14
124 : 7 21 21 8 1 1 14
125 : 7 21 21 8 2 1 14
126 : 7 21 21 22 1 1 14
127 : 8 21 21 7 2 1 14
128 : 8 21 21 7 1 1 14
129 : 22 21 21 8 1 1 14
130 : 22 21 21 7 1 1 14
131 : 1 2 15 84 1 0 21
132 : 2 1 2 98 0 0 21
133 : 3 2 0 98 2 0 21
134 : 2 3 2 98 0 0 21
135 : 4 3 0 98 2 0 21
136 : 3 4 0 0 100 0 21
137 : 5 4 100 0 0 0 21
138 : 4 5 100 0 0 0 21
139 : 8009 8 100 21
140 : 8008 9 100 21
141 : 9 7 98 1 1 0 21
142 : 7 9 100 21
143 : 8010 10 100 21
144 : 10 5 50 50 0 0 21
145 : 8013 11 100 21
146 : 11 4 0 40 60 0 21
147 : 8002 12 100 21
148 : 12 3 40 0 60 0 21
149 : 3 12 100 21
150 : 8003 13 100 21
0SEQ.# : -----+---1-----+---2-----+---3-----+---4-----+---5-----+---6-----+---7-----+---8-----+-----+
1 CARD FILE LIST (CONT.)
0SEQ.# : -----+---1-----+---2-----+---3-----+---4-----+---5-----+---6-----+---7-----+---8-----+
151 : 13 2 32 22 46 0 21
152 : 2 13 100 21

```

153 : 8004	14	100						21				
154 :	14	1	8	6	86	0		21				
155 :	1	14			100			21				
156 : 8005	15				100			21				
157 :	15	1	19	28	53	0		21				
158 :	1	15			100			21				
159 : 8006	16				100			21				
160 :	16	2	25	25	50	0		21				
161 :	2	16			100			21				
162 :	17	1	15	84	1	0		21				
163 :	1	17			100			21				
164 : 8001	17				100			21				
165 : 8007	6				100			21				
166 :	6	7	33	33	33	0		21				
167 :	7	6			100			21				
168 :	18	7	0	27	73	0		21				
169 :	7	18	0	0	100	0		21				
170 :	19	18	100	0	0	0		21				
171 :	18	19	7	93	0	0		21				
172 :	19	5	0	0	100	0		21				
173 :	5	19	0	93	7	0		21				
174 : 8011	20				100			21				
175 :	20	19	50	0	50	0		21				
176 :	19	20			100			21				
177 :	7	21	0	99	1	0		21				
178 :	21	8			100			21				
179 :	8	21	0	100	0	0		21				
180 :	21	7	4	93	3	0		21				
181 : 8012	22				100			21				
182 :	22	21	98	0	2	0		21				
183 :	21	22			100			21				
184 :	1	0	14	17	15	2	80	26	3	1	35	
185 :	2	5	13	1	16	3	80	26	3	1	35	
186 :	3	10	12	2	4		80	26	3	1	35	
187 :	4	15	11	3	5		80	26	3	1	35	
188 :	5		4	10	19						35	
189 :	7	0	21	6	18	9	80	30			35	
190 :	8		8009	21							35	
191 :	9		8008	7							35	
192 :	10		8010								35	
193 :	11		8013								35	
194 :	12		8002	3							35	
195 :	13		8003	2							35	
196 :	14		8004	1							35	
197 :	15		8005	1							35	
198 :	16		8006	2							35	
199 :	17			18001							35	
200 :	6		8007	7							35	
0SEQ.#	-----1-----2-----3-----4-----5-----6-----7-----8											
1	CARD FILE LIST (CONT.)											
0SEQ.#	-----1-----2-----3-----4-----5-----6-----7-----8											
201 :	18		7	19							35	

202 :	19	18	5	20	35	
203 :	20	8011	19		35	
204 :	21	7	8	22	35	
205 :	22	8012	21		35	
206 :	1	2121	1212	0202	2222	36
207 :	2	2121	1212	0202	2222	36
208 :	3	211	122	022	222	36
209 :	4	211	122	022	222	36
210 :	5	111				36
211 :	7	2131	1212			36
212 :	8	11				36
213 :	9	11				36
214 :	10	1				36
215 :	11	1				36
216 :	12	11				36
217 :	13	11				36
218 :	14	11				36
219 :	15	11				36
220 :	16	11				36
221 :	17	11				36
222 :	6	11				36
223 :	18	11				36
224 :	19	111				36
225 :	20	11				36
226 :	21	111				36
227 :	22	11				36
228 :8008	91346	0	0	100	50	
229 :8009	8 415	0	0	100	50	
230 :8010	10 53	0	0	100	50	
231 :8013	11 53	0	0	100	50	
232 :8002	12 53	0	0	100	50	
233 :8003	13 53	0	0	100	50	
234 :8004	14 191	0	0	100	50	
235 :8005	15 22	0	0	100	50	
236 :8006	16 85	0	0	100	50	
237 :8001	171211	0	0	100	50	
238 :8007	6 10	0	0	100	50	
239 :8011	20 48	0	0	100	50	
240 :8012	22 53	0	0	100	50	
241 :	0				170	
242 :8008	856	4745			195	
243 :8009	24	3849			195	
244 :8010	1720	1081			195	
245 :8013	656	1553			195	
246 :8002	668	1085			195	
247 :8003	712	629			195	
248 :8004	796	377			195	
249 :8005	1712	397			195	
250 :8006	1486	871			195	

0SEQ.# :-----1-----2-----3-----4-----5-----6-----7-----8

1 CARD FILE LIST (CONT.)

0SEQ.# :-----1-----2-----3-----4-----5-----6-----7-----8

251 : 8001	1340	24	195
252 : 8007	797	3388	195
253 : 8011	2203	3056	195
254 : 8012	487	4431	195
255 : 1	1304	389	195
256 : 2	1264	801	195
257 : 3	1220	1101	195
258 : 4	1200	1511	195
259 : 5	1576	1725	195
260 : 7	832	3845	195
261 : 8	184	3849	195
262 : 9	872	4489	195
263 : 10	1640	1353	195
264 : 11	816	1553	195
265 : 12	776	1089	195
266 : 13	864	681	195
267 : 14	932	377	195
268 : 15	1600	401	195
269 : 16	1416	851	195
270 : 17	1330	120	195
271 : 6	797	3496	195
272 : 18	1224	3738	195
273 : 19	1356	3067	195
274 : 20	1950	3056	195
275 : 21	498	3848	195
276 : 22	476	4222	195
277 : 1	0	0	210

0SEQ.# :-----+---1-----+---2-----+---3-----+---4-----+---5-----+---6-----+---7-----+---8

TRAF SIMULATION MODEL

DEVELOPED FOR

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

FHWA OFFICE OF OPERATIONS RESEARCH, DEVELOPMENT AND TECHNOLOGY

0
0
Created by TSIS Sat Apr 10 18:27:20 2004 from TNO Version 520
0
DATE = 3/19/2004
USER =
AGENCY =

RUN CONTROL DATA

VALUE RUN PARAMETERS AND OPTIONS

0
0
0 RUN IDENTIFICATION NUMBER
1 RUN TYPE CODE = (1, 2, 3) TO RUN (SIMULATION, ASSIGNMENT, BOTH)
(-1,-2,-3) TO CHECK (SIMULATION, ASSIGNMENT, BOTH) ONLY

0 NETSIM ENVIRONMENTAL OPTIONS

0 -----

0 FUEL/EMISSION RATE TABLES ARE NOT PRINTED

0 SIMULATION: PERFORMED ENVIRONMENTAL MEASURES: CALCULATED

0 RATE TABLES: EMBEDDED TRAJECTORY FILE: NOT WRITTEN

0 CODE = (0,1,2) FOR UNIFORM DISTRIBUTION, NORMAL DISTRIBUTION, ERLANG DISTRIBUTION

0 INPUT UNITS CODE = (0,1) IF INPUT IS IN (ENGLISH, METRIC) UNITS

0 OUTPUT UNITS CODE = (0,1,2,3) IF OUTPUT IS IN (SAME AS INPUT, ENGLISH, METRIC, BOTH) UNITS

0 800 CLOCK TIME AT START OF SIMULATION (HHMM)

0 0 SIGNAL TRANSITION CODE = (0,1,2,3) IF(0, IMMEDIATE, 2-CYCLE, 3-CYCLE) TRANSITION WAS REQUESTED

0 7581 RANDOM NUMBER SEED

0 7781 RANDOM NUMBER SEED TO GENERATE TRAFFIC STREAM FOR NETSIM OR LEVEL I SIMULATION

7981 RANDOM NUMBER SEED TO GENERATE EMISSION HEADWAYS FOR NETSIM SIMULATION

3600 DURATION (SEC) OF TIME PERIOD NO. 1

0 60 LENGTH OF A TIME INTERVAL, SECONDS

0 3 MAXIMUM INITIALIZATION TIME, NUMBER OF TIME INTERVALS

0 0 NUMBER OF TIME INTERVALS BETWEEN SUCCESSIVE STANDARD OUTPUTS

0 0 TIME INTERMEDIATE OUTPUT WILL BEGIN AT INTERVALS OF 0 SECS. FOR 0 SECS. FOR MICROSCOPIC MODELS

0 0 NETSIM MOVEMENT-SPECIFIC OUTPUT CODE = (0,1) (IF NOT, IF) REQUESTED FOR NETSIM SUBNETWORK

0 0 NETSIM GRAPHICS OUTPUT CODE = (0,1) IF GRAPHICS OUTPUT (IS NOT, IS) REQUESTED

1*****

TIME PERIOD 1 - NETSIM DATA

1*****

1

NETSIM LINKS

LINK	LENGTH FT / M	-LANES-				-CHANNEL-				DESTINATION NODE	OPP. NODE	TIME SEC	Q DIS SEC	FREE SPEED MPH/KMPH	RTOR CODE	PED CODE	LANE ALIGN -MENT	STREET NAME		
		F L	P L	G R	E D	C R	U B234567	U LEFT	U THRU										U RGHT	U DIAG
		U LINK	U TYPE	U R	U PCT	U TYPE	U B234567	U LEFT	U THRU										U RGHT	U DIAG
(1, 2)	414/ 126	2 0 0 0 1	0000000	13 3 16 0 3	2.0	1.8	30/ 48	0 0	1-1*											
(2, 1)	414/ 126	2 0 0 0 1	0000000	15 17 14 0 17	2.0	1.8	30/ 48	0 0	1-1*											
(3, 2)	303/ 92	2 0 0 0 1	0000000	16 1 13 0 1	2.0	1.8	30/ 48	0 0	1-1*											
(2, 3)	303/ 92	2 0 0 0 1	0000000	12 4 0 0 4	2.0	1.8	30/ 48	0 0	1-1*											
(4, 3)	410/ 125	2 0 0 0 1	0000000	0 2 12 0 0	2.0	1.8	30/ 48	0 0	1-1*											
(3, 4)	410/ 125	2 0 0 0 1	4400000	0 0 5 0 0	2.0	1.8	30/ 48	0 0	1-1*											
(5, 4)	433/ 132	2 0 0 0 1	1100000	3 0 0 0 11	2.0	1.8	30/ 48	0 0	1-1*											
(4, 5)	433/ 132	2 0 0 0 1	1100000	19 0 0 0 0	2.0	1.8	30/ 48	0 0	1-1*											
(8009, 8)	0/ 0	2 0 0 0 1	0000000	0 21 0 0 0	2.0	1.8	0/ 0	0 0	1-1*											
(8008, 9)	0/ 0	2 0 0 0 1	0000000	0 7 0 0 0	2.0	1.8	0/ 0	0 0	1-1*											
(9, 7)	645/ 197	1 0 0 0 1	0000000	18 6 21 0 6	2.0	1.8	30/ 48	0 0	1-1*											
(7, 9)	645/ 197	1 0 0 0 1	0000000	0 8008 0 0 0	2.0	1.8	30/ 48	0 0	1-1*											
(8010, 10)	0/ 0	2 0 0 0 1	0000000	0 5 0 0 0	2.0	1.8	0/ 0	0 0	1-1*											
(10, 5)	377/ 115	1 0 0 0 1	0000000	4 19 0 0 19	2.0	1.8	30/ 48	0 0	1-1*											
(8013, 11)	0/ 0	2 0 0 0 1	0000000	0 4 0 0 0	2.0	1.8	0/ 0	0 0	1-1*											
(11, 4)	386/ 118	1 0 0 0 1	0000000	0 5 3 0 0	2.0	1.8	30/ 48	0 0	1-1*											

(8002, 12)	0/ 0 2 0 0 0 1	0000000	0 3 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(12, 3)	444/ 135 1 0 0 0 1	0000000	4 0 2 0 0 2.0 1.8 30/ 48 0 0 1-1*
(3, 12)	444/ 135 1 0 0 0 1	0000000	0 8002 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8003, 13)	0/ 0 2 0 0 0 1	0000000	0 2 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(13, 2)	418/ 127 1 0 0 0 1	0000000	3 16 1 0 0 16 2.0 1.8 30/ 48 0 0 1-1*
(2, 13)	418/ 127 1 0 0 0 1	0000000	0 8003 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8004, 14)	0/ 0 2 0 0 0 1	0000000	0 1 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(14, 1)	372/ 113 1 0 0 0 1	0000000	2 15 17 0 15 2.0 1.8 30/ 48 0 0 1-1*
(1, 14)	372/ 113 1 0 0 0 1	0000000	0 8004 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8005, 15)	0/ 0 2 0 0 0 1	0000000	0 1 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(15, 1)	296/ 90 1 0 0 0 1	0000000	17 14 2 0 14 2.0 1.8 30/ 48 0 0 1-1*
(1, 15)	296/ 90 1 0 0 0 1	0000000	0 8005 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8006, 16)	0/ 0 2 0 0 0 1	0000000	0 2 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(16, 2)	160/ 49 1 0 0 0 1	0000000	1 13 3 0 13 2.0 1.8 30/ 48 0 0 1-1*
(2, 16)	160/ 49 1 0 0 0 1	0000000	0 8006 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(17, 1)	270/ 82 2 0 0 0 1	0000000	14 2 15 0 2 2.0 1.8 30/ 48 0 0 1-1*
(1, 17)	270/ 82 2 0 0 0 1	0000000	0 8001 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8001, 17)	0/ 0 2 0 0 0 1	0000000	0 1 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(8007, 6)	0/ 0 2 0 0 0 1	0000000	0 7 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(6, 7)	351/ 107 2 0 0 0 1	0000000	21 9 18 0 9 2.0 1.8 30/ 48 0 0 1-1*
(7, 6)	351/ 107 2 0 0 0 1	0000000	0 8007 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(18, 7)	406/ 124 2 0 0 0 1	4000000	6 21 9 0 21 2.0 1.8 30/ 48 0 0 1-1*
(7, 18)	406/ 124 2 0 0 0 1	4400000	0 0 19 0 0 2.0 1.8 30/ 48 0 0 1-1*
(19, 18)	684/ 208 2 0 0 0 1	1100000	7 0 0 0 0 2.0 1.8 30/ 48 0 0 1-1*
(18, 19)	684/ 208 2 0 0 0 1	0000000	20 5 0 0 5 2.0 1.8 30/ 48 0 0 1-1*
(19, 5)	1360/ 415 2 0 0 0 1	4400000	0 0 4 0 0 2.0 1.8 30/ 48 0 0 1-1*
(5, 19)	1360/ 415 2 0 0 0 1	0000000	0 18 20 0 0 2.0 1.8 30/ 48 0 0 1-1*
(8011, 20)	0/ 0 2 0 0 0 1	0000000	0 19 0 0 0 2.0 1.8 0/ 0 0 0 1-1*
(20, 19)	594/ 181 1 0 0 0 1	0000000	5 0 18 0 0 2.0 1.8 30/ 48 1 0 1-1*

1

NETSIM LINKS (CONT.)

LINK	-LANES-					-CHANNEL-					DESTINATION NODE	OPP. NODE	TIME SEC	HDWY. SEC	FREE SPEED MPH/KMPH	RTOR CODE	PED CODE	LANE ALIGN -MENT	STREET NAME
	F		C																
	U	U	R	B234567	LEFT	THRU	RGHT	DIAG											
LENGTH FT / M	L L	PKT L	GRD R	LINK PCT	TYPE														
(19, 20)	594/ 181	1 0 0 0 0 1	0000000	0 8011	0 0 0 0 0 2.0 1.8 30/ 48 0 0 1-1*														
(7, 21)	334/ 102	2 0 0 0 0 1	0000000	0 8 22	0 0 0 0 0 2.0 1.8 30/ 48 0 0 1-1*														
(21, 8)	314/ 96	2 0 0 0 0 1	0000000	0 8009	0 0 0 0 0 2.0 1.8 30/ 48 0 0 1-1*														
(8, 21)	314/ 96	2 0 0 0 0 1	0000000	22 7 0 0 0 2.0 1.8 30/ 48 0 0 1-1*															
(21, 7)	334/ 102	2 0 0 0 0 1	0000000	9 18 6 0 18 2.0 1.8 30/ 48 1 0 1-1*															
(8012, 22)	0/ 0 2 0 0 0 1	0000000	0 21 0 0 0 2.0 1.8 0/ 0 0 0 1-1*																
(22, 21)	375/ 114	1 0 0 0 0 1	0000000	7 0 8 0 0 2.0 1.8 30/ 48 1 0 1-1*															
(21, 22)	375/ 114	1 0 0 0 0 1	0000000	0 8012 0 0 0 2.0 1.8 30/ 48 0 0 1-1*															

* INDICATES DEFAULT VALUES WERE SPECIFIED

LINK TYPE

LANE CHANNELIZATION

RTOR

PEDESTRIAN

	CODES	CODES	CODES
IDENTIFIES THE DISTRIBUTION USED FOR QUEUE DISCHARGE AND START-UP LOST TIME CHARACTERISTICS.	0 UNRESTRICTED 1 LEFT TURNS ONLY 2 BUSES ONLY 3 CLOSED 4 RIGHT TURNS ONLY 5 CAR - POOLS 6 CAR - POOLS + BUSES 7 RIGHT TURNS + RIGHT DIAGONAL AND/OR THROUGH 8 LEFT TURNS + LEFT DIAGONAL AND/OR THROUGH 9 ALL PERMITTED MOVEMENTS WITH RESPECT TO THE GEOMETRY AND ADJACENT LANE CHANNELIZATIONS D DIAGONAL TRAFFIC ONLY T THROUGH TRAFFIC ONLY	0 RTOR PERMITTED 1 RTOR PROHIBITED	0 NO PEDESTRIANS 1 LIGHT 2 MODERATE 3 HEAVY

TOTAL LINKS: 53 (ALLOWED: 1000)
 TOTAL NON-ENTRY NODES: 22 (ALLOWED: 500)

OPTIONAL NETSIM LANE ALIGNMENTS

LINK	RECEIVING LINK	LANE	ALIGNED LANES ON RECEIVING LINK
(1, 2)	(2, 3)	2	2
(1, 2)	(2, 3)	1	1
(1, 2)	(2, 16)	1	1
(1, 2)	(2, 13)	2	1
(2, 1)	(1, 14)	1	1
(2, 1)	(1, 17)	1	1
(2, 1)	(1, 17)	2	2
(2, 1)	(1, 15)	2	1
(3, 2)	(2, 13)	1	1
(3, 2)	(2, 1)	1	1
(3, 2)	(2, 1)	2	2
(3, 2)	(2, 16)	2	1
(2, 3)	(3, 4)	2	2
(2, 3)	(3, 4)	1	1
(2, 3)	(3, 12)	2	1

(4, 3)	(3, 12)	1	1
(4, 3)	(3, 2)	1	1
(4, 3)	(3, 2)	2	2
(3, 4)	(4, 5)	1	1
(3, 4)	(4, 5)	2	2
(5, 4)	(4, 3)	1	1
(5, 4)	(4, 3)	2	2
(4, 5)	(5, 19)	2	2
(4, 5)	(5, 19)	1	1
(9, 7)	(7, 18)	1	2
(9, 7)	(7, 6)	1	2
(10, 5)	(5, 19)	1	1 2
(10, 5)	(5, 4)	1	1 2
(11, 4)	(4, 5)	1	1 2
(11, 4)	(4, 3)	1	1 2
(12, 3)	(3, 4)	1	2
(12, 3)	(3, 2)	1	1
(13, 2)	(2, 16)	1	1
(13, 2)	(2, 3)	1	2
(13, 2)	(2, 1)	1	1
(14, 1)	(1, 2)	1	2
(14, 1)	(1, 17)	1	1
(14, 1)	(1, 15)	1	1
(15, 1)	(1, 14)	1	1
(15, 1)	(1, 2)	1	1
(15, 1)	(1, 17)	1	2
(16, 2)	(2, 13)	1	1

(16, 2)	(2, 3)	1	1
(16, 2)	(2, 1)	1	2
(17, 1)	(1, 2)	2	2
(17, 1)	(1, 2)	1	1
(17, 1)	(1, 15)	1	1
(17, 1)	(1, 14)	2	1
(6, 7)	(7, 18)	1	1
(6, 7)	(7, 9)	1	1
(18, 7)	(7, 9)	1	1
(18, 7)	(7, 6)	2	2
(7, 18)	(18, 19)	1	1
(7, 18)	(18, 19)	2	2
(19, 18)	(18, 7)	2	2
(19, 18)	(18, 7)	1	1
(18, 19)	(19, 5)	1	1
(18, 19)	(19, 5)	2	2
(19, 5)	(5, 4)	1	1
(19, 5)	(5, 4)	2	2
(5, 19)	(19, 18)	2	2
(5, 19)	(19, 18)	1	1
(20, 19)	(19, 18)	1	1 2
(20, 19)	(19, 5)	1	1 2
(7, 21)	(21, 8)	1	1
(7, 21)	(21, 8)	2	2
(7, 21)	(21, 22)	1	1
(8, 21)	(21, 7)	2	2
(8, 21)	(21, 7)	1	1

(22, 21) (21, 8) 1 1

(22, 21) (21, 7) 1 2

***** WARNING - 500 - Link (19,5) may not have been specified correctly on Record Type 11. Its traffic opposes traffic on link (10,5), but no receiving link (5,10) was input. Check Record Type 11.

1

NETSIM TURNING MOVEMENT DATA

LINK	TURN MOVEMENT PERCENTAGES				TURN MOVEMENT POSSIBLE				POCKET LENGTH (IN FEET/METERS)		
	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	THROUGH	RIGHT	DIAGONAL	LEFT	RIGHT	
(1, 2)	15	84	1	0	YES	YES	YES	NO	0/	0	0/ 0
(2, 1)	2	98	0	0	YES	YES	YES	NO	0/	0	0/ 0
(3, 2)	0	98	2	0	YES	YES	YES	NO	0/	0	0/ 0
(2, 3)	2	98	0	0	YES	YES	NO	NO	0/	0	0/ 0
(4, 3)	0	98	2	0	NO	YES	YES	NO	0/	0	0/ 0
(3, 4)	0	0	100	0	NO	NO	YES	NO	0/	0	0/ 0
(5, 4)	100	0	0	0	YES	NO	NO	NO	0/	0	0/ 0
(4, 5)	100	0	0	0	YES	NO	NO	NO	0/	0	0/ 0
(8009, 8)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8008, 9)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(9, 7)	98	1	1	0	YES	YES	YES	NO	0/	0	0/ 0
(7, 9)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8010, 10)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(10, 5)	50	50	0	0	YES	YES	NO	NO	0/	0	0/ 0
(8013, 11)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(11, 4)	0	40	60	0	NO	YES	YES	NO	0/	0	0/ 0
(8002, 12)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(12, 3)	40	0	60	0	YES	NO	YES	NO	0/	0	0/ 0
(3, 12)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8003, 13)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(13, 2)	32	22	46	0	YES	YES	YES	NO	0/	0	0/ 0
(2, 13)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8004, 14)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(14, 1)	8	6	86	0	YES	YES	YES	NO	0/	0	0/ 0
(1, 14)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8005, 15)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(15, 1)	19	28	53	0	YES	YES	YES	NO	0/	0	0/ 0
(1, 15)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8006, 16)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(16, 2)	25	25	50	0	YES	YES	YES	NO	0/	0	0/ 0
(2, 16)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(17, 1)	15	84	1	0	YES	YES	YES	NO	0/	0	0/ 0
(1, 17)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8001, 17)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(8007, 6)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(6, 7)	34	33	33	0	YES	YES	YES	NO	0/	0	0/ 0
(7, 6)	0	100	0	0	NO	YES	NO	NO	0/	0	0/ 0
(18, 7)	0	27	73	0	YES	YES	YES	NO	0/	0	0/ 0
(7, 18)	0	0	100	0	NO	NO	YES	NO	0/	0	0/ 0
(19, 18)	100	0	0	0	YES	NO	NO	NO	0/	0	0/ 0

(18, 19)	7	93	0	0	YES	YES	NO	NO	0/	0	0/	0
(19, 5)	0	0	100	0	NO	NO	YES	NO	0/	0	0/	0
(5, 19)	0	93	7	0	NO	YES	YES	NO	0/	0	0/	0
(8011, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(20, 19)	50	0	50	0	YES	NO	YES	NO	0/	0	0/	0
(19, 20)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(7, 21)	0	99	1	0	NO	YES	YES	NO	0/	0	0/	0
(21, 8)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(8, 21)	0	100	0	0	YES	YES	NO	NO	0/	0	0/	0
(21, 7)	4	93	3	0	YES	YES	YES	NO	0/	0	0/	0
(8012, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0
(22, 21)	98	0	2	0	YES	NO	YES	NO	0/	0	0/	0
(21, 22)	0	100	0	0	NO	YES	NO	NO	0/	0	0/	0

1 SPECIFIED FIXED-TIME SIGNAL CONTROL, AND SIGN CONTROL, CODES

0 NODE 1

0 CYCLE LENGTH 110 SEC

INTERVAL NUMBER	OFFSET 0 SEC		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(14, 1)	(17, 1)	(15, 1)		( 2, 1)
1	80	72	2	1	2	1
2	26	23	1	2	1	2
3	3	2	0	2	0	2
4	1	0	2	2	2	2

0 NODE 2

0 CYCLE LENGTH 110 SEC

INTERVAL NUMBER	OFFSET 5 SEC		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(13, 2)	(1, 2)	(16, 2)		( 3, 2)
1	80	72	2	1	2	1
2	26	23	1	2	1	2
3	3	2	0	2	0	2
4	1	0	2	2	2	2

0 NODE 3

0 CYCLE LENGTH 110 SEC

INTERVAL NUMBER	OFFSET 10 SEC		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(12, 3)	(2, 3)	(4, 3)	
1	80	72	2	1	1	
2	26	23	1	2	2	
3	3	2	0	2	2	
4	1	0	2	2	2	

0 NODE 4

0 CYCLE LENGTH 110 SEC

INTERVAL NUMBER	OFFSET 15 SEC		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(11, 4)	(3, 4)	(5, 4)	
1	80	72	2	1	1	
2	26	23	1	2	2	
3	3	2	0	2	2	
4	1	0	2	2	2	

0 NODE 5 IS UNDER SIGN CONTROL

INTERVAL NUMBER	DURATION		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(4, 5)	(10, 5)	(19, 5)	
1	0	100	1	1	1	

0 NODE 6 IS UNDER SIGN CONTROL

INTERVAL NUMBER	DURATION		APPROACHES			CYCLE LENGTH 110 SEC
	DURATION (SEC)	DURATION (PCT)	(8007, 6)	(7, 6)	(1, 6)	
1	0	100	1	1	1	

		OFFSET	0 SEC	NODE	7	CYCLE LENGTH 110 SEC	
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(21, 7)	(6, 7)	(18, 7)	(9, 7)
1	80	72		2	1	3	1
2	30	27		1	2	1	2
NODE 8 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8009, 8)	(21, 8)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 9 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8008, 9)	(7, 9)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 10 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8010, 10)	APPROACHES	- - - - -	
1	0	100		1			
NODE 11 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8013, 11)	APPROACHES	- - - - -	
1	0	100		1			
NODE 12 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8002, 12)	(3, 12)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 13 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8003, 13)	(2, 13)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 14 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8004, 14)	(1, 14)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 15 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8005, 15)	(1, 15)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 16 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(8006, 16)	(2, 16)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 17 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(1, 17)	(8001, 17)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 18 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	(7, 18)	(19, 18)	APPROACHES	- - - - -
1	0	100		1	1		
NODE 19 IS UNDER SIGN CONTROL							
INTERVAL NUMBER	DURATION (SEC)	(PCT)	+ - - - -	APPROACHES	- - - - -		

	NUMBER	(SEC)	(PCT)	(18, 19)	(5, 19)	(20, 19)	
0	1	0	100	1	1	1	
0	INTERVAL	DURATION		NODE 20	IS UNDER SIGN CONTROL	APPROACHES	- - - - +
0	NUMBER	(SEC)	(PCT)	(8011, 20)	(19, 20)		
0	1	0	100	1	1		
0	INTERVAL	DURATION		NODE 21	IS UNDER SIGN CONTROL	APPROACHES	- - - - +
0	NUMBER	(SEC)	(PCT)	(7, 21)	(8, 21)	(22, 21)	
0	1	0	100	1	1	1	
0	INTERVAL	DURATION		NODE 22	IS UNDER SIGN CONTROL	APPROACHES	- - - - +
0	NUMBER	(SEC)	(PCT)	(8012, 22)	(21, 22)		
1	1	0	100	1	1		

INTERPRETATION OF SIGNAL CODES

- 0 YIELD OR AMBER
- 1 GREEN
- 2 RED
- 3 RED WITH GREEN RIGHT ARROW
- 4 RED WITH GREEN LEFT ARROW
- 5 STOP
- 6 RED WITH GREEN DIAGONAL ARROW
- 7 NO TURNS-GREEN THRU ARROW
- 8 RED WITH LEFT AND RIGHT GREEN ARROW
- 9 NO LEFT TURN-GREEN THRU AND RIGHT

TRAFFIC CONTROL TABLE - SIGNS AND FIXED TIME SIGNALS

CONTROL CODES GO = PROTECTED
 NOGO = NOT PERMITTED
 AMBR = AMBER
 PERM = PERMITTED NOT PROTECTED
 PROT = PROTECTED
 STOP = STOP SIGN
 YLD = YIELD SIGN

NODE	1	FIXED TIME CONTROL		OFFSET = 0 SECONDS	CYCLE LENGTH = 110 SECONDS	
INTERVAL DURATION		APPROACHES				
		(14, 1)	(17, 1)	(15, 1)	(2, 1)	
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG			
		NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	

2	26	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
3	3	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO
4	1	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO

NODE 2 FIXED TIME CONTROL OFFSET = 5 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION		APPROACHES			
		(13, 2)	(1, 2)	(16, 2)	(3, 2)
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO	PERM GO GO
3	3	PERM GO GO	NOGO NOGO NOGO	PERM GO GO	NOGO NOGO NOGO
4	1	AMBR AMBR AMBR	NOGO NOGO NOGO	AMBR AMBR AMBR	NOGO NOGO NOGO
		NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO	NOGO NOGO NOGO

NODE 3 FIXED TIME CONTROL OFFSET = 10 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION		APPROACHES			
		(12, 3)	(2, 3)	(4, 3)	
1	80	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG	LEFT THRU RITE DIAG
2	26	NOGO NOGO	PERM GO	GO GO	
3	3	PROT GO	NOGO NOGO	NOGO NOGO	
4	1	AMBR AMBR	NOGO NOGO	NOGO NOGO	
		NOGO NOGO	NOGO NOGO	NOGO NOGO	

NODE 4 FIXED TIME CONTROL OFFSET = 15 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION		APPROACHES			
		(11, 4)	(3, 4)	(5, 4)	
1	80	LEFT THRU RITE DIAG			
2	26	NOGO NOGO	GO	PROT	
3	3	GO GO	NOGO	NOGO	
4	1	AMBR AMBR	NOGO	NOGO	
1		NOGO NOGO	NOGO	NOGO	

NODE 5 SIGN CONTROL

INTERVAL DURATION		APPROACHES			
		(4, 5)	(10, 5)	(19, 5)	
1	0	LEFT THRU RITE DIAG			
		PROT	PERM GO	GO	

NODE 6 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8007, 6) (7, 6)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 7 FIXED TIME CONTROL OFFSET = 0 SECONDS CYCLE LENGTH = 110 SECONDS

INTERVAL DURATION ----- APPROACHES -----
 (21, 7) (6, 7) (18, 7) (9, 7)
 LEFT THRU RITE DIAG
 1 80 NOGO NOGO NOGO PERM GO GO NOGO NOGO GO PERM GO GO NOGO NOGO NOGO
 2 30 PERM GO GO NOGO NOGO NOGO PERM GO GO NOGO NOGO NOGO

NODE 8 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8009, 8) (21, 8)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 9 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8008, 9) (7, 9)
 LEFT THRU RITE DIAG
 1 0 GO GO

NODE 10 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8010, 10)
 LEFT THRU RITE DIAG
 1 0 GO

NODE 11 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8013, 11)
 LEFT THRU RITE DIAG
 1 0 GO

NODE 12	SIGN CONTROL
INTERVAL DURATION	
----- APPROACHES -----	
(8002, 12) (3, 12)	
LEFT THRU RITE DIAG	
1	0
GO GO	
INTERVAL DURATION	
----- APPROACHES -----	
(8003, 13) (2, 13)	
LEFT THRU RITE DIAG	
1	0
GO GO	
INTERVAL DURATION	
----- APPROACHES -----	
(8004, 14) (1, 14)	
LEFT THRU RITE DIAG	
1	0
GO GO	
INTERVAL DURATION	
----- APPROACHES -----	
(8005, 15) (1, 15)	
LEFT THRU RITE DIAG	
1	0
GO GO	
INTERVAL DURATION	
----- APPROACHES -----	
(8006, 16) (2, 16)	
LEFT THRU RITE DIAG	
1	0
GO GO	
INTERVAL DURATION	
----- APPROACHES -----	
(1, 17) (8001, 17)	
LEFT THRU RITE DIAG	
1	0
GO GO	

NODE 18 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (7, 18) (19, 18)
 1 0 LEFT THRU RITE DIAG
 GO PROT

NODE 19 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (18, 19) (5, 19) (20, 19)
 1 0 LEFT THRU RITE DIAG
 PERM GO GO PROT GO

NODE 20 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8011, 20) (19, 20)
 1 0 LEFT THRU RITE DIAG
 GO GO

NODE 21 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (7, 21) (8, 21) (22, 21)
 1 0 LEFT THRU RITE DIAG
 GO GO PERM GO PROT GO

NODE 22 SIGN CONTROL

INTERVAL DURATION ----- APPROACHES -----
 (8012, 22) (21, 22)
 1 0 LEFT THRU RITE DIAG
 GO GO

ENTRY LINK VOLUMES

LINK	FLOW RATE (VEH/HOUR)	TRUCKS (PERCENT)	CAR POOLS (PERCENT)	HOV VIOLATORS (PERCENT)
(8008, 9)	1346	0	0	1.00
(8009, 8)	415	0	0	1.00
(8010, 10)	53	0	0	1.00
(8013, 11)	53	0	0	1.00

(8002, 12)	53	0	0	1.00
(8003, 13)	53	0	0	1.00
(8004, 14)	191	0	0	1.00
(8005, 15)	22	0	0	1.00
(8006, 16)	85	0	0	1.00
(8001, 17)	1211	0	0	1.00
(8007, 6)	10	0	0	1.00
(8011, 20)	48	0	0	1.00
(8012, 22)	53	0	0	1.00

NETSIM VEHICLE TYPE SPECIFICATIONS

VEHICLE TYPE	LENGTH FEET/METERS	Q DSCHG HDWY FACTOR (PCT)	FLEET AVG. OCCUP.	COMPONENT AUTO	PERCENTAGES TRUCK	CARPOOL	BUS	PERF. INDEX
1**	16.0/ 4.9	100	1.3	75	0	0	0	2
2**	35.0/ 10.7	120	1.2	0	100	0	0	3
3**	16.0/ 4.9	100	2.5	0	0	100	0	2
4**	40.0/ 12.2	120	25.0	0	0	0	100	7
5**	14.0/ 4.3	100	1.3	25	0	0	0	1
6**	53.0/ 16.2	120	1.2	0	0	0	0	4
7**	53.0/ 16.2	120	1.2	0	0	0	0	5
8**	64.0/ 19.5	120	1.2	0	0	0	0	6
9**	14.0/ 4.3	100	2.5	0	0	0	0	1

** INDICATES THAT ALL PARAMETERS FOR VEHICLE TYPE ASSUME DEFAULT VALUES

1

DEFAULT LINK GEOMETRIC DATA

WIDTH OF LANES 12 FEET

LONGITUDINAL DISTANCE FROM THE STOP 4 FEET
LINE TO THE NEAR CURB

FORWARD SIGHT DISTANCE AT STOP LINE 1000 FEET

1

LANE CHANGE DATA

PARAMETERS	VALUE ENGLISH / METRIC	UNITS
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DURATION OF LANE CHANGE MANEUVER	3*	SECONDS
MEAN DRIVER REACTION TIME	10*	TENTHS OF A SECOND
TIME REQUIRED FOR SUCCESSIVE LANE CHANGES	20*	TENTHS OF A SECOND
DECCELERATION AT BEGINNING OF LANE CHANGE MANEUVER	5* / 2	FEET [METERS] / SECOND**2
DIFFERENCE IN VEHICLE'S DECELERATION OVER THE DISTANCE BETWEEN ITS POSITION WHEN IT BEGINS TO RESPOND TO AN		

OBSTRUCTION AND THE POSITION OF THE OBSTRUCTION -

FOR MANDATORY LANE CHANGE:	10*	/	3	FEET [METERS] / SECOND**2
FOR DISCRETIONARY LANE CHANGE:	5*	/	2	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF LEAD VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/	4	FEET [METERS] / SECOND**2
PANIC DECELERATION RATE OF FOLLOWER VEHICLE FOR COMPUTATION OF CAR-FOLLOWING LAW	12*	/	4	FEET [METERS] / SECOND**2
DRIVER TYPE FACTOR USED TO COMPUTE DRIVER AGGRESSIVENESS	25*			
URGENCY THRESHOLD	2*	/	1	10 * SECONDS**2 / FEET [METERS]
SAFETY FACTOR FOR COMPUTATION OF PERCEIVED RISK OF LANE CHANGE	8*			FACTOR * 10
PERCENT OF DRIVERS WHO COOPERATE WITH A LANE CHANGER	50*			%
HEADWAY BELOW WHICH ALL DRIVERS WILL ATTEMPT TO CHANGE LANES	20*			TENTHS OF A SECOND
HEADWAY ABOVE WHICH NO DRIVERS WILL ATTEMPT TO CHANGE LANES	50*			TENTHS OF A SECOND
FORWARD DISTANCE SCANNED BY DRIVER FOR A TURN MOVEMENT / BUS STATION IN ORDER TO ASSESS NEED FOR A LANE CHANGE	300*	/	91	FEET / [METERS]

* INDICATES DEFAULT VALUES WERE SPECIFIED

MAXIMUM ACCELERATION TABLE

Performance Index	0	10	20	30	40	50	60	70	80	90	100	110
	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec
1	8.00	9.00	6.00	5.00	5.00	4.00	3.00	2.00	2.00	1.00	1.00	1.00
2	6.00	12.00	10.00	8.00	7.00	6.00	4.00	4.00	4.00	2.00	2.00	2.00
3	4.69	5.35	4.94	3.47	3.09	2.61	2.14	1.70	1.27	.86	.46	.06
4	2.81	2.42	2.15	2.04	1.74	1.42	1.12	.83	.56	.30	.04	-.23
5	2.76	2.37	1.81	1.56	1.25	.97	.73	.52	.32	.14	-.05	-.23
6	2.45	2.14	1.42	1.12	.85	.63	.44	.29	.14	.00	-.14	-.27
7	7.47	5.33	3.17	2.66	2.29	1.65	1.40	.95	.75	.50	-.33	-.35

GRADE CORRECTION FACTORS FOR ACCELERATION (USED BY FRESIM ONLY)

2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.21	.21	.21	.22	.23	.25	.26	.27	.28	.28	.30	.31
4	.16	.15	.19	.22	.24	.25	.27	.28	.29	.31	.31	.31
5	.18	.17	.20	.23	.25	.27	.28	.30	.31	.31	.31	.31
6	.18	.18	.22	.25	.27	.29	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

GRADE CORRECTION FACTORS FOR FUEL CONSUMPTION (USED BY FRESIM ONLY)

Performance Index	0	10	20	30	40	50	60	70	80	90	100	110
	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec	ft/sec
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
2	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
3	.26	.26	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
4	.11	.11	.23	.27	.28	.29	.30	.30	.30	.30	.30	.30
5	.16	.16	.26	.28	.29	.30	.30	.30	.30	.30	.30	.30
6	.20	.20	.28	.29	.30	.30	.30	.30	.31	.31	.31	.31
7	.27	.27	.27	.27	.27	.29	.29	.30	.30	.30	.30	.30

***** THERE WERE 1 WARNING MESSAGES IN DATA.

1

INITIALIZATION STATISTICS

TIME INTERVAL NUMBER	SUBNETWORK TYPE	PRIOR CONTENT (VEHICLES)	CURRENT CONTENT (VEHICLES)	PERCENT DIFFERENCE
1	NETSIM	0	42	10000
2	NETSIM	42	95	126
3	NETSIM	95	125	31

INITIALIZATION TIME EXHAUSTED, SIMULATION WILL BE PERFORMED ANYWAY
CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

1

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

(10, 5)	3.78	53	7.6	1.4	9.0	.84	2.38	.38	10.0	1.6	1.1	.9	.9	20	53	25.2
(8013, 11)		53													53	
(11, 4)	3.95	54	7.9	19.8	27.7	.29	7.02	5.02	30.2	21.6	19.1	18.4	18.2	75	54	8.6
(8002, 12)		53													53	
(12, 3)	4.46	53	8.9	18.2	27.1	.33	6.08	4.08	30.1	20.2	18.6	18.0	17.7	71	53	9.9
(3, 12)	2.99	37	6.0	.6	6.6	.91	2.20	.20	10.6	1.0	.0	.0	.0	0	37	27.2
(8003, 13)		53													53	
(13, 2)	4.28	54	8.6	21.7	30.2	.28	7.07	5.07	33.0	23.6	21.2	20.6	20.5	72	54	8.5
(2, 13)	15.61	199	31.2	5.6	36.8	.85	2.36	.36	11.1	1.7	.0	.0	.0	0	199	25.4
(8004, 14)		191													191	
(14, 1)	13.46	191	26.9	65.4	92.3	.29	6.86	4.86	28.9	20.5	17.7	16.5	16.0	79	191	8.8
(1, 14)	11.70	166	23.4	4.9	28.3	.83	2.42	.42	10.1	1.8	.0	.0	.0	0	166	24.8
(8005, 15)		22													22	
(15, 1)	1.23	22	2.5	6.9	9.4	.26	7.64	5.64	24.6	18.1	17.0	16.5	16.5	77	22	7.9
(1, 15)	3.09	56	6.2	1.5	7.6	.81	2.47	.47	8.2	1.6	.0	.0	.0	0	56	24.3
(8006, 16)		84													84	
(16, 2)	2.55	84	5.1	30.0	35.1	.15	13.79	11.79	24.8	21.2	20.1	19.8	19.5	71	84	4.4
(2, 16)	.81	29	1.6	.6	2.2	.73	2.73	.73	4.6	1.2	.0	.0	.0	0	29	22.0
(17, 1)	62.03	1213	124.1	326.3	450.4	.28	7.26	5.26	22.2	16.1	14.2	12.7	12.0	47	1213	8.3
(1, 17)	94.91	1856	189.8	32.1	221.9	.86	2.34	.34	7.2	1.0	.0	.0	.0	0	1856	25.7
(8001, 17)		1210													1210	
(8007, 6)		10													10	
(6, 7)	.60	9	1.2	1.3	2.5	.49	4.09	2.09	14.8	7.5	6.9	6.4	6.3	44	9	14.7
(7, 6)	1.74	27	3.5	.5	4.0	.87	2.30	.30	8.9	1.1	.0	.0	.0	0	27	26.1
(18, 7)	75.51	982	151.0	277.2	428.3	.35	5.67	3.67	26.1	16.9	14.2	11.7	11.3	25	982	10.6
(7, 18)	134.64	1751	269.3	133.0	402.2	.67	2.99	.99	13.7	4.5	1.9	.0	.0	0	1751	20.1
(19, 18)	127.86	987	255.7	48.2	303.9	.84	2.38	.38	18.5	2.9	.6	.0	.0	0	987	25.2
(18, 19)	227.22	1754	454.4	82.6	537.0	.85	2.36	.36	18.3	2.8	1.2	.9	.8	9	1754	25.4
(19, 5)	427.58	1660	855.2	213.7	1068.8	.80	2.50	.50	38.4	7.7	2.9	.1	.0	1	1660	24.0
(5, 19)	264.02	1025	528.0	50.1	578.1	.91	2.19	.19	33.8	2.9	.2	.0	.0	0	1025	27.4
(8011, 20)		47													47	
(20, 19)	5.40	48	10.8	2.3	13.1	.82	2.43	.43	16.4	2.9	1.6	.6	.6	25	48	24.7

* AVERAGE QUEUE AND STOP TIME ARE COMPUTED AS TOTAL QUEUE TIME OR TOTAL STOP TIME DIVIDED BY
TOTAL NUMBER OF VEHICLES DISCHARGED FROM LINK PLUS NUMBER OF VEHICLES CURRENTLY ON THE LINK.

1

CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

LINK	VEHICLE		MINUTES			RATIO	MINUTES/MILE		SECONDS / VEHICLE			AVERAGE VALUES -				
	MILES	TRIPS	MOVE TIME	DELAY TIME	TOTAL TIME		MOVE/ TOTAL	TOTAL TIME	DELAY TIME	TOTAL TIME	DELAY TIME	CONTROL DELAY	QUEUE DELAY	STOP* TIME	STOPS (%)	VPH	MPH
(19, 20)	19.33	174	38.7	4.2	42.8	.90	2.22	.22	14.8	1.4	.0	.0	.0	0	174	27.1
(7, 21)	18.37	291	36.7	6.2	42.9	.86	2.34	.34	8.8	1.3	.0	.0	.0	0	291	25.7
(21, 8)	17.01	286	34.0	1.5	35.5	.96	2.09	.09	7.4	.3	.0	.0	.0	0	286	28.7
(8, 21)	24.56	413	47.6	.0	47.6	1.00	1.94	.00	6.9	.0	.0	.0	.0	0	413	30.9
(21, 7)	29.60	468	59.2	278.1	337.4	.18	11.40	9.40	43.0	35.5	33.4	31.5	30.6	75	468	5.3
(8012, 22)		53													53	
(22, 21)	3.76	53	7.5	1.6	9.1	.83	2.41	.41	10.1	1.7	.6	.2	.1	7	53	24.9

(21, 22) .53 8 1.1 .1 1.2 .90 2.22 .22 8.9 .9 .0 .0 .0 0 8 27.0
 0SUBNETWORK= 2642.56 3565 88.06 53.80 141.86 .62 3.22 1.22 2.30 .87 .61 .47 .44 122.5 18.6
 -- VEHICLE - HOURS -- --- MINUTES / VEHICLE-TRIP --- PER TRIP

1 CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

(15, 1)	6.3	6.3	.3	2.1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
(1, 15)	.0	.0	.2	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16, 2)	28.1	27.6	1.0	12.6	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
(2, 16)	.0	.0	.1	.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(17, 1)	258.3	242.3	7.8	28.9	7	2	3	0	0	0	0	0	10	12	0	0	0	0	0
(1, 17)	.5	.0	4.1	15.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(6, 7)	1.1	1.0	.1	.2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
(7, 6)	.0	.0	.1	.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 7)	193.4	186.6	7.7	18.8	0	0	3	0	0	0	0	0	8	12	0	0	0	0	0
(7, 18)	.3	.0	7.2	17.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(19, 18)	.0	.0	5.6	8.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(18, 19)	26.3	23.9	9.4	13.7	0	0	0	0	0	0	0	0	3	7	0	0	0	0	0
(19, 5)	1.4	1.1	18.3	13.5	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0
(5, 19)	.0	.0	10.0	7.4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
(20, 19)	.5	.5	.4	1.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

1 CUMULATIVE NETSIM STATISTICS AT TIME 9: 0: 0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

NUMBER OF LANE LINK CHANGES	VEH-MINS *		AVERAGE	-- CONGESTION --		QUEUE LENGTH (VEHICLE)													
	QUEUE	STOP	OCCUPANCY	STORAGE (%)	PHASE FAILURE	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	TIME	TIME	(VEHICLE)			-	-	-	-	-	-	-	-	-	-	-	-	-	-
(19, 20)	.0	.0	1.1	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(7, 21)	.1	.0	.9	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(21, 8)	.0	.0	.8	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(8, 21)	.0	.0	1.5	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(21, 7)	248.1	241.1	6.1	18.1	2	2	2	0	0	0	0	0	8	6	0	0	0	0	0

```

( 22, 21) .2 .1 .3 1.5 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
0
( 21, 22) .0 .0 .0 .2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0SUBNETWORK= 1742.9 1651.5 155.2 10.9 9
3834

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* THESE VALUES INCLUDE THE TIME FOR VEHICLES CURRENTLY ON THE LINK.
** AVERAGE QUEUE CALCULATED BASED ON TIME SINCE BEGINNING OF SIMULATION

CUMULATIVE NETSIM STATISTICS AT TIME 9:0:0

ELAPSED TIME IS 1: 0: 0 (3600 SECONDS), TIME PERIOD 1 ELAPSED TIME IS 3600 SECONDS

DISCHARGE BY LANE

(19, 5)	1136	1136	524	524	0	0	0	0	0	0	0	0	0
(5, 19)	523	523	502	502	0	0	0	0	0	0	0	0	0
(20, 19)	48	48	0	0	0	0	0	0	0	0	0	0	0
(19, 20)	174	174	0	0	0	0	0	0	0	0	0	0	0
(7, 21)	85	85	206	206	0	0	0	0	0	0	0	0	0
(21, 8)	96	96	190	190	0	0	0	0	0	0	0	0	0
(8, 21)	366	366	47	47	0	0	0	0	0	0	0	0	0
(21, 7)	284	284	184	184	0	0	0	0	0	0	0	0	0
(22, 21)	53	53	0	0	0	0	0	0	0	0	0	0	0
(21, 22)	8	8	0	0	0	0	0	0	0	0	0	0	0

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NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(1, 2)	108.0	1378.0	197.6	413.7
(2, 1)	175.1	2233.4	362.1	712.3
(3, 2)	127.3	2217.8	158.8	413.4
(2, 3)	71.3	1242.8	54.7	197.3
(4, 3)	172.5	2221.7	193.4	538.3
(3, 4)	97.3	1253.2	98.8	293.4
(5, 4)	175.2	2191.8	409.9	760.4
(4, 5)	100.2	1288.3	60.1	260.5
(9, 7)	213.6	1748.5	504.7	931.9
(7, 9)	111.4	945.1	30.3	253.2
(10, 5)	4.9	68.9	1.9	11.7
(11, 4)	5.1	70.2	25.7	36.0
(12, 3)	5.8	68.9	23.7	35.3
(3, 12)	3.9	48.1	.8	8.6
(13, 2)	5.6	70.2	28.2	39.3
(2, 13)	20.3	258.7	7.3	47.8
(14, 1)	17.5	248.3	85.0	119.9
(1, 14)	15.2	215.8	6.3	36.7
(15, 1)	1.6	28.6	9.0	12.2
(1, 15)	4.0	72.8	1.9	9.9
(16, 2)	3.3	109.2	39.0	45.6
(2, 16)	1.1	37.7	.8	2.9
(17, 1)	80.6	1576.9	424.2	585.5
(1, 17)	123.4	2412.8	41.7	288.5
(6, 7)	.8	11.7	1.6	3.2
(7, 6)	2.3	35.1	.7	5.2
(18, 7)	98.2	1276.6	360.4	556.7
(7, 18)	175.0	2276.3	172.8	522.9
(19, 18)	166.2	1283.1	62.6	395.0
(18, 19)	295.4	2280.2	107.4	698.1
(19, 5)	555.8	2158.0	277.8	1389.5
(5, 19)	343.2	1332.5	65.1	751.5

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NETSIM PERSON MEASURES OF EFFECTIVENESS

LINK	PERSON MILE	PERSON TRIPS	DELAY PERSON-MIN	TRAVEL TIME PERSON-MIN
(20, 19)	7.0	62.4	3.0	17.1
(19, 20)	25.1	226.2	5.4	55.7
(7, 21)	23.9	378.3	8.0	55.8
(21, 8)	22.1	371.8	1.9	46.1
(8, 21)	31.9	536.9	.0	61.9
(21, 7)	38.5	608.4	361.6	438.6
(22, 21)	4.9	68.9	2.0	11.8
(21, 22)	.7	10.4	.2	1.5

1 *** NOTE *** TIME PERIOD 1 SPECIFIC NETSIM STATISTICS ARE THE SAME AS CUMULATIVE OUTPUT AT THE END OF TIME PERIOD 1.

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NETSIM CUMULATIVE VALUES OF FUEL CONSUMPTION

VEHICLE	TYPE-	FUEL CONSUMPTION												M.P.G.	
		5	1	2	6	7	8	4	5	1	2	6	7	8	
(7, 9)	2.69	3.97	.00	.00	.00	.00	.00	.00	8.22	14.99	.00	.00	.00	.00	.00
(3, 12)	.11	.19	.00	.00	.00	.00	.00	.00	6.16	11.24	.00	.00	.00	.00	.00
(19, 20)	.52	1.01	.00	.00	.00	.00	.00	.00	7.88	14.34	.00	.00	.00	.00	.00
(2, 13)	.70	.91	.00	.00	.00	.00	.00	.00	6.21	11.41	.00	.00	.00	.00	.00
(1, 14)	.49	.79	.00	.00	.00	.00	.00	.00	5.74	10.42	.00	.00	.00	.00	.00
(21, 8)	.16	.44	.00	.00	.00	.00	.00	.00	20.89	31.58	.00	.00	.00	.00	.00
(1, 15)	.15	.26	.00	.00	.00	.00	.00	.00	4.53	8.34	.00	.00	.00	.00	.00
(2, 16)	.05	.07	.00	.00	.00	.00	.00	.00	4.52	6.72	.00	.00	.00	.00	.00
(1, 17)	2.73	4.82	.00	.00	.00	.00	.00	.00	8.92	14.56	.00	.00	.00	.00	.00
(21, 22)	.01	.04	.00	.00	.00	.00	.00	.00	7.44	10.39	.00	.00	.00	.00	.00
(7, 6)	.10	.09	.00	.00	.00	.00	.00	.00	6.01	11.40	.00	.00	.00	.00	.00
(5, 19)	4.50	7.94	.00	.00	.00	.00	.00	.00	14.39	24.36	.00	.00	.00	.00	.00
(2, 1)	2.89	5.72	.00	.00	.00	.00	.00	.00	12.08	17.41	.00	.00	.00	.00	.00
(3, 2)	1.97	3.54	.00	.00	.00	.00	.00	.00	13.07	20.37	.00	.00	.00	.00	.00
(2, 3)	1.10	2.20	.00	.00	.00	.00	.00	.00	12.33	18.67	.00	.00	.00	.00	.00
(13, 2)	.11	.29	.00	.00	.00	.00	.00	.00	7.70	10.79	.00	.00	.00	.00	.00
(1, 2)	2.25	4.17	.00	.00	.00	.00	.00	.00	9.33	14.91	.00	.00	.00	.00	.00
(7, 21)	.58	1.20	.00	.00	.00	.00	.00	.00	6.17	12.23	.00	.00	.00	.00	.00
(14, 1)	.44	1.11	.00	.00	.00	.00	.00	.00	6.75	8.93	.00	.00	.00	.00	.00
(4, 3)	4.73	7.39	.00	.00	.00	.00	.00	.00	7.09	12.40	.00	.00	.00	.00	.00
(15, 1)	.04	.08	.00	.00	.00	.00	.00	.00	7.71	9.80	.00	.00	.00	.00	.00
(16, 2)	.14	.33	.00	.00	.00	.00	.00	.00	4.24	5.19	.00	.00	.00	.00	.00
(17, 1)	2.77	6.03	.00	.00	.00	.00	.00	.00	5.31	7.26	.00	.00	.00	.00	.00
(18, 19)	6.52	10.10	.00	.00	.00	.00	.00	.00	8.61	15.51	.00	.00	.00	.00	.00
(21, 7)	1.29	2.49	.00	.00	.00	.00	.00	.00	6.81	8.07	.00	.00	.00	.00	.00
(8, 21)	.63	.81	.00	.00	.00	.00	.00	.00	11.20	19.65	.00	.00	.00	.00	.00
(22, 21)	.07	.11	.00	.00	.00	.00	.00	.00	14.30	21.92	.00	.00	.00	.00	.00
(18, 7)	2.57	5.52	.00	.00	.00	.00	.00	.00	6.87	9.78	.00	.00	.00	.00	.00
(4, 5)	2.68	4.49	.00	.00	.00	.00	.00	.00	6.65	11.99	.00	.00	.00	.00	.00

(5, 4)	5.58	9.58	.00	.00	.00	.00	5.95	9.50	.00	.00	.00	.00	.00
(10, 5)	.09	.11	.00	.00	.00	.00	12.99	20.88	.00	.00	.00	.00	.00
(11, 4)	.11	.25	.00	.00	.00	.00	7.95	11.15	.00	.00	.00	.00	.00
(7, 18)	4.42	7.35	.00	.00	.00	.00	7.81	12.99	.00	.00	.00	.00	.00
(9, 7)	4.07	8.25	.00	.00	.00	.00	9.83	14.49	.00	.00	.00	.00	.00
(6, 7)	.02	.02	.00	.00	.00	.00	8.21	17.63	.00	.00	.00	.00	.00
(19, 18)	1.48	2.95	.00	.00	.00	.00	21.17	32.65	.00	.00	.00	.00	.00
(19, 5)	5.39	9.63	.00	.00	.00	.00	21.14	32.64	.00	.00	.00	.00	.00
(3, 4)	1.00	2.06	.00	.00	.00	.00	19.05	27.02	.00	.00	.00	.00	.00
(12, 3)	.15	.26	.00	.00	.00	.00	7.07	12.36	.00	.00	.00	.00	.00
(20, 19)	.05	.18	.00	.00	.00	.00	16.05	24.37	.00	.00	.00	.00	.00
SUBNETWORK-	65.35	116.77	.00	.00	.00	.00	10.17	16.32	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK	VEHICLE EMISSIONS (GRAMS/ MILE)					
		5	1	2	6	7	8
(7, 9)		.30	.35	.00	.00	.00	.00
(3, 12)		.46	.55	.00	.00	.00	.00
(19, 20)		.31	.37	.00	.00	.00	.00
(2, 13)		.42	.50	.00	.00	.00	.00
(1, 14)		.45	.55	.00	.00	.00	.00
(21, 8)		.02	.03	.00	.00	.00	.00
(1, 15)		.64	.79	.00	.00	.00	.00
(2, 16)		.63	.99	.00	.00	.00	.00
(1, 17)		.24	.32	.00	.00	.00	.00
(21, 22)		.30	.62	.00	.00	.00	.00
(7, 6)		.46	.52	.00	.00	.00	.00
(5, 19)		.10	.13	.00	.00	.00	.00
(2, 1)		.10	.11	.00	.00	.00	.00
(3, 2)		.10	.12	.00	.00	.00	.00
(2, 3)		.13	.18	.00	.00	.00	.00
(13, 2)		.27	.29	.00	.00	.00	.00
(1, 2)		.20	.22	.00	.00	.00	.00
(7, 21)		.43	.46	.00	.00	.00	.00
(14, 1)		.29	.44	.00	.00	.00	.00
(4, 3)		.33	.39	.00	.00	.00	.00
(15, 1)		.28	.32	.00	.00	.00	.00
(16, 2)		.48	.59	.00	.00	.00	.00
(17, 1)		.39	.57	.00	.00	.00	.00
(18, 19)		.28	.33	.00	.00	.00	.00
(21, 7)		.13	.18	.00	.00	.00	.00
(8, 21)		.26	.29	.00	.00	.00	.00
(22, 21)		.20	.24	.00	.00	.00	.00
(18, 7)		.29	.39	.00	.00	.00	.00
(4, 5)		.41	.50	.00	.00	.00	.00
(5, 4)		.42	.50	.00	.00	.00	.00
(10, 5)		.21	.25	.00	.00	.00	.00
(11, 4)		.25	.30	.00	.00	.00	.00
(7, 18)		.30	.39	.00	.00	.00	.00
(9, 7)		.17	.20	.00	.00	.00	.00

(6, 7)	.27	.32	.00	.00	.00	.00	.00
(19, 18)	.03	.03	.00	.00	.00	.00	.00
(19, 5)	.02	.02	.00	.00	.00	.00	.00
(3, 4)	.04	.05	.00	.00	.00	.00	.00
(12, 3)	.31	.26	.00	.00	.00	.00	.00
(20, 19)	.12	.16	.00	.00	.00	.00	.00
SUBNETWORK-	.19	.23	.00	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

LINK VEHICLE TYPE-	VEHICLE EMISSIONS (GRAMS/ MILE) CO						
	5	1	2	6	7	8	4
(7, 9)	19.40	27.97	.00	.00	.00	.00	.00
(3, 12)	30.17	43.94	.00	.00	.00	.00	.00
(19, 20)	20.58	29.94	.00	.00	.00	.00	.00
(2, 13)	26.93	38.62	.00	.00	.00	.00	.00
(1, 14)	28.03	41.49	.00	.00	.00	.00	.00
(21, 8)	2.29	3.20	.00	.00	.00	.00	.00
(1, 15)	40.99	62.93	.00	.00	.00	.00	.00
(2, 16)	33.47	73.67	.00	.00	.00	.00	.00
(1, 17)	16.40	24.77	.00	.00	.00	.00	.00
(21, 22)	16.89	49.54	.00	.00	.00	.00	.00
(7, 6)	32.09	41.90	.00	.00	.00	.00	.00
(5, 19)	7.43	10.97	.00	.00	.00	.00	.00
(2, 1)	6.46	8.04	.00	.00	.00	.00	.00
(3, 2)	6.45	9.03	.00	.00	.00	.00	.00
(2, 3)	8.90	14.02	.00	.00	.00	.00	.00
(13, 2)	21.93	24.60	.00	.00	.00	.00	.00
(1, 2)	12.55	16.30	.00	.00	.00	.00	.00
(7, 21)	27.63	35.78	.00	.00	.00	.00	.00
(14, 1)	20.63	35.30	.00	.00	.00	.00	.00
(4, 3)	21.03	30.43	.00	.00	.00	.00	.00
(15, 1)	23.05	28.15	.00	.00	.00	.00	.00
(16, 2)	42.56	50.79	.00	.00	.00	.00	.00
(17, 1)	25.89	43.30	.00	.00	.00	.00	.00
(18, 19)	18.08	25.80	.00	.00	.00	.00	.00
(21, 7)	7.64	12.55	.00	.00	.00	.00	.00
(8, 21)	23.22	26.25	.00	.00	.00	.00	.00
(22, 21)	17.63	20.89	.00	.00	.00	.00	.00
(18, 7)	18.20	30.75	.00	.00	.00	.00	.00
(4, 5)	24.79	38.92	.00	.00	.00	.00	.00
(5, 4)	24.74	37.04	.00	.00	.00	.00	.00
(10, 5)	18.64	21.91	.00	.00	.00	.00	.00
(11, 4)	21.07	25.45	.00	.00	.00	.00	.00
(7, 18)	18.64	30.59	.00	.00	.00	.00	.00
(9, 7)	12.02	14.96	.00	.00	.00	.00	.00
(6, 7)	23.10	28.91	.00	.00	.00	.00	.00
(19, 18)	2.36	2.87	.00	.00	.00	.00	.00
(19, 5)	1.82	2.12	.00	.00	.00	.00	.00
(3, 4)	2.84	4.44	.00	.00	.00	.00	.00
(12, 3)	21.67	22.19	.00	.00	.00	.00	.00

(20, 19) 11.24 14.35 .00 .00 .00 .00 .00
 SUBNETWORK- 12.24 17.80 .00 .00 .00 .00 .00
 VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

1

NETSIM CUMULATIVE VALUES OF EMISSION

VEHICLE TYPE-	LINK	VEHICLE EMISSIONS (GRAMS/ MILE)					
		5	1	2	6	7	8
(7, 9)		1.49	1.10	.00	.00	.00	.00
(3, 12)		2.20	1.69	.00	.00	.00	.00
(19, 20)		1.58	1.18	.00	.00	.00	.00
(2, 13)		2.17	1.64	.00	.00	.00	.00
(1, 14)		2.42	1.85	.00	.00	.00	.00
(21, 8)		.17	.19	.00	.00	.00	.00
(1, 15)		3.21	2.48	.00	.00	.00	.00
(2, 16)		3.34	3.20	.00	.00	.00	.00
(1, 17)		1.26	1.18	.00	.00	.00	.00
(21, 22)		1.78	1.90	.00	.00	.00	.00
(7, 6)		2.25	1.66	.00	.00	.00	.00
(5, 19)		.54	.42	.00	.00	.00	.00
(2, 1)		.54	.47	.00	.00	.00	.00
(3, 2)		.54	.43	.00	.00	.00	.00
(2, 3)		.70	.64	.00	.00	.00	.00
(13, 2)		1.05	.84	.00	.00	.00	.00
(1, 2)		1.06	.79	.00	.00	.00	.00
(7, 21)		2.26	1.54	.00	.00	.00	.00
(14, 1)		1.44	1.39	.00	.00	.00	.00
(4, 3)		1.76	1.30	.00	.00	.00	.00
(15, 1)		1.07	.77	.00	.00	.00	.00
(16, 2)		1.82	1.75	.00	.00	.00	.00
(17, 1)		2.05	1.94	.00	.00	.00	.00
(18, 19)		1.38	1.00	.00	.00	.00	.00
(21, 7)		.70	.75	.00	.00	.00	.00
(8, 21)		.84	.75	.00	.00	.00	.00
(22, 21)		.57	.59	.00	.00	.00	.00
(18, 7)		1.60	1.30	.00	.00	.00	.00
(4, 5)		2.07	1.52	.00	.00	.00	.00
(5, 4)		2.12	1.66	.00	.00	.00	.00
(10, 5)		.63	.62	.00	.00	.00	.00
(11, 4)		.89	.83	.00	.00	.00	.00
(7, 18)		1.62	1.29	.00	.00	.00	.00
(9, 7)		.81	.72	.00	.00	.00	.00
(6, 7)		.81	.86	.00	.00	.00	.00
(19, 18)		.14	.12	.00	.00	.00	.00
(19, 5)		.10	.08	.00	.00	.00	.00
(3, 4)		.20	.19	.00	.00	.00	.00
(12, 3)		1.37	.73	.00	.00	.00	.00
(20, 19)		.39	.42	.00	.00	.00	.00
SUBNETWORK-		.95	.76	.00	.00	.00	.00

VEHICLE TYPES 1, 5 = AUTO, VEHICLE TYPES 2, 6, 7, 8 = TRUCK, VEHICLE TYPE 4 = TRANSIT BUS

THE HIGHEST NUMBER OF VEHICLES ON THE NETWORK WAS 184 VEHICLES (MAXIMUM ALLOWED IS 20000).
THIS MAXIMUM OCCURRED AT 2092 SECONDS.

THE FRACTION OF VEHICLES THAT WERE UNABLE TO COMPLETE THEIR ASSIGNED TURN MOVEMENT WAS .00346

NETWORK-WIDE AVERAGE STATISTICS

TOTAL VEHICLE- MILE = 2742.56 VEHICLE-HOURS OF: MOVE TIME = 88.06 , DELAY TIME = 63.80 , TOTAL TIME = 151.86