AN EVALUATION AND CALIBRATION OF MDOT'S WORK ZONE DELAY MODEL

DRAFT FINAL REPORT

PREPARED FOR MICHIGAN DEPARTMENT OF TRANSPORTATION

PREPARED BY DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING MICHIGAN STATE UNIVERSITY

Richard W. Lyles

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16. Abstract

The context for the study is the desire on MDOT's part to be able to predict user delays in work zones. MDOT currently uses a delay model (the *Construction Congestion Cost Program*) and was interested in knowing the reasonableness of some of the input parameters and whether certain aspects of the delay estimates were accurate. More specifically, this study was directed to three objectives: verification/modification of the assumptions for "recommended work zone capacities;" examination of speeds in work zones when traffic volumes approach capacity; and measuring queue lengths in the field. The latter were to be compared to the model's estimates. Estimates of capacity at several sites showed that numbers larger than the "recommended" values were routinely obtained although if the recommended values were true averages, this might well be expected. Speed studies showed that speeds at capacity were in the range of 40-50 mph (although based on few data) while speeds in relatively free-flowing conditions in construction zones ranged as high as 70 mph for "low intensity" zones and less for "high intensity zones." The model was not found to be particularly accurate in estimating queue lengths. Moreover, the estimates were found, not surprisingly, to be very sensitive to assumed roadway capacity. While the model may have problems in predicting absolute values of queues and delays, using it for relative estimates (e.g., in an analysis of alternatives) was not contraindicated.

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AN EVALUATION AND CALIBRATION OF MDOT'S WORK ZONE DELAY MODEL

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INTRODUCTION

User delays caused by work zones constitute one of the key costs in constructing, reconstructing, rehabilitating, and generally maintaining the highway system. These user costs can loom large in the overall consideration of the costs of constructing various pavements and their subsequent upgrading/maintenance over the life of the installation. Reasonable estimates of these user costs are, thus, important to the Michigan Department of Transportation (MDOT) in their life-cycle cost analysis for pavements, traffic maintenance schemes, and related decisions. There are various models that are available for predicting delay including the Construction Congestion Cost Program which was developed for MDOT in 1996 and 1997 and has been used selectively by MDOT personnel since then. For this model, it is assumed that there are two components of delay experienced by motorists who traverse the work zone: that which is experienced in the queues that sometimes form prior to the lane closure for freeway work; and that which is experienced as a result of lower (than normal) operating speeds through the zone. In addition, there are delays which detoured or diverted motorists experience. While the model includes some consideration of these latter changes in travel, these delays are extremely site-specific and depend, for example, on the availability of readily identified detours or alternative routes. Thus, the focus of this project is on the delays encountered in and prior to the zone and not those experienced by the detoured/diverted motorists.

Like any model, the *Construction Congestion Cost Program* (referred to herein as either the CO³ model or, more simply, the "delay model") is limited (at a minimum) by the accuracy and reasonableness of the data used as inputs (e.g., vehicular volumes on the roadway). In addition to the data that are specific to a particular site, this model requires some assumed values of the capacity of roadway sections. In this context, MDOT established the following general objectives for this project:

- verify and/or modify the input assumptions for "recommended work zone capacities" (see table 1),
- conduct speed studies at work zones when the traffic "demand" equals capacity; and
- measure queue lengths in the field.

The verification of work zone capacities is clear enough—are the capacities used as input assumptions accurate or not? It was understood from the outset of the project that not all possible combinations of "normal" and "open" lanes (table 1) would be considered. The combinations studied would depend in part on the work zones identified by MDOT. It should also be noted that only freeway sites were of concern in this project.

Table 1. Recommended work zone capacities¹

number	of lanes	average capacities ²			
normal	open	vehicles/hour	vehicles/lane/hour		
3	1	1,400	1,400		
2	1	1,550	1,550		
5	2	3,200	1,600		
4	2	3,400	1,700		
3	2	3,400	1,700		
4	3	5,250	1,750		

¹ from MDOT and CO³ manual

² subject to correction factors: if % heavy trucks > 10% reduce VPH by 10%; if entrance ramp within closure zone, reduce freeway lane 1 VPHL by the minimum of the ramp volume or 800 VPHL; and add/subtract 10% of the VPH for above/below "average" work activities

The purpose of the speed studies was to allow estimation of speeds through work zones that could then be then be used as input parameters to the delay model. Finally, the field measurements of queue length were to be done to verify the outputs of the delay model i.e., given various input assumptions, was the queue length predicted by the model accurate for a given situation.

BASIC APPROACH

The basic approach to the project included undertaking some basic manipulation of the model to get a sense of its sensitivity to variations in input parameters; collection of field data on work zone volumes, queue lengths, and vehicle speeds; comparison of observed field data and model estimates; and comparison of observed field data with input assumptions (e.g., comparison of observed volumes in work zones with those noted in table 1).

Data collection was done using videotaping equipment (i.e., traffic was videotaped from freeway overpasses and later processed to obtain basic speed and volume data), tube- and loop-based automatic counters (although these were used sparingly), and manual observations in the field.

SITE SELECTION/DATA COLLECTION

The data that were used in this project were collected at a variety of sites—some sites were used exclusively for this project while others were used for other projects as well. Some data collected separately by MDOT (for other purposes) were also used.

A "good" site for this project would have been one where there was, predictably, no congestion at some times of the day and congested conditions at others. For example, a site where traffic flow was relatively light leading up to rush hour (e.g., no congestion at, say, 3:00 PM) and then picked up during rush hour so that there was congestion and

queuing would have been ideal. Work in the zone would have had to have been continuous and similar throughout the period. Moreover, the site should have been relatively free of other characteristics that might affect traffic flow (e.g., variations in lane width, nearby ramps). With this sort of site, field observations would have shown the effects of the work zone on capacity and queuing (and the cause of queuing) and analysis would have been reasonably straightforward.

Basically, what was desired from the capacity perspective was a site where sufficient data could have been collected to illustrate a parabolic) speed versus volume plot (theoretically parabolic-shaped) that starts out at low volume (and relatively high speed), shows decreasing speed with increasing volume, and finally, as traffic volume reaches and exceeds capacity, begins showing decreasing speed and decreasing (through) volume (highly congested conditions).

In addition, sites had to be consistent with the data collection procedures. Sites which did not afford appropriate vantage points for the videotaping equipment had significantly less utility. In some instances, tube-based counters were used although even that was difficult as the data collection equipment had to be placed by Michigan State University (MSU) personnel, a problematic activity in high-traffic areas. Finally, sites had to be safe enough to allow manual collection of data (which eliminated other sites).

Finding sites such as just described posed significant problems from the outset. Many sites which would have been useful had restrictions on construction (e.g., nighttime work only) or varying conditions during the day. Thus, for example, a site that would have been "good" had work been done during the day was generally not useful. Moreover, even acquiring lists of projects that MDOT identified as potentially useful was problematic. Other sites, where work was done during the day, often proved to be inappropriate since congestion-related delays were simply not a problem or occurred only sporadically (and, most probably, for reasons other than capacity problems). In these instances, although there were delays due to reduced speed through the work zones, there were no queue-induced delays as a general result of the traffic volume exceeding capacity. In these latter instances, measurement of traffic volumes to approximate capacity was fruitless.

Notwithstanding the substantial problems in identifying appropriate sites, there were three primary sources for the data used in this project. Data were collected at several new sites specifically for this project. Data collected at other sites in prior years (e.g., during a work zone speed project which included data collection in 1997) were re-processed to show speed vs. volume relationships. Finally, some data from construction sites on I-94 and I-275 which had been collected by MDOT for other purposes were also used.

ANALYSIS AND RESULTS

The next several sections are addressed to the findings of the project regarding the objectives identified earlier: verification and/or modification of the "recommended work zone capacities;" results of speed studies at work zones when the traffic "demand" equals

capacity; and measurement of queue lengths in the field. It should be noted that what was really observed in the field were 15-minute flow rates rather than volumes *per se*. This should not adversely affect the results that are reported.

VERIFICATION/MODIFICATION OF WORK ZONE CAPACITIES

The basic question to be addressed was "what are the lane-by-lane and overall capacities of lanes through a work zone?" The answer to the question was basically determined graphically by constructing speed versus volume plots for given situations. Theoretically, principles of traffic flow theory suggests that some sort of parabolic-shaped curve should be observed with the apex of the curve indicating the capacity. In reality, the data from the sites that were used did not generally produce such "clean" outcomes. However, sufficient data were obtained in several instances to approximate capacity under certain conditions.

The results shown in table 2 are from sites where data were collected by MSU or MDOT. The latter were part of an extra Michigan State Police enforcement effort in work zones that was funded by MDOT. Many other sites were also observed during the summer of 1998 specifically for this project (e.g., US-127 near I-69, US-27 near Mt. Pleasant, and I-69 southwest of Flint). Unfortunately, the data from these sites were often not useful for the reasons stated earlier—e.g., there was no congestion and/or queuing or volume decreases occurred for other reasons (not related to traffic volumes exceeding capacity in the conventional sense). Data from these sites are not shown here and, in many instances, were not even processed once it was clear that they would not be useful for the task at hand.

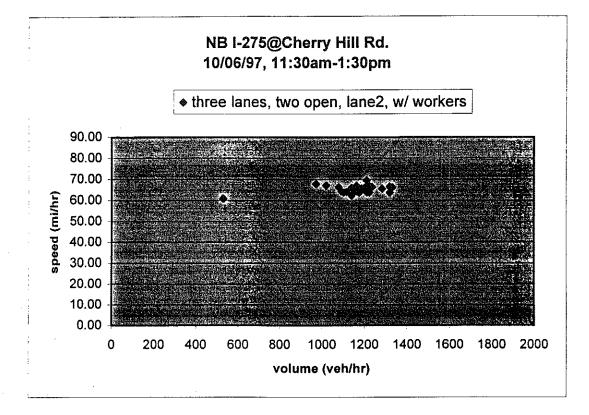
Turning to the results in table 2, the first three columns are reproduced from the delay model documentation (which, in turn, comes from MDOT). The numbers in column 3 (recommended VPHPL) are the ones that are being verified. The rest of the columns show the results—i.e., what was observed in the field. It should be noted that data were only available for three lane reduction scenarios: $3\rightarrow 1$, $2\rightarrow 1$, and $3\rightarrow 2$. No data were collected where lanes were reduced $5\rightarrow 2$, $4\rightarrow 2$, or $4\rightarrow 3$ as MDOT identified no sites with these configurations. While the unavailability of data for all conditions is unfortunate (although not unexpected), some of the most common lane reduction scenarios encountered by motorists are accounted for in the table.

Note that the observed VPHPL values are not necessarily the maximum that could have been observed (i.e., capacity)—they are the maximum observed during the data collection period and based on 15-minute data collection periods. In several instances, the speed vs. volume plot did not show specific evidence of capacity having been reached (i.e., the theoretical parabolic shape resulting from a roadway becoming so congested that speeds and volume both decrease). Figure 1 provides examples of data from each of two lanes (one graph each) at one site where the maximum volume (capacity) may not have been achieved. In each of the instances shown, what appears to be the case is that these are relatively free-flowing vehicles with the variations noted within the time period. Figure 1

# of la	anes	average recommended	observed		workers	police		range	average	· · · · · · · · · · · · · · · · · · ·
normal	r	VPHPL ¹		lane #	presence	presence	site	observed	speed	other comments
3	1	1400	1600	n/a	unk	yes	I275	300-600	15-65	some evidence of parabola
			1600	n/a	unk	no	1275	200-1600	15-70	some evidence of parabola
2	1	1550	1600	2	yes	no	WB M14@Dixboro	1100-1600	20-45	
			1700	2	yes	no	EB M14@Dixboro	1200-1700	50-60	
5	2	1600	not observed						 	
4	2	1700	not observed							
3	2	1700	1700	2	yes	no	NB I275@Joy Road	1300-1700	20-40	
			1900	'n	yes	no	NB 1275@Joy Road	1400-1900	2040	
			1350	2	yes	no	NB I275@Cherry Hill	900-1350	60-70	outlier at 550
			1200	3	yes	no	NB 1275@Cherry Hill	700-1250	65-75	outlier at 550
			1800	1	yes	no	WB I94@Junction	200-1800	40-60	
			2300	2	yes	no	WB 194@Junction	200-2300	45-65	outlier at 2550
			1250	1	yes	no	WB 194@Junction	250-1300	50-60	
			1750	2	yes	по	WB 194@Innction	200-1750	55-65	
			1700	1	unk		EB 194@Junction	200-1700	25-60	some evidence of parabola
			2200	2	yunk -	no	EB 194@Junction	150-2200	-25-65	some evidence of parabola
4	3	1750	not observed							

 Table 2. Observed and current "recommended" work zone capacities

Notes: 1. "recommended" is the current recommended practice from MDOT and delay model manual



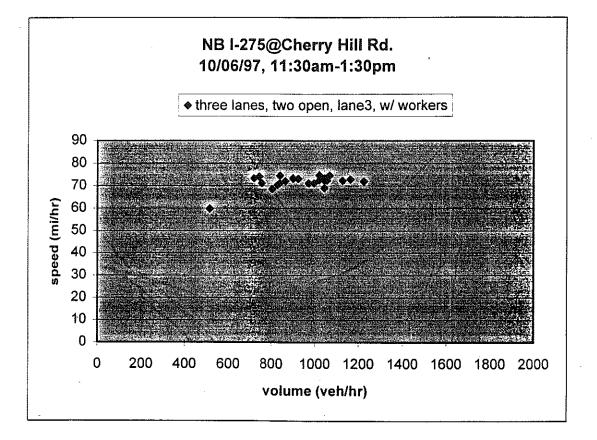


Figure 1. Examples of speed vs. volume plots for two adjacent lanes-free flow

is reasonably typical of sites where the data did not evidence of decreasing speeds with increasing volumes. Again, the volume shown as "capacity" is really the maximum volume that was observed—capacity could, in fact, be higher.

On the other hand, for a couple of sites there was some evidence of the expected shape (although it did not "fit" very well statistically). As an example, figure 2 shows data from I-275 (one lane open) where the speed decreases (from 50-60 mph to just under 50 mph) as volume increases to at least 1600 VPHPL. There are then additional data at relatively low speeds (40 mph and below) with lower observations of VPHPL. Other examples are shown in appendix A.

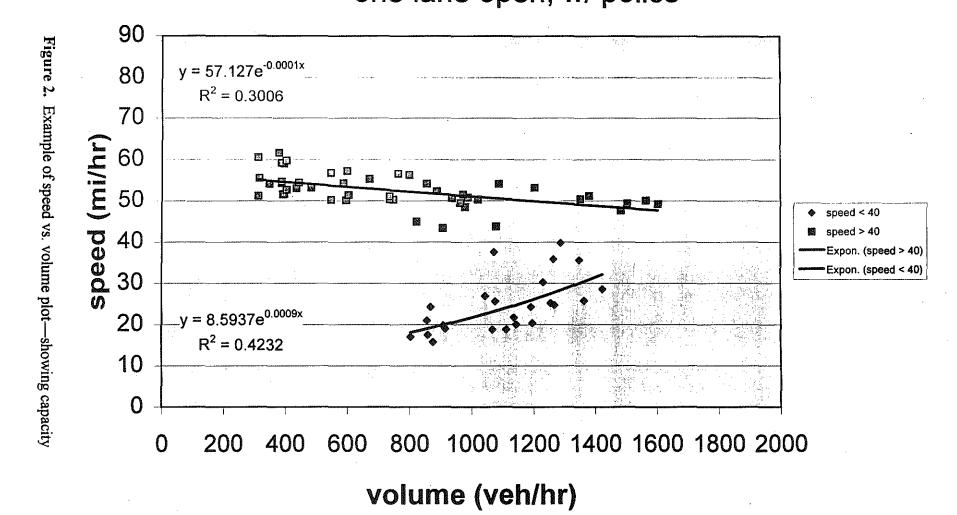
Although based on relatively few observations at several sites, it seems clear that there is consistent evidence that the observed values of VPHPL exceed those of that are currently "recommended" (table 1) for all three lane-closure scenarios that were examined. These data also provide evidence that there is variation between the lanes. This is not unexpected, but the implicit assumption in table 1 was that both lanes had the same capacity. Using the averages of the maximum volumes of the two adjacent lanes as a comparable value in the multiple lane situation, the observed maximum volumes were generally about 200 vehicles higher than those in the "recommended" column. That is, for a $3\rightarrow 1$ lane closure, the observed VPHPL was 1600 vs. the "recommended" 1400; for a $2\rightarrow 1$ closure the observed-recommended comparison was 1650-1550; and for a $3\rightarrow 2$ closure it is 1900-2000 vs. 1700.

In conclusion, it appears that, based on the data at hand, that the recommended values of the capacity could be increased on the order of 200 VPHPL. At a minimum, when analyses are done that require use of a capacity assumption, alternative analyses should be done with the currently recommended figures as well as +200 values. As a caveat, it should be noted that "capacity" is affected by several things such as lane width, offset of obstructions (e.g., barrier walls) from the traveled way, the adjacent work activity, motorist aggressiveness, and so on. The data shown here indicate that for the several situations observed, higher volumes were accommodated than would be expected from the figures in table 1. Neither set of numbers is "absolutely" applicable for all situations.

Finally, it should also be noted that the term "average capacity" is used when referring to the numbers shown in table 1. However, it is not clear over what range these "averages" were calculated nor is there any indication of a confidence level or standard deviation about this average. If, in fact, they truly are average values, then the observation of some volumes greater than those shown in the table obviously would have occurred (unless there was zero variance). In this context, the "+200" adjustment represents an increase of about 11-14% over the current figures which is likely within what might be expected for a confidence interval about a mean value.

So, while the volumes observed in the field were consistently higher than the current recommendations in table 1, they may well be within the range of "normal" expectations of variation. What is *strongly recommended* is that any calculations of delay based on

I-275 loops speed vs. volume one lane open, w/ police



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volumes exceeding assumed lane capacities (whether using the delay model or any other approach) be done for a range of assumed values of capacity. The sensitivity of any findings (e.g., when to do reconstruction) with respect to such assumptions should be thoroughly investigated.

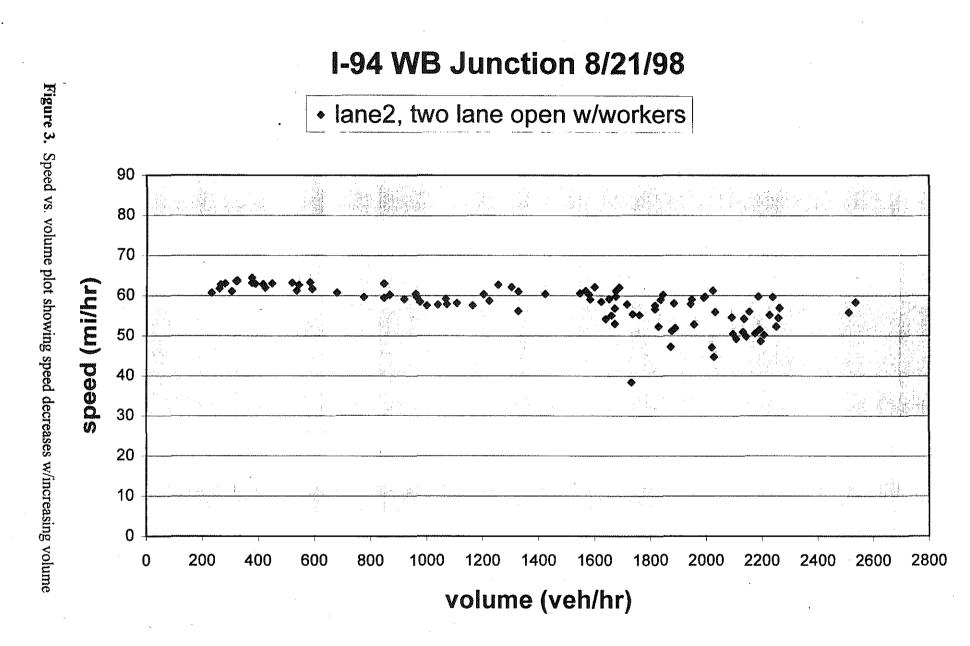
OBSERVATIONS OF VEHICLE SPEED WHEN TRAFFIC VOLUMES APPROACH CAPACITY

MDOT also desired to know about the relationship between speed and traffic volumes near capacity. The ranges of vehicle speeds observed at different volumes for the selected sites were also shown in table 2. The relationships shown in figures 1 and 2 are also characteristic of relationships observed in the field.

In general, inspection of these graphs tends to show one of two patterns. The first pattern that emerged is that when congestion does not appear to be slowing vehicles, they travel at more-or-less an "average" speed for the conditions that are present; and that average does not vary much with volume <u>or</u> decreases very slightly with increasing volume. This is evident in figure 1—average vehicle speeds were relatively high (60-70 mph in lane 2; 70-75 in lane 3) and did not vary much although volumes changed in the one instance from about 700 to 1200 vehicles. This same trend was seen at other sites and under other conditions. Figure 3 is another example. In this instance there is a decrease of about 5-10 mph (from 65 or so to about 55) in the average speed as volumes increase in the lane from about 200 to over 2300. Also in this instance, there is more variation in average speeds at high volumes, which would be expected.

The second trend can be seen in figure 2 (already presented). When congestion is "reached," there appear to be two distinct regions—relatively free-flowing conditions where average speeds decrease slightly as volumes increase (in this instance about 5 mph over a range from 300 to 1600 vehicles; and, then, once congested conditions are reached, significant decreases in average speeds (average speeds in what is seen to be the "congested region" of figure 2 range from about 15 to 40-45 mph).

The important point here though is that in both patterns there appears to be a "natural" (or reasonable) speed that is established by the response of motorists to site conditions which can be fairly well maintained until congestion (or some other "extra" event) occurs, then it breaks down. Previous work (more specifically, the **1997 Work Zone Speed Study** by Lyles, Sisiopiku et al. in 1998) has shown that this speed is a function of site characteristics—principal among them are the number of open lanes, whether the lane has reduced width, the type of separation between the travel lane and the workers/work activity (e.g., barrier walls, drums), and whether workers were present or not. That work also showed that the posted speed limit was almost certain to be violated (i.e., average speeds would be considerably higher than the posted limit) when congested conditions were not present. In a separate analysis of the same data reported in the **1997 Work Zone Speed Study**, it was shown by Krunz (1998) that a "work zone intensity factor" based on these factors showed promise in predicting work zone speeds under non-congested



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conditions. The intensity factor varied from 1 to 18 where 1 meant that the work zone was "least intensive" (three open lanes, no lane width reduction, barrier walls separating the work from the travel lanes, and no workers present) and 18 represented the "most intensive" situation (one open lane, lane width reduction, cones separating work from travel lanes, and workers present). The average speeds observed ranged from just under 70 in a least-intensive zone to about 54 in a most-intensive (one-lane open) zone. It should be noted that none of the zones studied had significant lane shifts or high-volume ramps near to where the speed data were collected—the point being that there are other factors that could affect the overall travel speed through the zone as well. An excerpt from the analysis by Krunz, average speeds calculated for various levels of work zone intensity, is shown in table 3.

number of	lane	lane	worker	assigned	observed average
open lanes	reduction	separation	1	intensity	speed (mph)
	Tequention		presence	mensity	
3	no	walls	no	1	69.58
3	no	walls	yes	2	68.57
3	no	drums	no	3	
3	no	drums	yes	4	
3	no	cones	no	5	
3	no	cones	yes	6	
2	yes	walls	no	7	65.2
2	yes	walls	yes	8	
2	yes	drums	no	9	64.93
2	yes	drums	yes	10	64.85
2	yes	cones	no	11	
2	yes	cones	yes	12	
1	yes	walls	no	13	
1	yes	walls	yes	14	56.85
1	yes	drums	no	15	58.41
1 .	yes	drums	yes	16	54.38
1	yes	cones	no	17	
1	yes	cones	· yes	18	53.79

 Table 3. Work zone intensity and observed speed

In this context, the prediction of speeds in work zones (so that delay in traveling through the zone can be estimated) is seen to be fairly difficult. If vehicles are relatively free-flowing (i.e., there is not congestion within the zone), the average speed appears to be a function of the characteristics of the zone itself. Data collected during the 1997 and 1998 construction seasons showed that average speeds in uncongested zones could range from about 50 to greater than 70 mph but that the average speed was virtually always higher than the posted speed limit. Based on the sparse evidence reported earlier (table 2), when congested conditions are reached, average speeds can and do drop well below 40 mph. In these situations, the "speed at capacity" appears to have been in the 40-50 mph range.

But, when work is "intense" and traffic volumes high, it is obvious from anecdotal experience that traffic through the zone can become "stop and go" with average speeds at 20 mph or lower.

In conclusion, the selection of an assumed speed for travel through a work zone for the purposes of calculating delay is fraught with problems. The most significant (and fairly obvious) one is that each work zone is unique—there are numerous factors that change from zone to zone and the interaction among these factors is what motorists respond to when "selecting" the speed that they think is appropriate. Based on previous work on work zone speeds and the observations and data from the 1998 season, the following rough guidelines are offered as estimates of the realistic speeds that are being achieved through work zones in uncongested situations:

- for least-intensive work zones with multiple open lanes, barrier wall separations, and no lane width reductions—65-70 mph;
- for moderately-intensive work zones with multiple open lanes, less than barrier wall separations, and lane width restrictions—60-65 mph; and
- for most-intensive work zones with single open lanes, less than barrier wall separations, and lane width restrictions—50-60 mph.

When it is expected that the zone will be operating near capacity, the assumed average speed should probably be in the 40-50 mph range and much lower speeds are probably more appropriate if congestion is expected. Anticipated areas of "spot" congestion through the zone should also be factored in to lowering the average travel speed. An example of this would be a zone that generally falls into the least-intensive category but it is known that there will be one or more areas where work will be more intensive (e.g., work on an overpass which would require a lane narrowing or minor shift within an overall zone which is fairly open) or where there is an artifact such as a difficult/awkward entrance-ramp merge (because of construction).

Finally, as with the assumptions for capacity, it is *strongly recommended* that any analyses should be done with a range of assumed operating speeds so that the sensitivity of the analysis to changes in the assumptions is clear.

QUEUE LENGTH VERIFICATION

The last objective for the project was to measure queue lengths in the field and compare them with those predicted by the delay model. The basic problem was finding sites where queuing was occurring (as noted earlier)—e.g., many otherwise appropriate sites were restricted to nighttime work when volumes were lower and/or appropriate volume data could not be collected; many sites where work was being done during the day did not have sufficient traffic volumes to result in queuing. Other sites were quite short-term and opportunities were missed when they were "checked out" one day and deemed good to use only to return later and find that the work was either completed or that the work site configuration had significantly changed so that the queuing problem no longer existed. So, while some data were collected at numerous sites, only a very few were fruitful.

Relatively detailed analyses were, however, done at two sites. These serve to show at least some difficulties with using the delay model to predict queue length. The two sites that were monitored were US-127 NB in the vicinity of its junction with I-96 and I-196 WB in Grand Rapids.

It should be pointed out that despite the relatively complex instructions for the model and the sometimes daunting spreadsheet print-outs that are produced, the basic queuing model is fairly simple and deterministic. The fundamental model is that queuing will occur if the volume to be accommodated exceeds capacity. It does **not** easily allow for the effects of, say, lane shifts, near the start of a zone or narrowed lanes. These "allowances" or accommodations have to be made by the model's user through adjustment of assumed capacity or operating speeds.

US-127 NB AT INTERCHANGE WITH I-96

The construction work being done at this site was a bridge deck replacement on northbound US-127. The actual work site was about 0.5 miles in length. The work was done during the day and resulted in one of two lanes being closed (day and night) for the duration of the work period. There was a barrier wall adjacent to the actual work area although the wall did not extend very far beyond the actual work area. During (relatively) high-volume times, and especially the AM rush period, there was considerable queuing of northbound traffic. The posted speed limit through the construction zone was 45 mph. The site was complicated by the fact that a ramp from eastbound I-96 merges with northbound US-127 immediately prior to the lane closure area.

Actual speed and volume data were collected at the site and queues were observed and measured. The volume and speed data were used in the delay model with other standard assumptions. The maximum hourly volume was 1012 for 5:00-6:00 PM while the maximum AM rush volume was 993 for 6:00-7:00 AM. Average overall speeds through the zone varied between 34 and 39 mph and dropped during congestion periods to 5-15 mph. The model was then used to predict average delays in time and queue lengths (i.e., number of vehicles queued, length of queue in distance). The detailed summary outputs from the model are provided in appendix B for a variety of conditions. Results are summarized in the paragraphs that follow and in table 4.

The model was initially run at assumed capacities of 1,550 and 1,400 (the one-lane capacities from table 1) with various speed assumptions. No queuing or significant delays were predicted as the actual traffic flow never exceeded the assumed capacity. These numbers were not, however, adjusted for the ramp intersection (which was not actually within the closure zone *per se*). The model was then run at an assumed capacity of 1,000 VPHPL. This volume, on the other hand, is considerably lower than the recommended

assumed	zone speed	zone speed	max queue	max queue	max delay	user costs
capacity	low volumes	near capacity	vehicles	distance	minutes	of delay
1000	45	15	0	0.0	1.6	\$2,222
1000	45	10	0	0.0	2.5	\$3,434
1000	45	5	0	0.0	5.2	\$6,852
1000	39	15	0	0.0	1.6	\$2,325
1000	39	10	0	0.0	2.5	\$3,537
1000	39	5	0	0.0	5.2	\$6,955
1000	34	15	0	0.0	1.6	\$2,438
1000	34	10	0	0.0	2.5	\$3,650
1000	34	5 .	0	0.0	5.2	\$7,069
900	45	15	74	0.4	6.5	\$4,219
900	45	10	68	0.4	7.1	\$5,408
900	45	5	50	0.3	8.9	\$8,855
900	39	15	74 .	0.4	6.5	\$4,297
900	39	10	68	0.4	7.1	\$5,487
900	39	5	50	0.3	8.9	\$8,934
900	34	15	74	0.4	6.5	\$4,383
900	34	10	68	0.4	7.1	\$5,574
900	34	5	50	0.3	8.9	\$9,022
800	45	15	177	1.0	14.8	\$10,370
800	45	10	168	1.0	15.2	\$11,417
800	45	5	141	0.8	16.1	\$14,462
800	39	15	177	1.0	14.8	\$10,425
800	39	10	168	1.0	15.2	\$12,084
800	39	5	141	0.8	16.1	\$14,518
800	34	15	177	1.0	14.8	\$10,484
800	34	10	168	1.0	15.2	\$11,533
800	34	5	141	0.8	16.1	\$14,580

 Table 4. Model outputs for US-127 site for various assumptions of capacity and speed

"average capacity" for a two-to-one lane closure (see table 1) since there needed to be a correction for ramp traffic. At an assumed capacity of 1,000, there were still no appreciable delays or queuing predicted (again, the actual volume never exceeded the assumed capacity). The results of several runs of the model are shown in table 4. The "zone speed low volumes" are the expected speeds of vehicles through the work zone when there is low volume (e.g., free-flow vehicles). The numbers shown (45, 39, and 34 mph) are, respectively, the work zone's posted speed limit and observed average speeds. The "zone speed near capacity" are the speeds expected through the lane closure area when congestion is present. (It should be pointed out that in this instance, these speeds

were "known" from measurements. In an actual pre-construction application of the model, these speeds would have to be estimated.) The time delays are derived from the differences between the normally posted speeds and the work zone speeds—in essence, a "base" for the zone without congestion. The model was then run for assumed capacities of 900 and 800. (In the latter situation, this is the equivalent of assuming that US-127 and the ramp have almost equal volumes since the default ramp volume correction factor is 800.)

The results of these model runs show the following:

- The predicted maximum queue of vehicles (and distance) is very sensitive to the assumption of capacity. For example, although several (observed) hours had volumes near, but not over, 1,000 vehicles (see detailed printout of the model's spreadsheets in appendix B for the actual 24-hour volumes at the site), there was no queuing predicted when capacity was assumed to be 1,000. However, when capacity was lowered to 900, maximum queue lengths were quite large. When the capacity assumption is lowered even further (i.e., when the default correction for the merging ramp is incorporated), the queue increases more than two-fold—even though the assumption is thought to be excessive.
- The queue lengths observed in the field were typically in excess of one mile during the AM rush period—significantly longer than predicted by the model, even under the worst-case scenario of capacity being set at 800 (based on the ramp merge).
- The model outputs on user cost are relatively insensitive to modest changes in the "off-peak" speed through the zone.

Basically, the model did not predict the queuing outcomes very accurately—the capacity assumption had to be reduced to an apparently artificially low level to even "come close." In point of fact, the capacity of the roadway with respect to the mainline volume was at least 1,000 since that many vehicles were, in fact, accommodated (i.e., the actually counted mainline traffic approached 1,000). However, rather than showing that the model is inherently "incorrect," it demonstrates that the uniqueness of this zone is not easily modeled by a straightforward application. Indeed, much of the queuing was probably caused by the action of motorists on NB US-127 who consistently allowed ramp traffic (which was STOP-controlled at the end of the ramp) to merge into mainline traffic. Queues on the ramp were typically just a few vehicles (if that) while mainline queues, as noted, often exceeded one mile. The problem with underestimating queue lengths is that user costs are also then underestimated.

The flaw in the model is that complex situations (such as queue formulation) cannot be easily modeled directly. At the same time, if the work zone can be well enough described in terms of the likely capacity, then the model would probably compensate in a relative sense. However, it should be noted that the work on capacity reported earlier indicated that the capacities given in table 1 might be higher rather than lower.

WB I-196 GRAND RAPIDS

Including the areas where the construction zone signing was placed, this site extended from about milepoint 73 to about exit 67 on I-196. One of two lanes was closed and there were several ramps within the work area. Without going into the same level of detail as the US-127 site, there were similar problems in predicting the queues that were observed. Unless the assumed capacity was lowered to 800 VPMPL, no queuing was predicted by the model, and even then it was not long (e.g., 27 vehicles). The observed queues, on the other hand, were in excess of three miles.

On-site observations indicated that the actual queues and congestion resulted from several factors (which would, indeed, lower capacity a significant, although hard to predict, amount). These included workers at one bridge who would stop traffic whenever a construction vehicle was repositioned, a relatively high-volume entrance ramp, early traffic shifting for the lane closure, and, to some extent, slow-moving trucks in the traffic stream.

DISCUSSION

For the two, quite different, work zones discussed in the previous sections, the delay model was seen to not predict queuing very well. In order to get the model to even show queuing, it was necessary to lower the assumed capacity to what seems to be an artificially low level. For example, it was clear (from observation) that from 900 to near 1,000 vehicles/hour were passing through the US-127 site at some points—but fixing the capacity at 1,000 produced no queues. Adjusting the capacity downwards to 900 and lower in the model produced queues although not as long as were noted in the field. Perhaps more importantly, if an engineer was modeling the likely outcome of this work zone when it was being designed, it is not at all clear that the far lower capacities would have been selected—if not, the queues that formed would have been unexpected.

The model, as noted, is fairly simplistic in how it predicts queues—if "demand" exceeds the assumed capacity, queues form. However, the model does not take into account the probabilistic nature of flow variation nor does it take into account other factors that will cause queuing (e.g., flow disruptions when a construction vehicle is repositioned or enters/leaves a site, the stop and go nature of some ramp merges). Moreover, the actual length of the queues (as opposed to the number of vehicles) is predicated on assumed, but consistent, spacing of vehicles. It was often observed in the field that there is often significant variation in vehicle spacing in work zone queues which will cause the actual length to be different from that predicted by any model using simplistic assumptions.

SUMMARY, CONCLUSIONS, AND DISCUSSION

The following summarizes the results of the three parts of this project:

- The "recommended work zone capacities" (table 1) were observed to be exceeded for the three scenarios (of lane closures) that were studied. Based on the observations made (which were of maximum flow rates and not necessarily capacity *per se*), it appears that the table 1 values could be increased by 200 VPHPL. At the same time, if the values in table 1 are really "averages" for capacity, the observations that were made are within what would likely be an expected variation around a mean value.
- Capacity is clearly dependent on a variety of factors. It was noted, anecdotally, that flow rates were decreased in any number of situations such as when construction vehicles interfered with traffic flow, when workers were very close to the traveled lane, when ramp traffic merged in an awkward fashion with mainline traffic, or when there were lane shifts. The point being that the capacity measurements reported above were taken in "good" locations within work zones. At other locations, capacity could be restricted rather quickly and unexpectedly—these sorts of variations are very difficult to realistically model or anticipate.
- Traffic speeds in work zones vary significantly. For uncongested conditions, there appears to be a "natural" or "reasonable" speed that is predicated on the motorist's perception of what is a safe speed which is, in turn, based on, what has been called here, the "intensity" of the work zone. While more detail was provided in the appropriate section, in summary, in less intensive situations (e.g., where there are multiple lanes of traffic maintained, lanes are not reduced, and the separation between the work and the motorists is done with a barrier wall) average speeds around 70 mph were observed while in more intensive situations (e.g., one lane open, lanes are reduced, separation between workers and traffic is with cones) average speeds were nearer to 50 mph. In congested conditions, traffic speeds are extremely difficult to predict and depend on the volumes themselves as well as worker activity and myriad other factors. If capacity is simply a "volume" phenomenon, the speed at capacity appears to be between 40 and 50 mph (based on limited data). With other factors involved, speeds can easily drop below 40 mph and stop-and-go conditions may occur. It is not at all clear that speeds in truly congested conditions can be accurately predicted.
- Queue lengths were not well predicted by the delay model. For the two sites that were studied in detail, assumed capacities had to be adjusted downward from what might have been otherwise used in order to get the model to "produce queuing." Even then, the predicted queue lengths were significantly shorter than what was observed in the field.

One of the overarching recommendations that result from the above is the absolute need to do sensitivity analysis for any application of the delay (or any other) model when using

it to predict delay times and costs. For example, for straightforward sites (e.g., "low intensity" sites with no ramp problems) various assumptions of capacity (e.g., the currently recommended value ± 200 VPHPL) should be used in combination with expected daily variations in traffic flow to assess user costs. For complex sites (e.g., "high intensity" sites with high-volume ramps, work-related vehicles expected to disrupt traffic flow), the range of combinations (and most importantly, capacity) considered should be even more extensive.

The sensitivity of the delay model to assumed values of capacity is not unexpected—the capacity value (relative to the expected volume on the roadway) triggers the queue formation. The model is simplistic and, arguably, does not provide reliable estimates of queue length and associated delay costs. The question is whether queue formation and delay can ever be simply and accurately modeled. Observation of the several work zone sites where both this study and others have been done over the last two years give credence to the assertion that "all sites are different"—they certainly appear to be unique. The I-69 site southwest of Flint that was used extensively in the 1998-99 speed-related study is a case in point. This site seemed very likely to produce high travel speeds through the zone—visibility was good, the work area was not very "intensive" (although it was restricted to only one lane), and I-69 is generally perceived to be a reasonably high-speed road when construction is not present. However, in this case minor shifts in the lane (e.g., a lane was moved toward the median by a foot or two although it was not narrowed) and other minor attributes of the site seemed to cause speed reductions in addition to a relatively high incidence of through trucks slowing the traffic.

The above points to the need for users of the model to closely evaluate what the likely capacity is not only for the work zone as a whole but at critical points in the zone. This suggests not only the standard sensitivity analysis suggested above, but also perhaps even more specific analysis of "what if" scenarios—e.g., *what if* construction vehicles are likely to inhibit flow at a bridge site once or twice an hour; *what if* the merging of a high-volume ramp is very awkward, causing mainline vehicles to slow or even stop for entering traffic from the ramp; *what if* effective capacity is reduced to 500 or 600 VPHPL. Simply picking a typical value from the "recommended work zone capacities" from table 1 (and the manual) and running the model is not nearly sufficient. The value for capacity must be estimated with care and sensitivity analysis is critical.

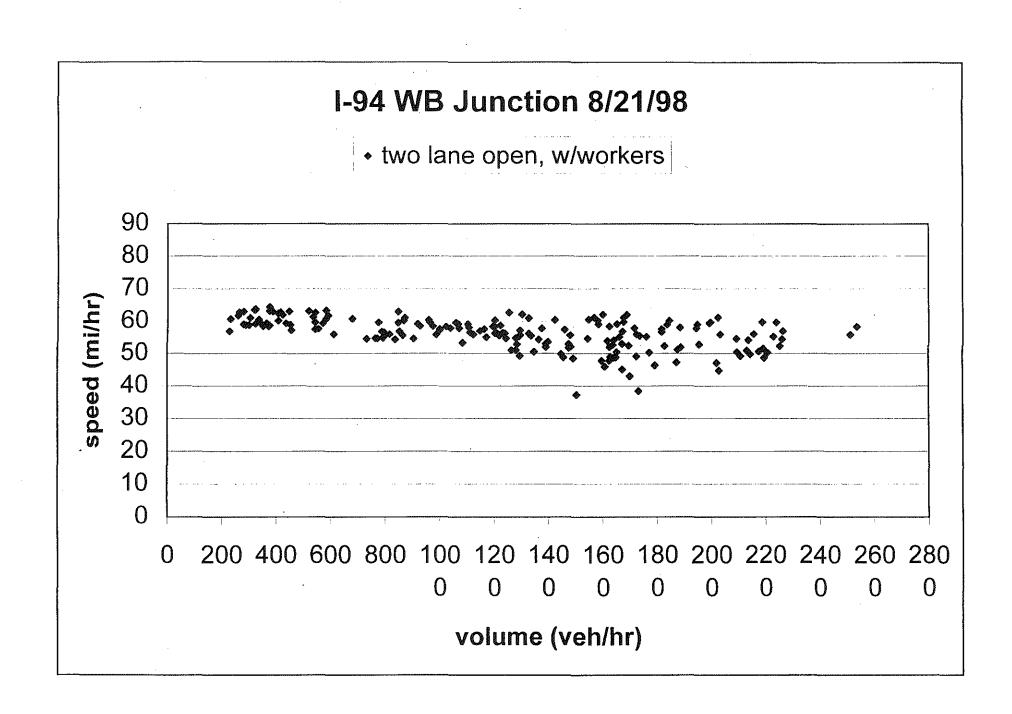
On a more positive note, the delay model does provide consistent results and it is relatively easy to track the effects of changing the values of the input parameters. This is also a function of its simplicity. (Simplicity refers to the root operating structure of the model and not necessarily to the "instructions" and the array of worksheets it produces.) That is, if alternative scenarios are being compared, the potential errors in queue length or delay time predictions will be consistent across alternatives. The model will perform better in this situation (alternatives analysis) since what is desired knowledge about *relative* differences between alternatives and not *absolute* values.

APPENDIX A

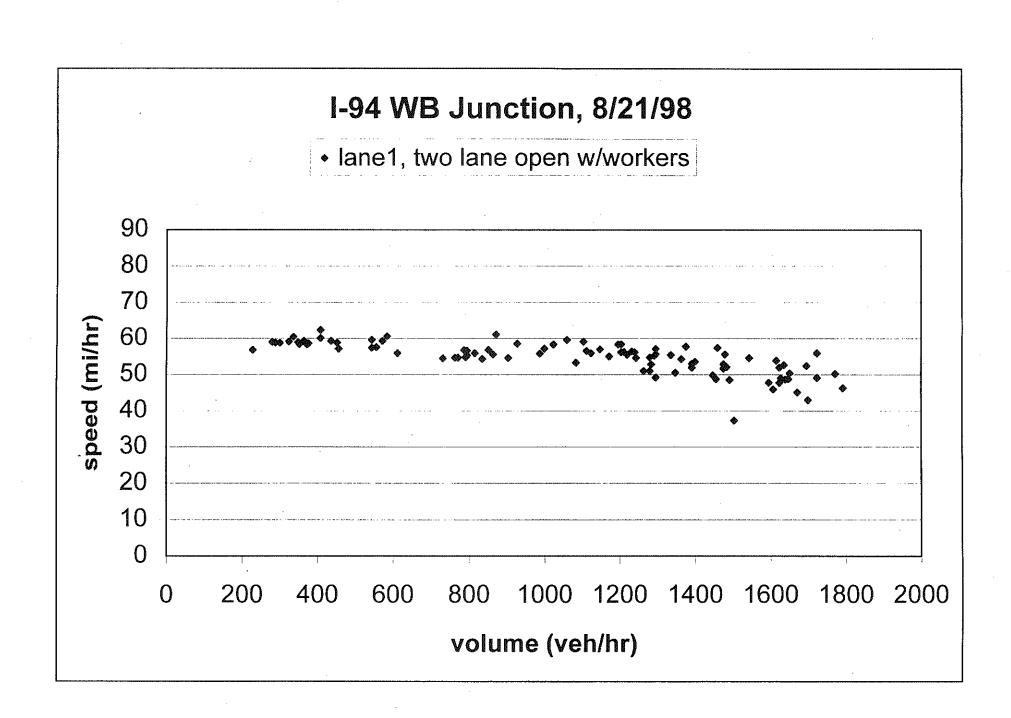
Examples of Speed vs. Volume Graphs

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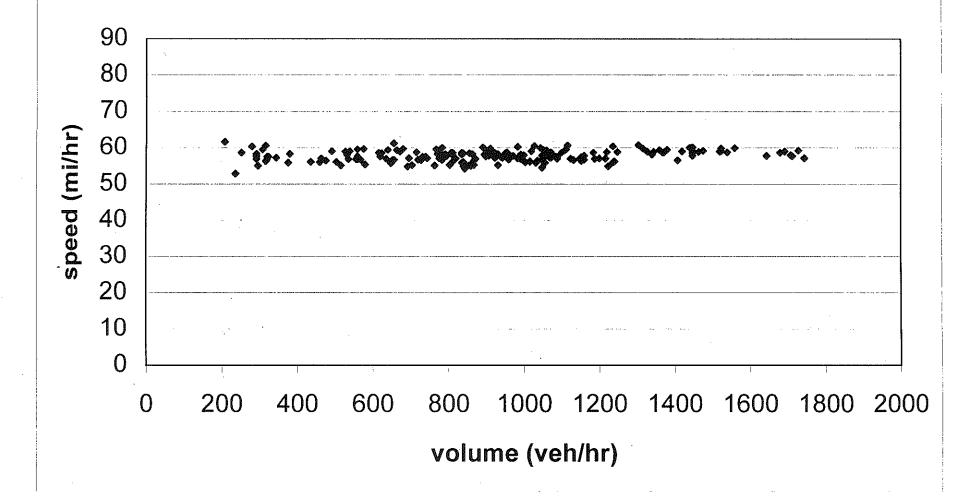


"了我们的你们,你们还没有这些你的?""你们,你们们们,你们还没有我们就是你想到你的话,我都是你的你的,你们,你们不是你的你?""我们,你们,我们们们,你们,你是你能能是我你做。"

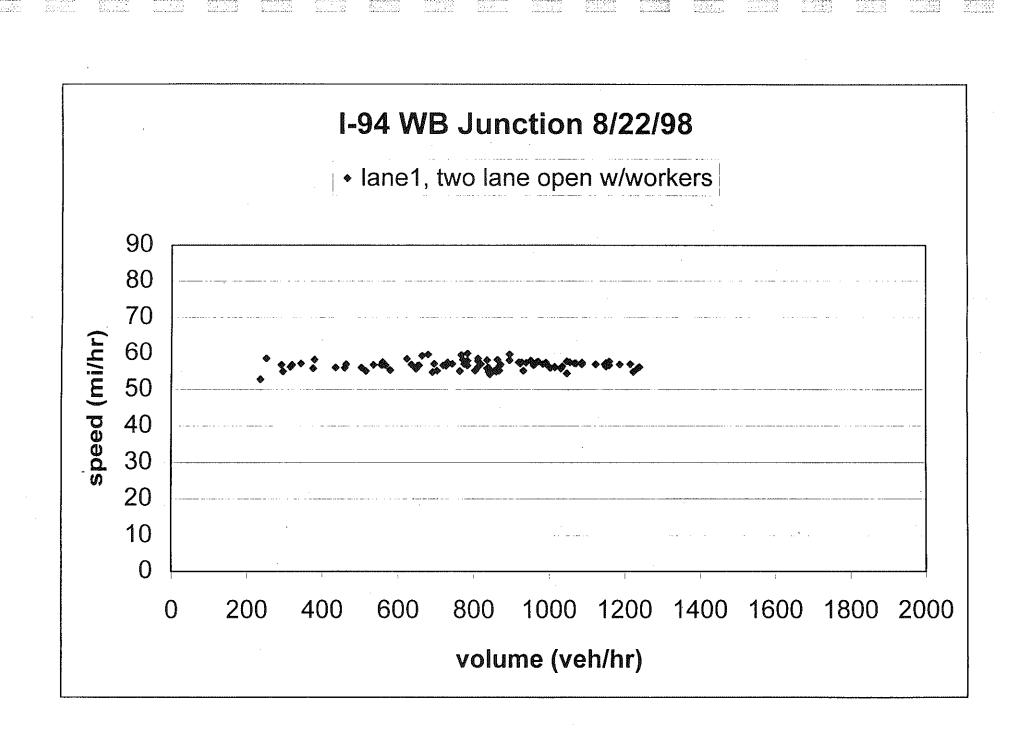


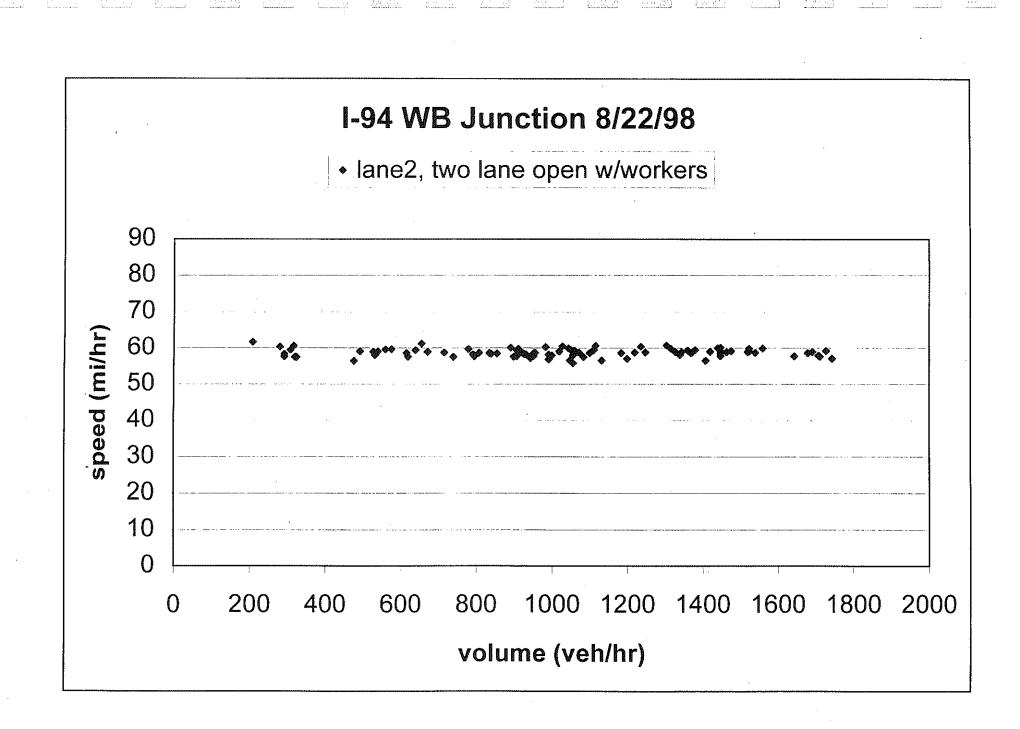
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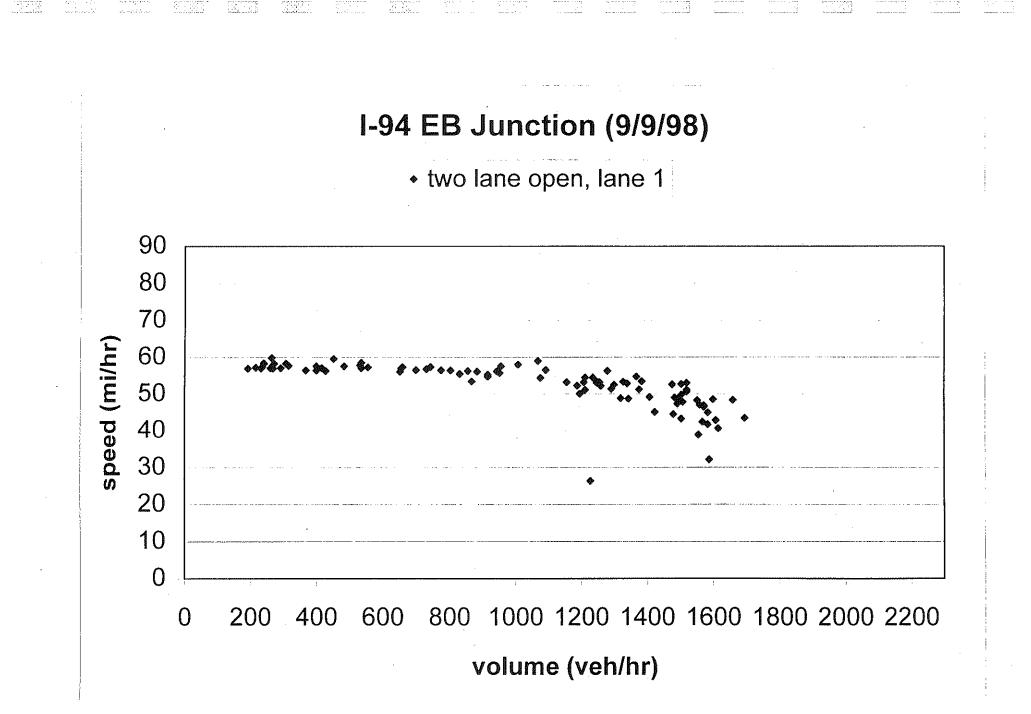
two lane open, worker present

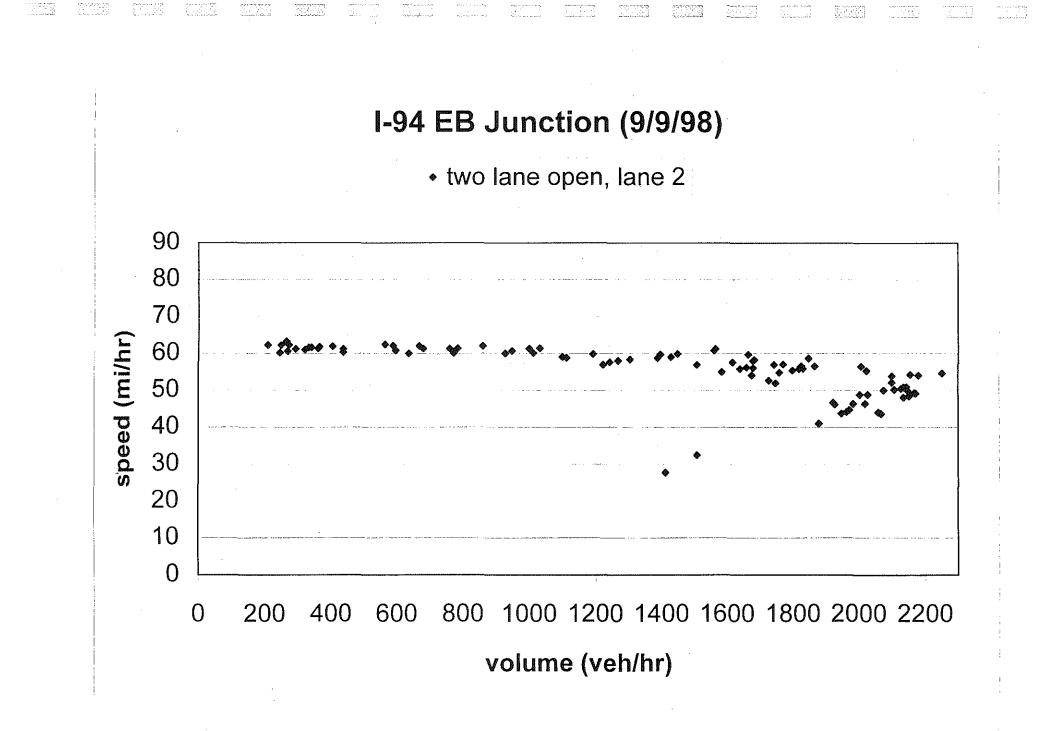


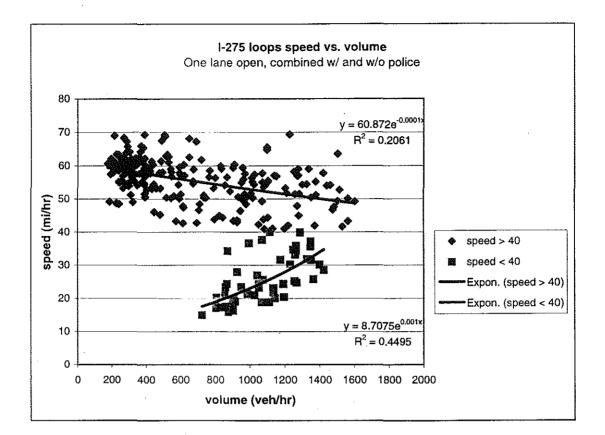
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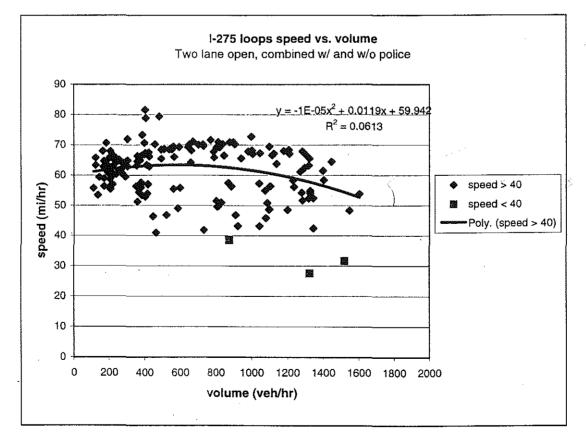


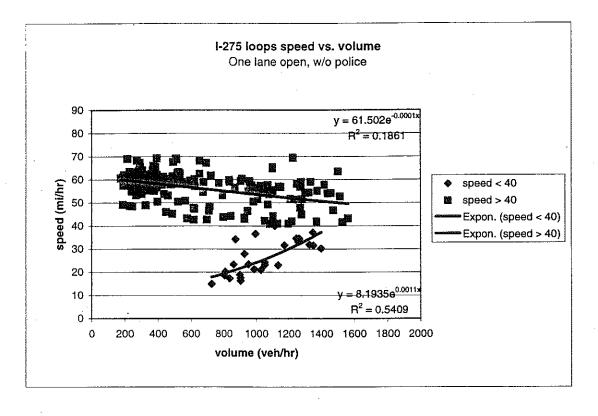


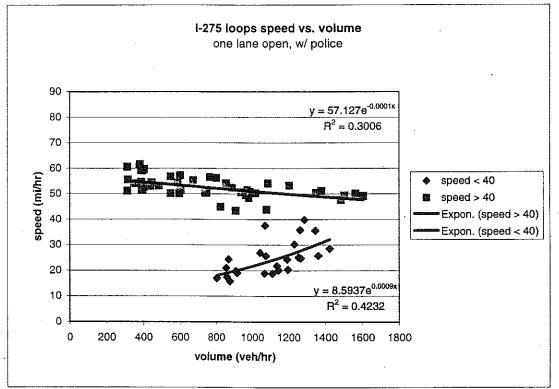


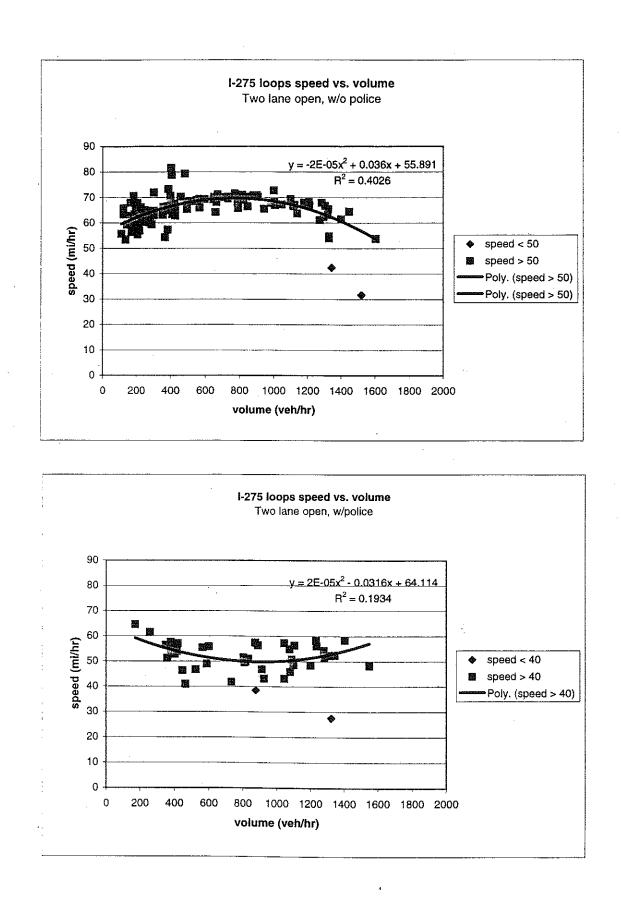


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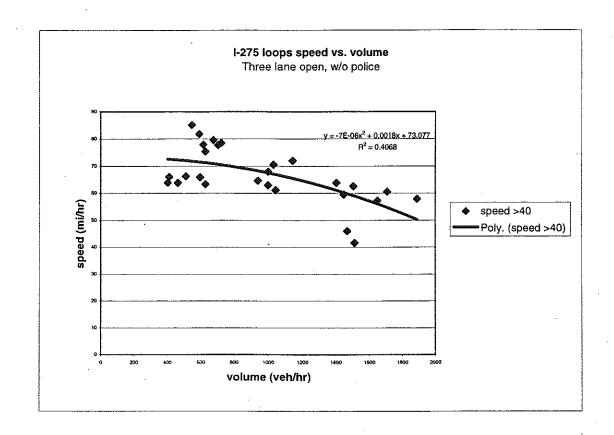




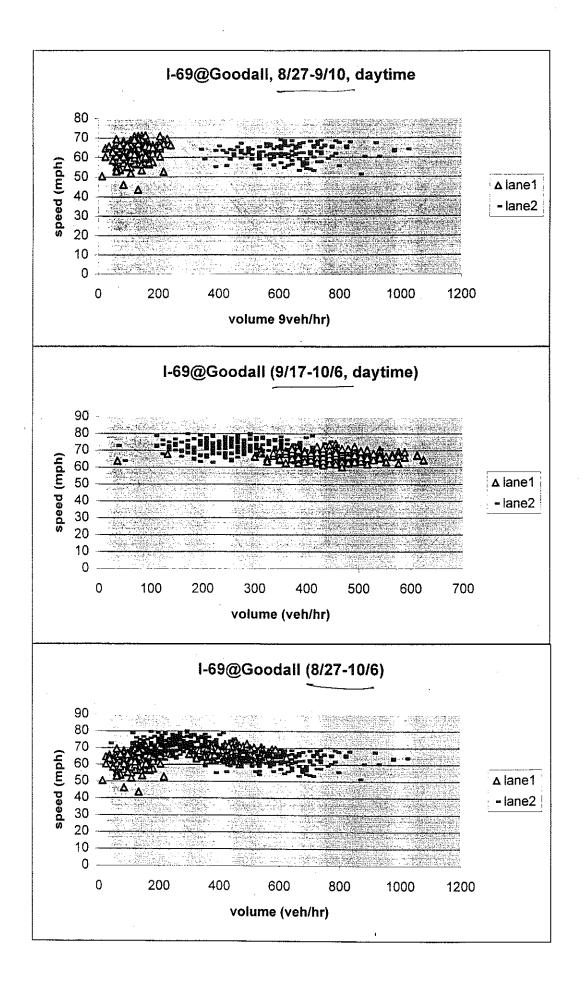
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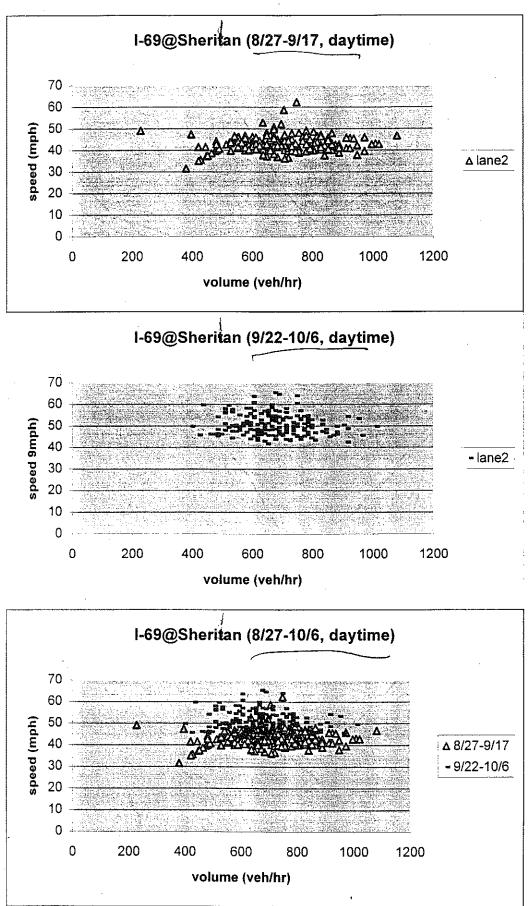
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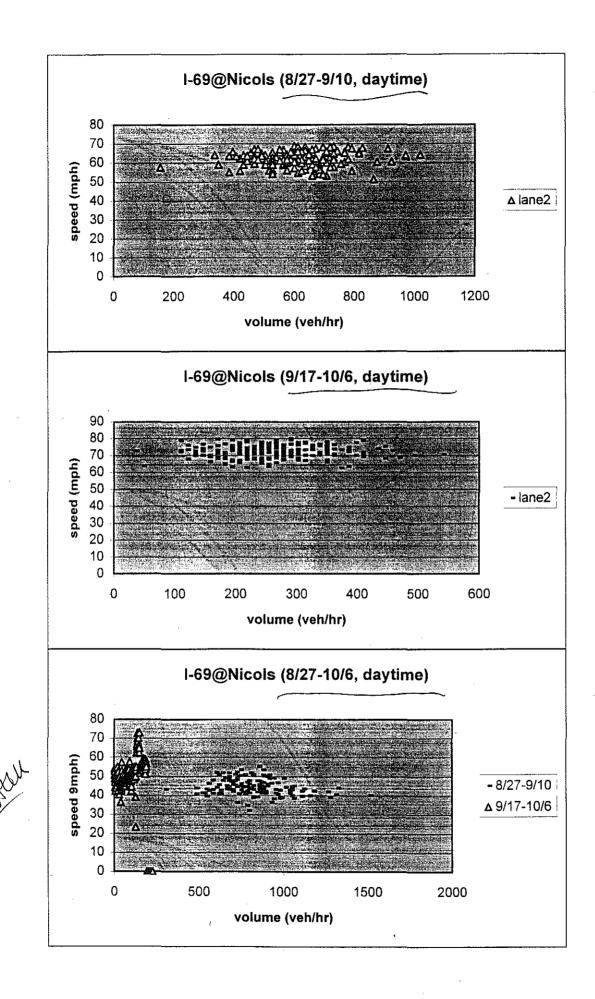
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APPENDIX B

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Summary of Delay Model Outputs

delay model-draft final report

page B-1

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us127.xls traffic

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				al user cost	\$3,676	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$3,434	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0
			user cost of maximum	backup (V)	\$243 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0
		maximum I	backup leng		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
			maximum	delay (min.)	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			except diver		11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	t		al vehicles		()	0	0	0	0	0	0	0
			ai venicies : tai vehicies :	• •	243	0	0	0	0	0	0	0
			decrease in		243	. 0	0	0	0	0	0	0
			% decrease			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			r diverted v			0.0	0.0	0.0	0.0	0.0	0.0	0.0
	avaran		al diversion luding diver	• • •		0	0.0	0.0	0.0	0.0	0.0	0.0
			luding diver			0.0	0.0	0,0	0.0	0.0	0.0	0.0
	1014											
······	1014	USÉ	r cost / des ay cost / act	gn demand	\$0,29	\$0.00 \$0.00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00 \$0.00	\$0.00

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1.4

us127.xls traffic

			ength (min)	60		PROJECT IN	FORMATION	ł	the second se		FORMATION	CONTRACTOR OF TAXABLE
	ari		growth (%)	5.00%		WZ DELAY	+ 1417 to reference and an area in the second and a second				USER COST	REPOR
			s of growth	0	TITLE				TITLE	SUMMARY		
V	EHICLE INPL		cans	trucks		C.S.				DIVISION	1	
		iemand (%)		25.0%		JOB #				REPORT BY	:	
	er cost per h		<u> </u>	\$10.79 \$1.00	NOTES:	TARTUATE	1				<u> </u>	
	r cost per m t per cancelli			\$1.00	NOTES:			U	S-127NB@I-	40		
user cos			A	32.00	L							
	M	ETHOD INP				HOD 1	MET	IOD 2	MET	IOD 3	METH	HOD 4
	DISTANCE /			nethod title (mi) (mph)	10-1 distance	2PM speed	distance	speed	distance	speed	distance	spe
	DISTANCE	work zone		thod travel	0.5	spear	UISLAIJCE	SPEEL	UISTANCO	see delay	Giatance	see d
		WOIK 20116		mai travel	0.5	70.0				·····	 	
		diversion		thod travel							.	
		0		ormai travel	l							
	S	PEED DELA	<u>لم</u>		threshold	range	threshold	range	threshold	range	threshold	ran
	c	capacity for	speed delay	(V/period)	1000							
		sp	beed (when	D-0) (mph)	45							
			peed (when	D=C) (mph)	5							
		EASE TÔ DE			threshold	range	threshold	range	threshold	range	threshold	ran
capa	city for decre				1000							
			cars (with no		1.0%						 	
			icks (with no						L		l	
			ars (with del		1.0%	├					·	
	Ca		cars (with del			├			┝───┤		 	
			icks (with no			├					 	
			ars (with del								 	
	đ		ks (with del									
071			_ ,	,,,,		· · · · · ·			L		ا سیسی ا	
UTHER	USER COST		ar setural -	mand /#A/T	cars to oo	trucks	cars to co	trucks	cars to oo	trucks	cars	truc
	other	•	per actual de cost per dive		\$0.00	\$0.00 \$0.00	\$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.0
		0881 0	ust per aive	usinit (9/A)	30.00	\$0.00	\$0,00	20.00		\$0,00	\$0.00	\$0.u
											l I	
									1		1	
P	ERIOD INPU	T	backup	at start (V)	0	0	0	0	0	0	0	0
rection:	NB	Ì	NB		NB							
period	historical	demand	design	demand	cap	acity	cap	city	capi	acity	capa	acity
(hr)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/per
12 A	119		119	0	1000							
1 A	72		72	0	1000							
2 A	75		75	0	1000							
3 A	78		78	0	1000						í — — — — — — — — — — — — — — — — — — —	
4 A 5 A	104	·	104	0	1000						l	
5A 6A	333 993		993	0	1000						l	
7A	942		942	0	1000		ļ				 	
8 A	800		800	Ċ	1000		<u> </u>					
9 A C	713		713	0	1000						1	
10 A	682		682	Û	1000							
11 A	700		700	0	1000							
12 P			655	0	1000							
4	655								·····			
1 P	683		683	0	1000							
2 P	683 885		885	0	1000 1000							
2 P 3 P	683 885 941		885 941	0	1000 1000 1000							
2 P 3 P 4 P	683 885 941 648		885 941 648	0	1000 1000 1000 1000							
2 P 3 P 4 P 5 P	683 885 941 648 1012		885 941 648 1012	0 0 0 0	1000 1000 1000 1000 1000							
2 P 3 P 4 P 5 P 6 P	683 885 941 648 1012 654		885 941 648 1012 654	0 0 0 0 0	1000 1000 1000 1000 1000 1000							
2 P 3 P 4 P 5 P	683 885 941 648 1012		885 941 648 1012	0 0 0 0	1000 1000 1000 1000 1000							
2 P 3 P 4 P 5 P 6 P 7 P	683 885 941 648 1012 654 433		885 941 648 1012 654 433	0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000							
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P	683 885 941 648 1012 654 433 374 441 321		885 941 648 1012 654 433 374 441 321	0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100							
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P	683 885 941 648 1012 654 433 374 441		885 941 648 1012 654 433 374 441 321 185	0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100							
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185	0	885 941 648 1012 654 433 374 441 321 185 12843	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	0	0	0		0		0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321		885 941 648 1012 654 433 374 441 321 185 12843	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	0 hr		0		0		0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185		885 941 648 1012 654 433 374 441 321 185 12843 trat	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr	NB		NB		NB	
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185		885 941 648 1012 654 433 374 441 321 185 12843 trai	C O O O O O O O O O O O O O O O O O O O	1000 1000 1000 1000 1000 1000 1000 100	hr \$0	NB \$0	\$0	NB \$0	\$0	NB \$0	\$0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185	PUT	885 941 648 1012 654 433 374 441 321 185 12843 trat tota user con	0 0 0 0 0 0 0 0 0 flc method direction al user cost	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0	NB \$0 \$0	\$0 \$0	NB \$0 \$0	\$0 \$0	NB \$0 \$0	\$0 \$0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185	PUT	885 941 648 1012 654 433 374 441 321 185 12843 trat tott user cost of	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MARY OUT	PUT	885 941 648 1012 654 433 374 444 321 185 12843 trat tota user cost of maximum	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MARY OUT	PUT u	885 941 648 1012 654 433 374 441 321 185 12843 trai tota user cost of maximum backup leng	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0.0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185	PUT u maximum k	885 941 648 1012 654 433 374 444 321 185 12843 trat tota user cost of maximum	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0	\$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0	\$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0	\$0 \$0 \$0 0.0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e	885 941 648 1012 654 433 374 441 321 185 12843 trai user cost of maximum backup leng maximum Co	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0.0 0.0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e stal delay, e	885 941 648 1012 654 433 374 441 321 185 12843 trat tota user cost of maximum backup leng backup leng backup leng backup leng backup leng	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 \$0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0 0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0	NB \$0 \$0 \$0 0 0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e otal delay, e tota	885 941 648 1012 654 433 374 444 321 185 12843 trat tota tota user cost of maximum backup leng maximum backup leng maximum backup leng	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0 0.0 0.0 0.0 0.0	\$0 \$0 0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0 0.0 0.0 0.0 0.0	\$0 \$0 0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0 0 0.0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e otal delay, e tota tota total c	885 941 648 1012 654 433 374 374 321 185 12843 trai tota user cost of maximum maximum maximum cost of maximum maximum cost of maximum ai vehicles of decrease in o	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0 0.0 0.0 0.0 0.0 0.0 0 0	NB \$0 \$0 0 0 0.0 0.0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0.0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0 0	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e stal delay, e tot total total c	885 941 648 1012 654 433 374 444 321 185 12843 trat tota tota tota tota tota tota tota	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0 0 0.0 0.0 0 0 0 0 0	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0	NB \$0 \$0 0 0 0.0 0.0 0.0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUT	PUT maximum k age delay, e tal delay, e total total c delay pe	885 941 648 1012 654 433 374 441 321 185 12843 trat tota user cost of maximum backup leng maximum backup leng maximum backup leng tota user cost of maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng maximum backup leng tota backup leng maximum backup leng backup leng maximum backup leng backup leng b	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0	\$0 \$0 0 0 0.0 0.0 0 0 0 0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MARY OUT	PUT maximum k age delay, e otal delay, e total delay, e total c delay pe tota	885 941 648 1012 654 433 374 441 321 185 12843 trai tota user cost of maximum backup leng maximum backup leng maximum backup leng sxcept divers al vehicles of decrease in o % decrease in o % decrease in o	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 \$0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUTI	PUT maximum k age delay, e total delay, e total total c total c delay pe tota e delay, incl	885 941 648 1012 654 433 374 441 321 185 12843 trai user cost of maximum maximum cost of maximum maximum cost of maximum maximum cost of maximum cost of cost of maximum cost of cost	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0 0.0 0.0 0.0 0 0 0 0 0.0% 0.0 0.0 0.0 0.0% 0.0 0.0	\$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUTI	PUT maximum k age delay, e otal delay, e total total c delay pe tota e delay, incl i delay, incl	885 941 648 1012 654 433 374 441 321 185 12843 trat tota tota tota tota tota tota tota	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0	0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2 P 3 P 4 P 5 P 6 P 7 P 8 P 9 P 10 P 11 P Total	683 885 941 648 1012 654 433 374 441 321 185 MMARY OUTI	PUT maximum k age delay, e otal delay, e total co total co delay pe tota e delay, incl use	885 941 648 1012 654 433 374 441 321 185 12843 trai user cost of maximum maximum cost of maximum maximum cost of maximum maximum cost of maximum cost of cost of maximum cost of cost	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 1000 100	hr \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0 0.0 0.0 0.0 0 0 0 0 0.0% 0.0 0.0 0.0 0.0% 0.0 0.0	\$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

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		period (e	ength (min)	60		PROJECT IN	FORMATION	٩			ORMATION	
	a	vnual traffic	growth (%)	5.00%	PROJECT	WZ DELAY				DETAILED		REPOR
		yean	s of growth	0	TITLE	[r		TITLE	SUMMARY	SHEET	
V	EHICLE INP		cars	trucks		C.S.				DIVISION		
1164		temand (%) our (\$/V hr)	75.0%	25.0% \$10.79	s.	JOB #	ł			REPORT BY	1	
	ir cost per m		\$0.30	\$1.00	NOTES:		L	U	S-127NB@I-			
	t per cancell		\$1.00	\$2.00				_				
	M	ETHOD INPL	JT		METI	HOD 1	METH	IOD 2	METH	HOD 3	METH	HOD 4
				nethod title	10-1	2PM						
	DISTANCE.	AND SPEED		(mi) (mph)		speed	distance	speed	distance	speed	distance	spee
		work zone		thod travel	0.5	see delay 70.0		see delay	 	see delay.		**** de
		diversion		thod travel	0,0	70.0						
				rmal travel								
		PEED DELA	Y		threshold	range	threshold	range	threshold	range	threshold	rang
		capacity for									ļ	
		-	eed (when eed (when	D~0) (mph) D=C) (moh)	39 15					<u> </u>		
	DECR	EASE TO DE			threshold	range	threshold	range	threshold	range	threshold	rang
capa		eases to des		l (V/period)	1000			-9-				
				delay) (%)	1.0%							
		canceled tru			1.0%						 	
		canceled ca inceled truc	•		1.0%						 	
			ars (with no									
		diverted tru	cks (with no	delay) (%)								
				ay) (%/min)					L			L
		liverted truc	ks (with del	ay) (%/min)		1	L					t
OTHER	USER COS				cars	trucks	cars	trucks	cars	trucks	cars	truci
	othei	user cost p		mand (\$/V) rsion (\$/V)	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0,00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00	\$0.0 \$0.0
		0901 C			#0.00	40.00		30.00	40.00	#0.00	40.00	1 90.01
					1							
					ļ		<u> </u>		ļ <u>.</u>		<u> </u>	-
F rection:	PERIOD INPL	н Г – – – – –	backup NB	at start (V)	0 NB	0	0	0	0	0	0	0
period		i demand	=	demand		acity	Capi	acity	Cap	acity	Cab	acity
(hr)		(V/period)		(V/period)		(V/period)				(V/period)	(V/period)	
12 A	119		119	0	1000				<u> </u>			
1 A	72		72	0	1000							ļ
2 A 3 A	75 78		- 75 78	0	1000						ļ	
4 A	104		104	0	1000							
5 A	333		333	0	1000							
6 A	993		993	0	1000							
7 A	942		942	0	1000	ļ						<u> </u>
8 A 9 A	800 713		800	0	1000							
10 A	682		682	0	1000							
11 A	700		700	0	1000							
12 P	655		655	0	1000							
1 P 2 P	683 885		683 885	0	1000							
3 P	941		941	0	1000	1		<u> </u>				
4 P	848		648	0	1000							
5 P	1012		1012	0	1000					ļ		
6 P 7 P	654 433		654 433	0	1000					<u> </u>		<u> </u>
8 P	374		374	0	1000							<u> </u>
9 P	441		441	0	1000							
10 P	321		321	0	1000	ļ						
11 P Total	185	0	185 12843	0	1000 24000	0	0	0	· 0	0	0	
	MARY OUT			fric method.		u Ihr			⊩		`	г – °
				direction	NB		NB		NB		NB	
				il user cost	\$2,520	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				t of delays	\$2,325	\$0 \$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0
		<u> </u>	iser cost of	decreases backup (V)	\$195 0	\$0 0	\$0 0	\$0 0	\$0	\$0 0	\$0 0	\$0 0
		maximum b			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum (1.6	0.0	0.0	0.0	0.0	0.0	0,0	0.0
		aga delay, e			1.0	0.0	0.0	0.0	0.0	0,0	0.0	0.0
	t	otal dalay, e			215	0	0	0	0	0	0	0
			al vehicles o al vehicles (- 195 - 0	0	0	0	0	0	0	0
			al venicles (lecrease in)		195	0	0	0	0	0		0
•				in demand	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		delay pe	diverted v	hicle (min)	0.0	0,0	0.0	0.0	0.0	0.0	0,0	0.0
				delay (V hr)		. 0	0	0	0	0	0	0
		e delay, incl I delay, incl			1.0 215	0.0 0	0.0	0.0	0.0	0,0	0.0	0.0 0
	1010			gn demand		\$0.00	0	0 \$0.00	0	0 \$0.00	0 \$0.00	\$0.00
						,						
				ual demand	\$0,18	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

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			ength (min) growth (%)	60 5.00%		PROJECT IN	FORMATION	1			FORMATION	
	ลก		s of growth	5.00% 0	TITLE	WZ DELAY				SUMMARY		REFUR
VI	EHICLE INPL		cars	trucks		C.S.	-			DIVISION		
		emand (%)	75.0%	25.0%		JOB #				EPORT BY		
	er cost per ha er cost per mi		\$10.79 \$0.30	\$10,79 \$1.00	NOTES:	TART DATE	[S-127NB(0)-1	PORT DATE	L	
	t per cancella		\$1.00	\$2.00	NOTES:			, ,	0-12/10/09-1			
	· · · · · · · · · · · · · · · · · · ·	THOD INP				IOD 1	METH	100.1	METH	00.3	METH	
	Mt	THOD INP		nethod title		2PM	MEIF	100 2	ME()	100 3	MEIF	1004
	DISTANCE A	ND SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spea
		work zone		thod travel	0.5	see delay		see delay		see delay		800 di
		diversion		thod travel	0.5	70.0						
		CIVEISION		rmai travel								
	S	PEED DELA			threshold	range	threshold	range	threshold	range	threshold	rang
	C		speed delay		1000							
		•	eed (when	,	39							
	DECRE	ASE TO DE	Deed (when	u=c) (mpn)	10 threshold	range	threshold	range	threshold	range	threshold	rang
capad	city for decre			t (V/period)	1000	lange		. ungo				
			ars (with no		1.0%							
			icks (with no		4.71		<u> </u>					
			ars (with del :ks (with del		1.0%					· · ·		
			ars (with no		l							
		diverted tru	icks (with no	delay) (%)								
			ars (with del									
			ks (with del	ay) (%/min)					L	L		
OTHER	USER COST				cars	trucks	cars	trucks	Cars	trucks	cars	truc
	other		per actual de cost per dive		\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.0
		4901 6						40.00				
		-			L							
P rection:	VERIOD INPU	T	NB	at start (V)	0 NB	0	0	0	0	0	0	0
period	historical	demand		demand	i	acity	capa	acity	cap	acity	Сари	acity
(hr)	(V/period)					(V/period)		(V/period)	(V/period)		(V/period)	(V/per
12 A	119		119	0	1000	•						
1 A	72		72	0	1000							Ļ,
2 A 3 A	75 78		75 78	0	1000		 		 		 	
4 A	104		104	0	1000							
5 A	333		333	0	1000							
6 A	993		993	0	1000							
7 A 8 A	942 800		942 800	0	1000			· · · ·				
9 A	713		713	0	1000						 	-
10 A	682	·······	682	0	1000							
11 A	700		700	0	1000							
12 P 1 P	655 683		655 683	0	1000		<u> </u>					
2 P	885		885	0	1000						 	• • •
3 P	941		941	0	1000							
4 P	648		648	0	1000							
5 P 6 P	1012 654		1012 654	0	1000							
7 P	433		433	0	1000	1]					
8 P	374		374	0	1000							<u> </u>
	441 321		441	0	1000	ļ						
9 P			· 321 185	0	1000							<u> </u>
9 P 10 P			1 .00	0	24000	0	0	0	0	0	0	0
9 P	185	0	12843						1)			
9 P 10 P 11 P Total				ffic method	24	hr			1		NB	
9 P 10 P 11 P Total	185		tra	ffic method direction	24 NB		NB		NB		A -	1 50
9 P 10 P 11 P Total	185		tra tot	flic method direction al user cost	24 NB \$3,784	\$0	NB \$0	\$0	\$0	\$0	\$0 \$0	<u> </u>
9 P 10 P 11 P Total	185	PUT	tra tot	ffic method direction al user cost at of delays	24 NB \$3,784 \$3,537	\$0 \$0	NB \$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0
9 P 10 P 11 P Total	185	PUT	tra tot: user co: user cost of	ffic method direction al user cost at of delays	24 NB \$3,784	\$0	NB \$0		\$0			<u> </u>
9 P 10 P 11 P Total	185 MMARY OUT	PUT	tra tot: user co user cost of maximum backup leng	ffic method direction al user cost st of delays decreases backup (V) th (lane mi)	24 NB \$3,784 \$3,537 \$247 0 0.0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 0 0.0	\$0 \$0 \$0 0 0,0	\$0 \$0 0 0.0	\$0 \$0 0.0	\$0 \$0 0 0.0
9 P 10 P 11 P Total	185 MMARY OUT	PUT maximum I	tra tot: user cost of maximum backup leng maximum	ffic method direction al user cost st of delays decreases backup (V) th (lane mi) delay (min.)	24 NB \$3,784 \$3,537 \$247 0 0.0 2.5	\$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0	\$0 \$0 0.0 0.0	\$0 \$0 \$0 0 0,0 0,0	\$0 \$0 0 0.0 0.0	\$0 \$0 0.0 0.0	\$0 \$0 0.0 0.0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, 4	tra user cost of maximum backup leng maximum except diver	ffic method direction al user cost st of delays decreases backup (V) th (lane mi) delay (min.) sions (min)	24 NB \$3,784 \$3,537 \$247 0 0.0 2.5 1.6	\$0 \$0 \$0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0	\$0 \$0 0,0 0,0 0,0	\$0 \$0 0,0 0,0 0,0 0,0	\$0 \$0 0.0 0.0 0.0	\$0 \$0 0.0 0.0 0.0	\$0 \$0 0.0 0.0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, o ntal delay, e	tra tot: user cost of maximum backup leng maximum	ffic method direction al user cost st of delays decreases backup (V) th (lane mi) delay (min.) sions (min) sions (V hr)	24 NB \$3,784 \$3,537 \$247 0 0.0 2.5	\$0 \$0 \$0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 0.0 0.0 0.0 0.0	\$0 \$0 0,0 0,0 0,0 0,0 0,0 0,0	\$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 0.0 0.0	\$0 \$0 0.0 0.0 0.0 0.0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, o ptal delay, e tot tot	tra tota user cost of maximum backup leng maximum except diver except diver except diver al vehicles	ffic method direction al user cost at of delays decreases backup (V) th (lane mi) delay (min.) sions (min) sions (V hr) canceled(V) diverted (V)	24 NB \$3,784 \$3,537 \$247 0 0.0 2.5 1.6 328 247 0	\$0 \$0 \$0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0	\$0 \$0 0,0 0,0 0,0	\$0 \$0 0,0 0,0 0,0 0,0	\$0 \$0 0.0 0.0 0.0	\$0 \$0 0.0 0.0 0.0 0.0 0	\$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0.0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, o ptal delay, e tot tot	tra tot. user cost of maximum backup leng maximum baccept diver except diver al vehicles d al vehicles a	ffic method direction al user cost st of delays decreases backup (V) th (lane mi) delay (min.) sions (min) sions (V hr) canceled (V) demand (V)	24 NB \$3,784 \$3,537 0 0.0 2.5 1.6 328 247 0 247	\$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, o ptał delay, e tot totał d	tra user cost of maximum backup leng maximum sccept diver sccept diver al vehicles tal vehicles decrease in % decrease	ffic method direction al user cost st of delays decreases backup (V) th (lane mi) delay (min.) sions (W hr) canceled(V) diverted (V) demand (V) in demand	24 NB \$3,784 \$3,537 \$247 0 0.0 2.5 1.6 328 247 0 247 1.9%	\$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0
9 P 10 P 11 P Total	185 MMARY OUTI	PUT maximum I age delay, c ptał delay, e tot totał c delay pe	tra user co- user cost of maximum backup leng maximum accept diver al vehicles decrease in % decrease r diverted v	ffic method direction al user cost at of delays to f delays backup (V) th (lane mi) delay (min.) sions (W hr) canceled(V) diverted (V) demand (V) in demand ehicle (min)	24 NB \$3,764 \$3,537 \$247 0 0.0 2.5 1.6 328 247 0 247 0.247 1.9% 0.0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0,0 0,0 0,0 0,0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.(0.(0.(0.(0.0) 0.0 0.0 0.0(0.0)
9 P 10 P 11 P Total	185 MARY OUTI avera	PUT maximum I age delay, e tot totai delay, e totai delay pe tota e delay, inc	tra user cost of maximum backup leng maximum except diver except diver	ffic method direction al user cost at of delays tof delays backup (V) th (lane mi) delay (min.) sions (V hr) sions (V hr) in demand bhicle (min) delay (V hr) sions (W hr) sions (min)	24 NB \$3,784 \$3,537 0 0.0 2.5 1.6 328 247 0 247 0 247 0.0 0.0 0 0	\$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.(0.(0.(0.(0.0) 0.0 0.0 0.0 0.0 0.0 0.0
9 P 10 P 11 P Total	185 MARY OUTI avera	PUT maximum I age delay, e tot totai e totai delay pe tota e delay, incl delay, incl	tra tot: user cost of maximum backup leng maximum backup leng maximum backup leng maximum total vehicles tal vehicles decrease in % decrease r diverted v al diversion luding diver	ffic method direction al user cost st of delays backup (V) th (lane mi) delay (min.) sions (V hr) sanceled(V) diverted (V) in demand childe (min) delay (V hr) sions (V hr) sions (V hr)	24 NB \$3,764 \$3,537 \$247 0 0.0 2.5 1.6 328 247 0 247 1.9% 0.0 0 0 1.6 328	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.6 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0,0 0,0 0,0 0,0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0.0 0.0 0
9 P 10 P 11 P Total	185 MARY OUTI avera	PUT maximum I age delay, e totai delay, e totai delay pe tota delay, incl i delay, incl use	tra user cost of maximum backup leng maximum except diver except diver	ffic method direction al user cost at of delays st of delays backup (V) th (lane mi) delay (min.) sions (V hr) canceled(V) diverted (V) in demand dehicle (min) delay (V hr) sions (V hr) gn demand	24 NB \$3,764 \$3,537 \$247 0 0.0 2.6 1.6 328 247 0.0 247 1.9% 0.0 0 0 1.6 328	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0.0% 0.0 0.0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0.0 0 0.0% 0.0% 0.0 0.0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0.0 0 0.000000

2010年の1月1日の日本 かんし

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		period l	ength (min)	60		PROJECT IN	FORMATION	4	· · · · · ·	REPORT IN	FORMATION	
	ann	ual traffic	growth (%)	5.00%		WZ DELAY				DETAILED	USER COST	
		уеал	e of growth	0	TITLE				TITLE	SUMMARY	SHEET	
VI	EHICLE INPUT		cars	trucks		C.S.				DIVISION	1	
	design de		75.0%	25.0%		JOB #				REPORT BY		
	er cost per hou	1 · · · · · · · · · · · · · · · · · · ·		\$10,79 \$1.00	NOTES:	TART DATE	i		S-127NB(0)-		L	
	r cost per mile t per cancellat		\$0.30 \$1.00	\$1.00	NUTES:			U	a-14/NB@I-	6-U		
				+	 	105 1		100 ÷		100.2		10P /
	MET	HOD INPI				HOD 1	METH	IOD 2	METI	HOD 3	METH	IOD 4
	DISTANCE	ID ODEED		nethod title (mi) (mph)		2PM	distance	أدعموها	distance	speed	distance	spee
	DISTANCE AN	ork zone		thod travel	0.5	speed see delay	uistance	speed see delay	useaute	soe delay	Giorance	260:00
	v	VIN 20118		ormal travel	0.5	70.0		9-10-10-10-10-10-10-10-10-10-10-10-10-10-				
		diversion		thod travel								
				ormal travel								
		ED DELA	Y		threshold	range	threshold	range	threshold	range	threshold	rang
	Ca		speed delay									
			eed (when I					ļ	L	ļ		_
	6758		beed (when I	u=C) (mph)	5		Allowed and a		three held	FREAM	threehold	F00-
		SE TO DE		1 (V/neriod)	threshold 1000	range	threshold	range	threshold	range	threshold	rang
capac	city for decrea		ars (with no		1.0%	<u> </u>						
			cars (with no icks (with no		1.074					·····		
			ars (with del		1.0%							
			ks (with del								 	
			ars (with no			<u> </u>						
			cks (with no									
	d	lverted ca	ars (with del	ay) (%/min)								
	div	erted truc	ks (with dei	ay) (%/min)								
OTHER	USER COST I	NPUT			cars	trucks	cars	trucks	Cars	trucks	cars	truck
			oer actual de	mand (\$/V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0,0
			ost per dive		\$0,00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.0
	,											
	CDIOD TUDUT		hacker	at etars AA	<u> </u>	·	<u> </u>		0	1 0	0	0
Pirection:	ERIOD INPUT		раскир NB	at start (V)	0 NB	0	0	0	- °	U U		U
period	historical d	amand	design	demand		acity		acity	Can	acity	Can	acity
(hr)	(V/period) ((V/period)	· · · ·	(V/period)		(V/period)	(V/period)	
12 A	119	.,period)	119	(Wperiod)	1000	(wponou)	(vipanoa)	(asharing)	(Tripariod)	(*********	(10.001
1A	72		72	0	1000				 			
2 A	75		75	0	1000	<u>├</u>		···			 	
3 A	78		78	0	1000					1		
4 A	104		104	0	1000			·				
5 A	333		333	0	1000					1		
6 A	993		993	0	1000							
7 A	942		942	0	1000							
8 A	800		800	0	1000	l	ļ		ļ			
9 A 10 A	713 682		713 682	0	1000	<u> </u>			┣━━━━	ļ		
11 A	700		700	0	1000							
12 P	655		655	0	1000					[
1 P	683		683	0	1000		[
2 P	885		885	0	1000							
3 P	941		941	0	1000	· ·						
4 P	648		648	0	1000							
5 P	1012		1012	0	1000						ļ	
6 P	654		654	0	1000							
7 P 8 P	433 374		433 374	0	1000							
98	441		441	0	1000							
10 P	321		321	.0	1000							
11 P	185		185	0	1000	l		· · · · · · · · · · · · · · · · · · ·				
Total	, <u>, , , , , , , , , , , , , , , , , , </u>	0	12843	0	24000	0	0	0	0	0	0	0
SUM	MARY OUTPL	IT	trai	ffic method	24	hr						
				direction	NB		NB		NB		NB	
				l user cost	\$7,353	\$0	\$ 0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$6,955	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of		\$397	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	_	avien		backup (V)	0	0	0	0	0	0	0	0
	n		maximum o		0.0	0.0	0.0	0.0	0,0	0.0	0.0	0.0
	averar		maximum o except diver		5.2	0.0	0.0	0,0 0.0	0.0	0.0	0.0	0.0
			xcept diven		645	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			al vehicles c		397	0	0	0	0	0	0	0
			al vehicles o			0	0	0	0 0	0	0	0
			lecrease in (397	0	0	ō	ō	0	0	ŏ
			% decrease	in demand	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.09
		delay ne	r diverted ve	hicle (min)		0,0	0.0	0.0	0.0	0.0	0.0	0.0
-							-					-
-		tota	diversion (0	0	0	0	0	0	0
		tota delay, incl	il diversion (luding diver	sions (min)	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		tota delay, incl lelay, incl	l diversion (luding diver uding diver	sions (min) sions (V hr)	3,1 645	0.0 0	0.0 0	0.0 0	0.0 0	0.0 0	0.0 0	0.0 0
		tota delay, inci lelay, incl use	il diversion (luding diver	sions (min) sions (V hr) gn demand	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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			ength (min)	60			FORMATION		1		FORMATION	
	ar	nual traffic	growth (%) s of growth	5.00% 0	PROJECT	WZ DELAY				DETAILED SUMMARY	USER COST	REPOR
	EHICLE INPI		cars	trucks	mie	C.S.	Γ			DIVISION		
		temand (%)	75.0%	25.0%		JOB #]		R	EPORT BY	•	
US	er cost per h		\$10.79	\$10.79	S.	TART DATE			REP	ORT DATE		
	r cost per m		\$0.30	\$1.00	NOTES:			ប	S-127NB@I-9	96		
user cost	t per cancell	ation, (\$/V)	\$1.00	\$2.00							·····	
	M	ETHOD INPI	JT		METI	HOD 1	METH	IOD 2	METH	IOD 3	METH	IOD 4
				nethod title		2PM						
	DISTANCE	AND SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spec
		work zone		thod travel	0.5	see delay 70.0		see delay		see delay		200 24
		diversion		thod travel	0.5	70.0						
		0170101011		ormal travel								
	S	PEED DELA			threshold	range	threshold	range	threshold	range	threshold	ranç
			speed delay		1000							
		•	eed (when		34				· · ·			
	DEOR		beed (when i	D=C) (mph)	15				Abarahalal		threshold	
	city for decr	ASE TO DE		(Weerled)	threshold 1000	range	threshold	range	threshold	range	Intesnoid	rang
Capa	city for decr		ars (with no		1.0%				· · · · ·			
			cks (with no									
			ars (with del		1.0%							
	Ci		ks (with del									
			ars (with no						ļ		·	
			cks (with no ars (with dai									<u> </u>
			ins (with del				┣────┦					
					<u> </u>		<u></u>					
OTHER	USER COS		and godinated	mandifenti	Cars to oo	trucks	cars to co	trucks	cars \$0.00	trucks \$0,00	cars \$0.00	truc \$0.0
	other		er actual de ost per dive		\$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00	\$0.00	\$0.00	\$0.0
		4301 6			+0.00			+0.00		+0.04	l	
•												
	ERIOD INPL	T		at start (V)	0	0	0	0	0	0	0	0
irection:	NB	- 1	NB	4	NB							
period (hr)	historica (Vineriod)	(V/period)	design (V/period)	demand		acity (V/period)	capa (Woariod)	(V/period)	capi (V/pariod)	(V/period)		acity (V/ner
(hr) 12 A	(v/penida) 119	(whanon)	(v/panod) 119	(vipenou)	(v)penoa) 1000	(whallog)	(whourpd)	(whenen)	(whanod)	(subarrod)	(*iheitod)	(Athal
1.4	72		72	0	1000							
2 A	75		75	0	1000	·· ·						
3 A	78		78	0	1000							
4 A	104		104	0	1000							
5 A	333		333	0	1000							
6 A	993		993	0	1000						 	
7 A 8 A	942 800		942 800	0	1000						l	
9 A	713		713	0	1000			· · · ·				
10 A	682		682	Ő	1000		· · · · · · ·					
11 A	700		700	0	1000							
12 P	655		655	0	1000							
1 P	683		683	0	1000	ļ						
2 P 3 P	885 941		885 941	0	1000					<u> </u>		
4P	648		941 648	0	1000		· · · · ·					<u> </u>
5 P	1012		1012	ů O	1000							— —
6 P	654		654	0	1000							
7 P	433		433	0	1000							
8 P	374		374	0	1000							
9 P 10 P	441		441 321	0	1000							
11 P	185		185	0	1000						l	
Totai		0	12843	0	24000	0	0	0	0	0	0	0
	MARY OUT			ffic method		hr					1	
				direction	NB		NB		NB		NB	
				a user cost	\$2,638	\$0	\$0	\$O	\$D	\$0	\$0	\$0
				st of delays	\$2,438	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		l	user cost of	decreases backup (V)	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		maximum ł	maximum ackup leng		0,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		*	maximum o		1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ave		xcept diver	• • •	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			xcept diven		226	0	0	0	0.0	0	0	0
			al vehicles o		200	0	0	0	0	0	0	0
			al vehicles (0	0	0	0	0	0	0	0
		total c	lecrease in i		200	0	0	0	0	0	0	0
-		dala:		in demand		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
			r diverted ve I diversion		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	averad			sions (min)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
			uding diven		226	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				gn demand	\$0.21	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
		136	1 COST 1 GAST	go contano		90,00	\$0.00 I	40,00	φ0.00			
	Print: ON	dela	y cost / acti		\$0.19	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0

us127.xis traffic

 y_{i_1,\ldots,i_n} $\sum_{i=1}^{n-1} \left\{ \begin{array}{c} Y_{i} = 1 \\ Y_{i}$

			ength (min)	60			FORMATION	1			FORMATION	
	anr		growth (%) s of growth	5.00% 0	PROJECT	WZ DELAY				SUMMARY	USER COST	REPOR
v	EHICLE INPU		cars	trucks		IC.S.	<u> </u>	_	111LE	DIVISION		
		emand (%)	75.0%	25.0%		JOB #			F	REPORT BY		
បន	er cost per ho	· ·		\$10.79	s.	TART DATE				ORT DATE		
	er cost per mil			\$1.00	NOTES:			ប	S-127NB@I-	96		
user cos	t per cancella	tion, (\$/V)	\$1.00	\$2.00	í <u> </u>			_				
	ME	THOD INPI	JŤ		METI	HOD 1	METH	IOD 2	METH	IOD 3	METH	IOD 4
				nethod title	10-1	2PM						
	DISTANCE A			(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spee
		work zone		thod travel	0.5	see delay		802 delay		see delay		.see.ck
		م الم مراقع		ormal travel	0.5	70.0						ļ
		diversion		thod travel	I							<u> </u>
	SF	PEED DELA		111121 (1510)	threshold	range	threshold	range	threshold	range	threshold	rang
			speed dela	(V/period)	1000							<u> </u>
		sp	eed (when	D~0) (mph)	34							
			eed (when	D=C) (mph)	10							
		ASE TO DE			threshold	rang e	threshold	range	threshold	range	threshold	rang
capa	city for decrea				1000							
			ars (with no		1.0%		L					<u> </u>
			cks (with no		1.0%							
			ks (with del									<u> </u>
			ars (with no									
		liverted tru	cks (with no	delay) (%)		1						
			rs (with del									
	di	verted truc	ks (with del	ay) (%/min)								l
OTHER	USER COST	INPUT			Cars	trucks	cars	trucks	cars	trucks	cars	truc
	other		er actual de		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
	, ,	user c	ost per dive	rsion (\$/V)	\$0,00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.0
	PERIOD INPUT	r	раскир	at start (V)	0	1 0	- 0	0	0	0	0	0
ection:	NB	·	NB		NB							<u>_</u>
period	historical	demand	design	demand	cap	acity	capa	city	cap	acity	сар	acity
(hr)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/pari
12 A	119		119	0 -	1000							
<u>1 A</u>	72		72	0	1000			_				L
2 A	75		75	0	1000	· ·						Ĺ
3 A	78		78	0	1000							
4 A 5 A	104		104 333	0	1000		[_	
5 A 6 A	993		993	0	1000	<u>├</u> ──						
7 A	942		942	0	1000		[<u> </u>
8 A	800		800	0	1000	j d						
9 A	713		713	0	1000							
10 A	682		682	0	1000							
11 A	700		700	0	1000							
12 P	655		655	0	1000					 _	ļ	
1 P 2 P	683 885		583 885	0	1000	<u> </u>	┠────┤		 	i		<u> </u>
3 P	941		941	0	1000		├	_				
49	648		541 648	0	1000							
5 P	1012		1012	0	1000	 	i					<u> </u>
	1 054				1000							
6 P	654	i	654	0	1000							
7 P	433		433	0	1000 1000							
7 P 8 P	433 374		433 374	0	1000 1000 1000							
7 P 8 P 9 P	433 374 441		433 374 441	0 0 0	1000 1000 1000 1000				·			
7 P 8 P 9 P 10 P	433 374 441 321		433 374 441 321	0 0 0	1000 1000 1000 1000 1000			······································				· · · · · · · · · · · · · · · · · · ·
7 P 8 P 9 P 10 P 11 P	433 374 441	0	433 374 441 321 185	0 0 0	1000 1000 1000 1000 1000 1000	0				0		
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185	_	433 374 441 321 185 12843	0 0 0 0 0	1000 1000 1000 1000 1000 1000 24000	0 hr		0	0	0	0	0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321	_	433 374 441 321 185 12843	0 0 0 0	1000 1000 1000 1000 1000 1000 24000	0 hr	0	0	0 NB	0.	0 NB	0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185	_	433 374 441 321 185 12843 tra	0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 1000 24000 24000	_		0		0		0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185	_	433 374 441 321 185 12843 tra tota	0 0 0 0 0 ffic method direction	1000 1000 1000 1000 1000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000	hr	NB		NB	\$0 \$0	NB	\$0 \$0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185	•UT	433 374 441 321 185 12843 tra tota user cost of	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 24000 24000 24000 24000 24000 243,902 \$3,650 \$252	hr \$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0	NB \$0 \$0 \$0	\$0 \$0 \$0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	יעד 	433 374 441 321 185 12843 tra tota user cost of maximum	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 24000 20000 2000000	\$0 \$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0 0	NB \$0 \$0 \$0 0	\$0 \$0 \$0 0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	neximum t	433 374 441 321 185 12843 tra tota user cost of maximum packup leng	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 1000 24000 24000 24000 24000 24000 245 \$3,902 \$3,650 \$252 \$0 0.0	hr \$0 \$0 \$0 0 0	NB \$0 \$0 \$0 \$0 0 0	\$0 \$0 \$0 0 0.0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0,0	NB \$0 \$0 \$0 0 0.0	\$0 \$0 \$0 0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	NT	433 374 441 321 185 12843 tra tota user cod user cost of maximum ackup leng maximum	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1000 1000 1000 1000 24000 24000 24000 24000 24000 24000 2455 \$3,650 \$252 0 0.0 2.5	hr \$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0 0 0.0 0.0	\$0 \$0 \$0 0.0 0.0	NB \$0 \$0 \$0 0 0.0 0.0	\$0 \$0 \$0 0 0.0 0.0	NB \$0 \$0 \$0 0.0 0.0	\$0 \$0 \$0 0.0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	יעד maximum t	433 374 441 321 185 12843 tra tota user cost of maximum oackup leng backup leng backup leng backup leng	0 0 0 0 fic method direction al user cost tof delays decreases backup (V) th (lane mi) belay (min.) sions (min)	1000 1000 1000 1000 24000 24000 24000 23,650 \$252 0 0,0 2.5 1.6	hr \$0 \$0 0 0 0.0 0.0 0.0	NB \$0 \$0 0 0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0	NB \$0 \$0 0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0	NB \$0 \$0 \$0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	naximum t uge delay, e tal delay, e	433 374 441 321 185 12843 tra tota user cost of maximum maximum cost of liver xcept diver	0 0 0 0 0 ffic method direction al user cost it of delays decreases backup (V) th (lane mi) telay (min.) sions (V hr)	1000 1000 1000 1000 24000 24000 24000 23,650 \$3,650 \$252 0 0.0 2.5 1.6 338	hr \$0 \$0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0 0.0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	naximum t uge delay, e tal delay, e tot	433 374 441 321 185 12843 tra tota user cou user	0 0 0 0 0 ffic method direction al user cost to of delays decreases backup (V) th (lane mi) delay (min.) sions (W hr) canceled (V)	1000 1000 1000 1000 1000 2400 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000 2552 252 252 252 252 252 252 252 252	50 50 50 0.0 0.0 0.0 0.0 0.0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0.0 0 0	\$0 \$0 0 0.0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0 0 0	\$0 \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0 0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	ut maximum t uge delay, e tal delay, e tot tot	433 374 441 321 185 12843 tra tota user cost of maximum maximum cost of liver xcept diver	0 0 0 0 0 ffic method direction al user cost ist of delays decreases backup (V) th (lane mi) telay (min.) sions (V hr) sions (V hr) sions (V kr)	1000 1000 1000 1000 24000 24000 24000 23,650 \$3,650 \$252 0 0.0 2.5 1.6 338	hr \$0 \$0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 0 0.0 0.0 0.0 0.0 0.0	NB \$0 \$0 0 0.0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	tai delay, e tai delay, e tot totai co	433 374 441 321 185 12843 tra tota user cost of maximum sackup leng maximum sackup leng	0 0 0 0 0 fic method direction direction direction di user cost st of delays decreases backup (V) backup (V) distance (V) sions (V hr) canceled (V) demand (V)	1000 1000 1000 1000 24000 24000 24000 24000 24000 24000 2452 0 0.0 2.5 1.6 338 252 0 0 0.0 2.5 1.6 338 252 0 252	\$0 \$0 \$0 0.0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0.0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP	tai delay, e tai delay, e tai delay, e tot totai c	433 374 441 321 185 12843 tra tota user cost of maximum oackup leng maximum coscept diver al vehicles diver al vehicles a	0 0 0 0 0 fic method direction a user cost st of delays decreases backup (V) th (lane mi) sions (W hr) sanceled(V) diverted (V) in demand	1000 1000 1000 1000 24000 24000 24000 24000 24000 24000 2452 0 0.0 2.5 1.6 338 252 0 0 0.0 2.5 1.6 338 252 0 252	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0	\$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0	\$0 \$0 \$0 0.0 0.0 0 0.0 0 0 0 0 0 0 0 0 0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP r avera tot	tai delay, e tai delay, e tai delay, e tot totai c delay pel tota	433 374 441 321 185 12843 tra tota user cost of maximum sackup leng maximum sackup leng sati vehicles d sati vehic	0 0 0 0 0 ffic method direction al user cost ist of delays decreases backup (V) th (lane mi) telay (min.) sions (V hr) sions (V hr) diverted (V) diverted (V) demand (V): In demand (V): In demand bhicle (min)	1000 1000 1000 1000 2400 24000 24000 2400 24000 2400 2400 2400 2400 2400 2400 2400 2400 200 2	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0 0,0 0,0 0,0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0 0.0%	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP average	ut maximum L tige delay, e tal delay, e totai delay, totai c delay pei tota delay, incl	433 374 441 321 185 12843 tra tota user cost of maximum oackup leng maximum coscept diven al vehicles o decrease r diverted ve decrease r diverted ve diversion o uding diver	0 0 0 0 0 ffic method direction al user cost st of delays decreases backup (V) backup (V) backup (V) backup (V) backup (V) backup (V) backup (V) backup (V) banceled(V) lemand (V) in demand oblicie (min) sions (min)	1000 1000 1000 1000 24000 24000 24000 24000 24000 245 53,650 5252 0 0.0 2.5 1.6 338 252 0 255 2.0% 0.0 0 0 0 1.6	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0.0% 0 0 0 0.0% 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0.0% 0.0 0 0.0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0.0% 0.0 0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 9 0.0 9 0.0 9 0.0 9 0.0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP average	tai delay, e tai delay, e tai delay, e tot totai c delay pe tota delay, incl	433 374 441 321 185 12843 tra tota user cost of maximum oackup leng backup leng totakup leng tot	0 0 0 0 0 filc method direction al user cost st of delays decreases backup (V) th (lane mi) sions (whr) sions (V hr) anceled(V) diverted (V) in demand obicle (min) delay (V hr) sions (W hr) sions (V hr)	1000 1000 1000 1000 24000 24000 24000 24000 24000 2452 0 0.0 2.5 1.6 338 252 0 252 2.0% 0.0 0.0 2.5 1.6 338	kr \$0 \$0 \$0 \$0 0	NB \$0 \$0 \$0 \$0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0.0% 0.0 0 0.0 0.0	\$0 \$0 \$0 0.0 0.0 0 0.0 0 0 0 0 0 0 0 0 0
7 P 8 P 9 P 10 P 11 P Total	433 374 441 321 185 MMARY OUTP average	tai delay, e tai delay, e tai delay, e totai c delay per tota delay, inci delay, inci delay, inci use	433 374 441 321 185 12843 tra tota user cost of maximum oackup leng maximum coscept diven al vehicles o decrease r diverted ve decrease r diverted ve diversion o uding diver	0 0 0 0 0 fic method direction al user cost it of delays decreases backup (V) th (lane mi) sions (V hr) sanceled(V) diverted (V) in demand whicle (min) delay (V hr) sions (W hr) sions (W hr) sions (W hr)	1000 1000 1000 1000 24000 24000 24000 24000 24000 245 53,650 5252 0 0.0 2.5 1.6 338 252 0 255 2.0% 0.0 0 0 0 1.6	\$0 \$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0.0% 0 0 0 0.0% 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0.0% 0.0 0 0.0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0 \$0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0	NB \$0 \$0 0 0.0 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0.0% 0.0 0 0.0	\$0 \$0 \$0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 9 0.0 9 0.0 9 0.0 9

us127.xls traffic

1:01 PM 1/18/99

		•	angth (min)	60			FORMATION	4			FORMATION	
	ar	nual traffic	growth (%) s of growth	5.00% 0	PROJECT	WZ DELAY				DETAILED	USER COST	REPORT
v	EHICLE INPL		cars	trucks		C.S.	1			DIVISION		
		emand (%)	75.0%	25.0%	l	JOB #				REPORT BY		
	er cost per h			\$10,79		TART DATE			[]	PORT DATE	<u> </u>	. <u> </u>
	r cost per m t per cancell		\$0.30 \$1.00	\$1.00 \$2.00	NOTES:			U	S-127NB@I-1	96		
1307 008				42.00		100.1		100.0				00.4
	M	ETHOD INPL		nethod title		100 1 2PM	METH	10D 2	MEI	IOD 3	MEIF	HOD 4
	DISTANCE	AND SPEED		(mi) (mph)	-	speed	distance	speed	distance	speed	distance	spee
·····	***	work zone	ភាទ	thod travel	0.5	see delay		ses delay		see delay		200.00
				rmal travel	0.5	70.0						
		diversion		thod travel	╏		L					
	s	PEED DELA			threshold	range	threshold	range	threshold	range	threshold	rang
		apacity for			1000							
			eed (when		34				ļ			ļ
		SP SASE TO DE	eed (when I	D≃C) (mph)	5 threshold	range	threshold	range	threshold	range	threshold	range
capad	city for decre			(V/period)	1000	Tange	unesitora	sango	tindanoid	Tango	unounoid	
			ars (with no		1.0%							
		anceled tru										
		canceled ca inceled truc			1.0%						[
	51		ars (with no									
		diverted tru	cks (with no	delay) (%)								
			urs (with del		ļ						[]	
		iverted truc	Ko (With del	ay) (%/min)	ļ		L		<u> </u>		<u></u>	
OTHER	USER COST	User cost p	or actual de	mand (PAA	cars \$0.00	trucks \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	truck \$0.00
	outer	•	er actual de ost per dive		\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
p	ERIOD INPU	T	backup	at start (V)		0	0	0	0	0		0
irection:	NB		NB		NB		<u> </u>		<u> </u>			
period	historica			demand		acity	capi	acity	capa	acity		acity
(hr)		(V/period)			and search a	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/perio
12 A 1 A	119 72		119 72	0	1000							
2 A	75		75	0	1000							
3 A	78		78	0	1000							
4 A	104		104	0	1000							
5 A 6 A	333 993		333 993	0	1000							
7A	942		942	ŏ	1000							
8 A	800		B00	0	1000							
9 A	713 682		713 682	0	1000							
10 A 11 A	700		700	0	1000							
12 P	655		655	0	1000							
1 P	683		683	0	1000							ļ
2 P 3 P	885 941		885 941	0	1000				 			
4 P	648		648	0	1000							
5 P	. 1012		1012	0	1000							
6 P 7 P	654 433		654 433	0	1000		 		_			
8 P	374		374	0	1000					•		<u> </u>
9 P	441		441	0	1000							
10 P 11 P	321 185		321 185	0	1000							
Total	100	Ó	12843	0	1000 24000	0	0	0	0	0	—	0
	MARY OUT			fic method		hr	ب آ	-			<u> </u>	Ē
		· · · ·		direction	NB		NB		NB		NB	
				i user cost	\$7,471	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0
			user cost of	it of delays: decreases	\$7,069 \$402	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
			maximum	backup (V)	0	0	0	0	0	0	0	0
			ackup leng		0.0	0,0	0.0	0,0	0.0	0.0	0.0	0.0
	aver	age delay, e	maximum diver		5.2 3.2	0,0	0.0	0.0	0,0	0.0	0.0	0.0
		aye delay, e stal delay, e				0.0	0.0	0.0	0.0 0	0.0 0	0.0 0	0.0
			ni vehicies c		402	0	0	ō	0	0	0	0
			al vehicles (•••	0	0	0	D	0	0	0	0
-			lecrease in (% decrease		402	0.0%	0	0	0	0	0	0
			r diverted ve			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		tota	I diversion	delay (V hr)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		e delay, incl				0.0	0.0	0.0	0.0	0.0	0.0	0.0
	tota	i delay, incl	uding diven r cost / desi		655	0	0	0	0	0	0	0
			r cost / desi y cost / actu		\$0.58 \$0.57	\$0.00 \$0.00	\$0.00	\$0.00	\$0.00	\$0.00 \$0,00	\$0.00 \$0.00	\$0.00
	Print: ON	Now: OF										ຸ່ພາ.ບບ

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		•	ength (min)	60			FORMATION	4			FORMATION	
	ลกก		growth (%)	5.00%		WZ DELAY			REPORT	DETAILED	USER COST	REPORT
	EHICLE INPUT		s of growth	0	TITLE	C.S.	r		TITLE	SUMMARY DIVISION	SHEEL	
V	design de		cars 75.0%	trucks 25.0%		JOB #			.	REPORT BY		
118	er cost per hos			\$10,79	s	JOB #	l			ORTDATE	1	
	er cost per mile		\$0,30	\$1.00	NOTES:			U	S-127NB@I-I	96		
	t per cancellat		\$1.00	\$2.00								
	ME	THOD INPL	17		SUETS	HOD 1	METH	IOD 2	METH	IOD 3	METH	IOD 4
	mic	INCO NYF (nethod title		2PM						
	DISTANCE A	VD SPEED		(mi) (mph)		speed	distance	speed	distance	speed	distance	speed
	v	vork zone	me	thod travel	0.5	see delay		see delay		see delay		BROCH
				rmai travel	0.6	70.0						
		diversion		thod travel								
				rmai travel		_			threshold		threshold	range
		EED DELA	speed delay	(Vineriod)	threshold 900	range	threshold	range	THESHOLD	range	unesitoio	141194
			eed (when		45	·						
			eed (when I		15							
	DECREA	SE TO DE	MAND		threshold	range	threshold	range	threshold	range	threshold	range
сара	city for decrea				900							
			ars (with no		1.0%		ļ					
			cks (with no		4.0%						,	
			irs (with del ks (with del		1.0%		 					
	can		ars (with no				 		 			.
	di		cks (with no		I		 		<u> </u>			
			irs (with del		₿ ── ──	 !			<u>├</u> ────			
			ks (with del		[Ľ					
OTHER	USER COST	NPUT			cars	trucks	cars	trucks	сага	trucks	Cars	truck
01025			er actual de	mand (\$/V)	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.00
			ost per dive			\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.00
*												
							L					
	PERIOD INPUT			at start (V)	0	0	0	0	0	0	0	0
rection:	NB	lamend	NB	lamond	NB		 	city	cap	ecity		-
period (hr)	historical c		design (V/period)			acity (V/period)		city (V/pariod)	Capi (V/period)		capi (V/period)	
12 A	119	*iheuon)	(V/penou) 119	(v/penoa) 0	(V/penod) 900	(whenod)	(vibenod)	(athemory)	(vipanod)	(viperiod)	(sipanod)	(ashour
12A 1A	72		72	0	900							
2 A	75		75	0	900				<u>├──</u> ───			
- 3 A -	78		78	0	900							·······
4 A	104		104	0	900							
5 A	333		333	0	900							
6 A	993		993	0	900							
<u>7 A</u>	942]	942	0	900		L				L	
8 A 9 A	800 713		800 713	0	900		<u> </u>	<u> </u>				
10 A	682		682	0	900	<u> </u>]	<u> </u>					
11 A	700		700	0	900	<u> </u>]		· · · · · · · · · · · · · · · · · · ·	<u> </u>	·		
12 P	655		655	0	900	-,	h				<u> </u>	
1 P	683		683	Ö	900							
2 P	885		885	0	900							
3 P	941		941	0	900	1						
49	648		648	0	900		 					<u>.</u>
5 P 6 P	1012 654		1012 654	0	900		 	<u> </u>			·	<u> </u>
78	433		433	0	900	┝────┥	┣					
BP	374		374	0	900	├ ────┤	 -					
9 P	441		441	0	900							
10 P	321		321	0	900							
11 P	185]	185	0	900		1					
Totai		0	12843	0	21600	0	0	0	0	0	0	Ó
SUI	MARY OUTP	U 1	tra	fic method		hr		L				
	·		*~*	direction	NB		NB		NB \$0		NB \$0	\$0
	·····			t of delays	\$4,496	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0
		,	iser cost of		\$278	\$0 \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0
		· · · · · · · · · · · · · · · · · · ·		backup (V)	74	0	0	0	0	- 0	0	0
	n	aximum b	ackup leng		0.4	0,0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum o		6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			xcept diven		1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	tot		xcept diver	- market and the second se	it	0	0	0	0	0	0	0
			al vehicles c	• •	278	0	0	0	0	0	0	0
			al vehicles (0	0	0	0	0	0	0	0
			iecrease in (0	0	0	0	0	0	0
	····•		% decrease		-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			r diverted ve I diversion e		0.0	0,0 0	0.0	0.0	0.0	0.0	0.0	0.0
	average -		uding diven		1.9	0.0	0.0	0	0.0	0.0	0,0	0.0
			uding diver		391	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			r cost / desi		\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Print: ON	dela	y cost / actu	al demand	\$0.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

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			ength (min)	60			FORMATIO	1		REPORT IN		
	a i	nnual traffic vear	growth (%) s of growth	5.00% 0	PROJECT TITLE	WZ DELAY				DETAILED		REPORT
Vi	EHICLE INP		cans	trucks		C.S.	l .			DIVISION	T	
		lemand (%)	75.0%	25.0%		JOB #				REPORT BY		
	ir cost per h r cost per m	•. •		\$10.79 \$1.00	S' NOTES:	TART DATE	1		REF S-127NB@I-	PORT DATE	<u>I</u>	
	r cost per m per cancell			\$1.00	AUTES:			U:	- TATINDUI-			
		ETHOD INP			NET	HOD 1		IOD 2	ИСТ	HOD 3	ИСТІ	HOD 4
	M	E I NOU INP	the second s	nethod title		100 1	MEI!		MC31		2015-18	,004
	DISTANCE	AND SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	speed
		work zone		thod travel	0,5	see delay		100 delay		see delay		309 del
		diversion		ormai travel thod travel	0.5	70.0						
		01401010		onnai traveli					·			<u> </u>
		PEED DELA			threshold	range	threshold	range	threshold	range	threshold	range
			speed dela		900	[[
		•	beed (when beed (when		45 10	[
	DECR	EASE TO DE		0-07 (mpn)	threshold	range	threshold	range	threshold	галде	threshold	range
capac	ity for decr		sign deman		900							
			cars (with no		1.0%		L		 	ļ		
			icks (with no ars (with del		1.0%						- · · · · · · · · · · · · · · · · · · ·	
			ks (with del									
			cars (with no									
			icks (with no ars (with del								<u> </u>	
	c		ans (with dei :ks (with dei				<u> </u>					
OTHER	USER COS			, ,	cars	trucks	cars	trucks	Сала	trucks	cars	truck
VINER			oer actual de	mand (\$/V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			ost per dive			\$0.00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00
*		_			·							
	•											
P	ERIOD INPL	т	backup	at start (V)	0	0	0	0	0	0	0	0
direction:	NB		NB		NB							
period		demand		demand		acity		acity		acity	the second se	acity
(hr) 12 A	(V/period) 119	(V/period)	(V/period) 119	(V/period) 0	(V/period) 900	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(у/репс
1A	72		72	0	900		<u> </u>	—————				<u> </u>
2 A	75		75	0	900							
3 A	78		78	0	900							
4 A 5 A	104 333		104 333	0	900 900						_	
6 A	993		993	0	900							
7 A	842		942	0	900							
8 A 9 A	800 713		800 713	0	900 900							ļ
10 A	682		682	0	900							
11 A	700		700	0	900							
12 P	655		655	0	900							
1 P 2 P	683 885		683 885	0	900 900				L		J	┣────
3 P	941		941	0	900							
4 P	648		648	0	900							
5 P 6 P	1012 654		1012 654	0	900 900	ļ					ļ	
7 P	433		433	0	900							<u> </u>
8 P	374		374	0	900							
9 P	441		441	0	900	L	L					ļ
10 P 11 P	185		321 185	0	900 900					[
Total		0	12843	0	21600	0	0	0	0	0	0	0
SUN	MARY OUT	PUT	វេង	ffic method	1	l hr						
				direction al user cost	NB \$5,738	\$0	NB \$0	#n	NB	- E0	NB \$0	\$0
				it user cost st of delays	\$5,409	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0
			user cost of		\$330	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
				backup (V)	68	0	0	0	0	0	Ö	0
		maximum	maximum		0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ave	age delay.	maximum (axcept diver		7.1	0.0	0.0	0.0	0.0	0,0 0.0	0.0	0.0
			xcept diven		501	0.0	0.0	0,0	0.0	0.0	0.0	0.0
		tot	al vehicles d	anceled(V)	330	0	0	0	0	0	0	0
			tal vehicles (• •	0	0	0	0	0	0	0	0
		10141 (decrease in % decrease		330	0.0%	0	0.0%	0.0%	0.0%	0.0%	0.0%
		delay pe	r diverted v		0.0	0.0%	0.0	0.0%	0.0%	0.0%	0.0 %	0.0%
		tota	al diversion	delay (V hr)	0	0	0	0	0	0	0	0
			luding diver		2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	tota		luding diver	. ,	501 \$0.45	0	0	0	0	0	0 \$0.00	0 \$0.00
		[] % 4	1 COSt / Cases									
			er cost / desi ay cost / act	-		\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00	\$0.00

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		period l	ength (min)	60		PROJECT IN	FORMATION	1			FORMATION	
	алл		growth (%)	5.00%		WZ DELAY					USER COST	REPOR
	EHICLE INPUT		s of growth	0 tauaka	TITLE	C.S.			TILE	DIVISION	SHEET	
V2	design de		care 75.0%	trucks 25.0%		JOB #		:	F F	EPORT BY		
U86	r cost per hou			\$10.79	S'	TART DATE	l			ORT DATE	I	
	r cost per mile		\$0.30	\$1.00	NOTES:		-	U	S-127NB@I-	96		
	per cancellati		\$1.00	\$2.00								
	MET	HOD INPL	JT		MET	HOD 1	METH	IOD 2	METH	IOD 3	METH	IOD 4
			п	nethod title	10-1	2PM						
	DISTANCE AN	ID SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spe
	N	/ork zone		thod travel	0.5	see delay		see delay		see delay		199
				rmai travel	0.5	70.0					ļ	
	+	diversion		thod travel							j	
	SPI				threshold	range	threshold	range	threshold	range	threshold	ran
			speed delay	(V/period)	900	. unge		range				
			eed (when		45							
			eed (when I	D=C) (mph)	5							
		SE TO DE			threshold	range	threshold	range	threshold	range	threshold	ranę
capac	ity for decrea				900 1.0%							
			ars (with no cks (with no		1.0%							
			cics (with del		1.0%						·····	····
			ks (with del			· · · · · ·						
			ars (with no									
			cks (with no									
			urs (with del									
			ks (with del	ay) (%/min)	L	L	L		L			
OTHER	USER COST I				cars	trucks	cars	trucks	cars	trucks	cars	truc
	other u		er actual de		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0,0 \$0,0
•		userc	ost per dive	uerou (*/A)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	30.0
	ERIOD INPUT			at start (V)	0	Û	0	0	0	0	0	0
rection;	NB		NÐ		NB							L
period	historical d		design (acity		acity	· · · · · · · · · · · · · · · · · · ·	acity	-	acity
(hr) 12 A	(V/period) (1 119	v/period)	(V/period) 119	/	(V/period) 900	(V/period)	(v/penod)	(V/period)	(v/period)	(V/period)	(V/period)	
12 A 1 A	72		72	0	900	+···· ·· ·· ··	·					
2 A	75		75	0	900	<u> </u>	 i	l	ļ			
3 A	78		78	0	900							
4 A	104		104	0	900		<u> </u>					
5 A	333		333	0	900							
6 A	993		993	0	900							
7 A 8 A	942 800		942 800	0	900 900							
9 A	713		713	0	900							
10 A	682		682	Ő	900							
11 A	700		700	0	900	†İ						
12 P	655		655	0	900							
1 P	683		683	0	900							
2 P 3 P	885		885	0	900						i	
3 P 4 P	941 648		941 648	0	900	<u>├</u>						
5P	1012		1012	0	900	<u>├</u>		· · · · · · ·				
6 P	654		654	0	900	<u> </u>						
7 P	433		433	0	900							
8 P	374		374	0	900							
9 P 10 P	441 321		441	0	900			 				
10 P 11 P	321 185		321 185	0	900			<u> </u>				· · · ·
Total		0	12843	0	21600	0	0	0	0	0	0	0
	MARY OUTPI			fic method.		thr .				-		
				direction	NB		NB		NB		ŇB	
	5 Mar 14 Mar 1			il user cost	\$9,338	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				t of delays	\$8,855	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of		\$483	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		aximum -	maximum backup lengi	backup (V) th /lane mi)	50 0,3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EQT		maximum o		8,9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	averag		xcept diven		4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			xcept divers		821	0.0	0.0	0.0	0.0	0	0	0
			al vehicles d		483	0	0	0	0	0	0	0
			al vehicles o		0	0	0	0	0	0	0	0
			tecrease in «		483	0	0	0	0	0	0	0
•			% decrease			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
			r diverted ve diversion o		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	aversoe		luding diver		4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			uding diven		821	0.0	0.0	0.0	0,0	0.0	0.0	0.0
			r cost / desi		\$0.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
	Print: ON	dela Now: OI	y cost / actu	al demand	\$0.72	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0

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		•	ength (min)	60		PROJECT IN	FORMATION	4			FORMATION	
	. 80		growth (%)	5.00% 0		WZ DELAY			REPORT	DETAILED	USER COST	REPOR
	EHICLE INPL		s of growth cars	trucks	TITLE	C.S.	r		TITLE	DIVISION		
•		emand (%)	75.0%	25.0%		JOB #			F	REPORT BY	1	
	er cost per h	our (\$/V hr)		\$10.79	S.	TART DATE			REF	PORT DATE		
	er cost per m			\$1.00	NOTES:			U	S-127NB@I-	96		
iser cos	t per cancella	ation, (\$/V)	\$1.00	\$2.00	l					<u> </u>		
	M	ETHOD INP				HOD 1	METH	IOD 2	MET)	IOD 3	METH	HOD 4
	DISTANCE /			(mi) (mph)		2PM speed	distance	speed	distance	speed	distance	506
	DISTANCE	work zone		thod travel	0.5	speed	CIPIGUES	speed	GISCAILCO	speed	uistanco	ese d
				ormai travel	0.5	70.0		Same Station in the				
		diversion		thod travel								
	e	PEED DELA		ormai travel	threshold		threshold		threshold	range	threshold	ran
			speed dela	(V/period)	900	range	(IR 65HOID	range	unsanoid	Failige	MA CONCIO	1 10011
	-		eed (when		39							
			beed (when	D=C) (mph)	15							
	DECRE city for decre	ASE TO DE		1 (Maariad)	threshold 900	range	threshold	range	threshold	range	threshold	rang
capa	city for users		ars (with no		1.0%							
	c		cks (with no									
			ars (with del		1.0%							
	Câ		ks (with del									
			cars (with no icks (with no		┣				 			
			ars (with del								 	
	d		ks (with del									
OTHER	USER COST	INPUT			cars	trucks	cars	trucks	cars	trucks	cars	truc
		user cost p	oer actual de		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
		user c	ost per dive	rsion (\$/V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
-												
									1			
	PERIOD INPU	т		at start (V)	0	0	0	0	0	0	0	0
ection:	NB		NB	1	NB							<u> </u>
period (hr)	historical (V/period)			demand (V/period)		acity (V/period)	Capa (V/period)	acity (V/period)		(V/period)	Capi (V/period)	acity V/ner
12 A	(v/period) 119	(viperiou)	(V/pariod) 119	(vipenod)	(V/penod) 900	(Arbettod)	(wheilod)	(Athenoo)	(arbattod)	(whettoo)	(4/001100)	1 (a) bai
1 A	72		72	0	900							
2 A	75		75	0	900							
3 A	78		78	. 0	900						ļ	ļ
4 A 5 A	104 333		104 333	0	900							
6 A	993		993	0	900							
7 A	942	• • •	942	0	900							
8 A	800		800	0	900							
9 A 10 A	713 682		713 682	0	900 900							
11 A	700		700	Ő	900							
12 P	655		655	0	900							
1 P	683		683	0	900						· · · ·	
2 P 3 P	885 941		885 941	0	900							
4P	648		648	0	900							<u> </u>
5 P	1012		1012	0	900	<u> </u>				· · · · ·		
6 P	654		654	0	900							
7 P 8 P	433 374		433 374	0	900						 	<u> </u>
9 P	441		441	0	900	· · · ·						
10 P	321		321	0	900							
11 P	185		185	0	900							
Total	I MMARY OUT	0 PUT	12843 tra	0 Ific method	21600	0 I hr	0		0	.0	0	0
000				direction	NB 24		NB		NB	L	NB	
				i user cost	\$4,578	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$4,297	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of	decreases backup (V)	\$281 74	\$0 0	\$0 0	\$0 0	\$0	\$0	\$0	\$0 0
		maximum t	naximum ackup leng		0.4	0,0	0.0	0.0	0.0	0.0	0. 0.0	0.0
			maximum	lelay (min.)	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			except diver		1.9	0.0	0.0	0.0	0.0	0.0	0,0	0.0
	ta		xcept diven		398	0	0	0	0	0	0	0
			al vehicles (al vehicles (281	0	0	0	0	0	0	0
			iecrease in	• •	281	0	0	0	0	0	0	
·			% decrease	in demand	2.2%	0.0%	0.0%	0.0%	0.0%	0,0%	0,0%	0.0
			r diverted ve	• •	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	averan		il diversion : luding diver		0	0.0	0.0	0.0	0.0	0.0	0	0
			uding diven		398	0.0	0.0	0.0	0,0	0.0	0.0	0.0
						-				-	1	_
			r cost / desi iy cost / acti		\$0.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0

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			ength (min)	60			FORMATIO	N			FORMATION	
	ann		growth (%)	6.00%		WZ DELAY				DETAILED SUMMARY	USER COST	REPOR
	EHICLE INPUT		s of growth cars	0 trucks	TITLE	LC.S.	1		TITLE	DIVISION	SHEET	
v	design de		75.0%	25.0%		JOB#			s ا	REPORT BY		
us	er cost per ho			\$10.79	S	TART DATE			1	PORT DATE		
	er cost per mil		\$0.30	\$1.00	NOTES:			U	S-127NB@I-	96	• • • •	
user cos	t per cancellat	ion, (\$/V)	\$1.00	\$2.00					_			
	ME	THOD INPI	IT		MET	HOD 1	METH	HOD 2	METH	100 3	METH	IOD 4
			and the second se	nethod title		2PM						
	DISTANCE A	ND SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spee
	٧	vork zone		thod travel	0,5	see delay		see delay		see delay		.see.de
				ormal travel	0.5	70.0						
		diversion		thod travel								
	92	EED DELA		ormai travel	threshold	range	threshold	range	threshold	range	threshold	rang
			speed delay	(V/period)	900	141198	Unganoid	FULLA C	direanore	Tungo		74119
			eed (when		39							
		sŗ	eed (when	D=C) (mph)	10							
		ASE TO DE			threshold	range	threshold	range	threshold	range	threshold	rang
сара	city for decrea				900	ļ			ļ			
			ars (with no cks (with no		1.0%					·		
			rs (with del		1.0%							
			ks (with dei	••••								
			ars (with no									
			cks (with no	.,							L	
			ars (with del						 		ļ	
			ks (with del	ay) (%/min)	L	l	l	L	L	ļ	L	L
OTHER	RUSER COST				cars	trucks	cars	trucks	cars	trucks	сала	truck
	other u		er actual de ost per dive		\$0,00 \$0,00	\$0.00	\$0,00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.0 \$0.0
*		user C	oar hat give	raiun (≱/¥)	10.00	1 \$0.00		1 40'00 ""	\$0.00		+0.00	40.0
	PERIOD INPUT	·		at start (V)	0	0	0	0	0	0	0	0
rection:	NB		NB		· NB	l		L		L		
period	historical o		design			acity		acity		acity		acity
(hr) 12 A	(V/period) (v/penod)	(V/period) 119	(V/period) 0	(V/period) 900	(V/period)	{v/period}	(V/period)	(V/period)	{viperiod}	(V/period)	(v/peri
12A 1A	72		72	0	900							
2A	75		75	0	900	<u> </u>		 				
3 A	78		78	0	900							
4 A	104		104	0	900	Í		<u> </u>				
5 A	333		333	0	900	1						
6 A	993		993	0	900							
7 A 8 A	942		942 800	0	900			<u> </u>				
9 A	713		713	0	900							
10 A	682		682	0	900							
11 A	700		700	0	900							
12 P	655		655	0	900							
1 P	683		683 995	0	900							
2 P 3 P	885 941		885 941	0	900 900	<u> </u>	∥	<u> </u>	l			
4 P	648		648	0	900	<u> </u>	l	<u> </u>				ļ
5 P	1012		1012	0	900		l · · · · ·		l			
6 P	654		654	0	900					·		
7 P	433		433	0	900		<u> </u>					
8 P 9 P	374 441		374	0	900	<u> </u>	l		ļ			
10 P	321		321	0	900		l	┣───				
11 P	185		185	0	900	1		<u> </u>				
Totai	1	0	12843	Ó	21600	0	0	0	0	1	0	0
SU	MMARY OUTP	UT	tra	ffic method		hr						
				direction	NB		NB		NB		NB	
				al user cost	\$5,820	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$5,487	\$0	\$0 50	\$0	\$0	\$0 \$0	<u>\$0</u>	\$0
			iser cost of	decreases backup (V)	\$333	\$0 0	\$0	\$0	\$0	\$0 0	<u>\$0</u>	\$0 0
	n	naximum H	naximum ackup leng		<u>68</u> 0.4	0.0	0.0	0.0	0.0	0	0.0	0.0
			maximum o		7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	avera	ge delay, e	except diver	sions (min)	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			xcept diven		509	0	0	0	0	0	0	Ç
	tot	tot	al vehicles o		333	0	0	0	0	0	0	0
	tol			title terms of the	0	0	0	0	0	0	0	0
	tot		al vehicles (• • •	355	0	0	L 0	0	0	0	0
	tot		lecrease in (demand (V)	333		0.09/	0.00	0.021	0.00/	0.027	0.00
	tot	total c	lecresse in (% decrease	demand (V) in demand	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
		total c delay pe	lecrease in (demand (V) in demand bhicle (min)	2.6% 0.0		0.0	0.0	0.0	0.0% 0.0 0	0.0% 0.0 0	
	average	total c delay pe tota delay, incl	lecrease in (% decrease r diverted ve il diversion (luding diver	demand (V) in demand hicle (min) delay (V hr) sions (min)	2.6% 0.0 0 2.4	0.0% 0.0		<u> </u>	1	0.0	0.0	0.0 0
	average	total c delay pe tota delay, inci delay, inci	lecrease in (% decrease r diverted ve d diversion (luding diver uding diver	demand (V) in demand phicle (min) delay (V hr) sions (min) sions (V hr)	2.6% 0.0 0 2.4 509	0.0% 0.0 0 0.0 0.0	0.0 0	0.0	0.0 0	0.0 0	0.0 0 0.0 0	0.0 0 0.0 0
· · · · · · · · · · · · · · · · · · ·	average	total c delay pe tota delay, inci delay, inci use	lecrease in (% decrease r diverted ve il diversion (luding diver	demand (V) in demand phicle (min) delay (V hr) sions (min) sions (V hr) gn demand	2.6% 0.0 0 2.4 509	0.0% 0.0 0.0	0.0 0 0.0	0.0 0 0.0	0.0 0 0.0	0.0 0 0.0	0.0 0 0.0	0.0

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		period I	ength (min)	60		PROJECT IN	FORMATIO	T 1		REPORT IN	ORMATION	<u> </u>
	anı		growth (%)	5.00%	PROJECT	WZ DELAY				DETAILED		REPOR
			s of growth	0	TITLE				TITLE	SUMMARY	SHEET	
V	EHICLE INPU	-	cars	trucks		C.S.			_	DIVISION		
	design de er cost per ho	mand (%)	75.0%	25.0%		JOB #	1			REPORT BY		
	er cost per no er cost per mil			\$10.79	NOTES:	IGNI DATE			S-127NB@1-		l	
	t per cancella		\$1.00	\$2.00								
						HOD 1		100 2	11070	HOD 3	шсті	10D 4
	ME	THOD INPI		nethod title		I2PM	ME.11				ME 1	.004
	DISTANCE A	ND SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spe
		work zone		thod travel	0.5	see delay		see delay		ses delay		-
			ne	ormal travel	0.5	70.0						
	724	diversion		thod travel								
				ormai travel	threshold		threshold	range	threshold	range	threshold	ranı
		EED DELA	speed dela	(Viceriod)		range	areanoiu	ាតារបួច	Unestion	tunge	(In Carlois	
			eed (when									
		•	eed (when		5	•						
	DECRE	ASE TO DE	MAND		threshold	range	threshold	range	threshold	range	threshold	rang
capa	city for decre				900							
			ars (with no		1.0%	· · · · · · · · · · · · · · · · · · ·				· · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
			icks (with ne		1.0%							
			ars (with del :ks (with del		1.0%	<u>├</u>		}	┣	┟┈────┤	<u> </u>	┝──
			cars (with no		I				 	├		
	d		cks (with no	• • • •								
		diverted ca	ars (with dei	ay) (%/min)								
	di	verted truc	ks (with del	ay) (%/min)								
OTHER	USER COST	INPUT			cars	trucks	cars	trucks	Cars	trucks	cars	truc
		user cost p	er actual de		\$0.00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.0
			ost per div∉		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
•					1							
										1		
P	PERIOD INPUT		backup	at start (V)	1 0	0	0	0	0	0	0	0
rection:	NB		NB		· NB		<u> </u>					Ľ
period	historical	demand		demand		acity		acity		acity		acity
(hr)	(V/period)	(V/period)		(V/period)		(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/pariod)	(V/per
12 A	119		119	0	900]	ļ	
1 A	72		72	0	900	ļ	<u> </u>		J	<u> </u>		ļ
2 A 3 A	75 78		75	0	900 900	 	ļ		 			<u> </u>
4A	104		104	0	900		 		-			
5 A	333		333	0	900			-		 -		
6 A	993		993	0	900		·					
7 A	942		942	0	900							
8 A	800		800	0	900						· · · ·	L
9 A	713		713	0	900					Į		
10 A 11 A	682 700		682 700	0	900 900					<u> </u>	<u> </u>	— —
12 P	655		655	0	900							
19	683		683	0	900					<u>├────</u> ┤		<u> </u>
2 P	885		885	0	900							
3 P	941		941	Q	900							L
4 P	648		648	0	900	ļ		L		<u> </u>]	<u> </u>	
5 P 6 P	1012 654		1012 654	0	900							
7 P	433		433	0	900							· · · · · · · · · · · · · · · · · · ·
8 P	374		374	0	900			 i				<u> </u>
9 P	441		441	0	900							
10 P	321		321	0	900	1						\vdash
11 P	185		185	0	900				<u> </u>	L		L
Total SUI	MMARY OUTF	0	12843	0 ffic method	21600	0 4 hr	0	0	0	0	0	0
301		V 1	(fa	direction			NB	f	NB		NB	<u> </u>
			tot	al user cost	\$9,421	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$8,934	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of		\$487	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				backup (V)	50	0	0	0	0	0	0	0
		naximum l	ackup leng			0.0	0.0	0.0	0,0	0.0	0.0	0.0
• • •		na dalau -	maximum - except diver	delay (min.) Sions (min)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
			except diver	• •	4.0 828	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			al vehicles		487	0	0	0	0	0	0	0
						0	0		0	0	0	0
			tal vehicles	diverted (V)	0		1		0		3 · · · · · · · · · · · · · · · · · · ·	_
		to	decrease in	demand (V)	487	0	0	0	<u> </u>	0	0	
		totaj (decrease in % decrease	demand (V) in demand	487 3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
		totaj delay pe	decrease in % decrease r diverted v	demand (V) in demand ehicle (min)	487 3.8% 0.0	0.0%	0.0% 0.0	0.0%	0.0% 0.0	0.0%	0.0%	0.0
-		totai d totai d delay pe tota	decrease in % decrease ir diverted v al diversion	demand (V) in demand shicle (min) delay (V hr)	487 3.8% 0.0 0	0.0% 0.0 0	0.0% 0,0 0	0.0% 0.0 0	0.0% 0.0 0	0.0%	0.0% 0.0 0	0.0
	average	tot total d delay pe tota delay, inc	decrease in <u>% decrease</u> ir diverted vi al diversion luding diver	demand (V) in demand shicle (min) delay (V hr) slons (min)	487 3.8% 0.0 0 4.0	0.0% 0.0 0 0.0	0.0% 0,0 0 0.0	0.0% 0.0 0.0	0.0% 0.0 0 0.0	0.0% 0.0 0.0	0.0% 0.0 0 0.0	0.0 ⁴ 0.0 0.0
	average	tot total o delay pe tota delay, inc delay, inc	decrease in % decrease ir diverted v al diversion	demand (V) in demand shicle (min) delay (V hr) slons (min) slons (V hr)	487 3.8% 0.0 0 4.0 828	0.0% 0.0 0	0.0% 0,0 0	0.0% 0.0 0	0.0% 0.0 0	0.0%	0.0% 0.0 0	0 0.0 0.0 0 0.0 0 0.0 0 0 0 0 0

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			ength (min)	60			FORMATION	V			FORMATION	
	an		growth (%)	5.00%		WZ DELAY					USER COST	REPORT
	EHICLE INPU		s of growth cars	0 trucks	TITLE	l C.S.	T	<u> </u>	TITLE	SUMMARY DIVISION	ance i	
v		emand (%)	75,0%	25.0%		JOB #				REPORT BY		
us	er cost per ho			\$10.79	S	TART DATE				PORT DATE		
	r cost per mi		\$0.30	\$1.00	NOTES:		•	U	S-127NB@I-			
	t per cancella			\$2.00								
	MF	THOD INP	UT		METI	HOD 1	METH	IOD 2	METI	HOD 3	MET	HOD 4
				nethod title	the second s	2PM						
	DISTANCE A	ND SPEED)	(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spee
		work zone	me	thod travel	0.5	see delay		see delay		see delay		see de
				rmai travel	0.5	70.0						
		diversion	·····	thod travel			ļ	· · · · · · · · · · · · · · · · · · ·			<u> </u>	
		PEED DELA		mai travel	threshold		threshold		threshold	range	threshold	rang
			speed delay	(Weerind)	900	range	unesnoro	range	unesitoio	range	GIRBAILOIG	Tang
	•		seed (when		34						[
			oeed (when i		15							
	DECRE	ASE TO DE	EMAND		threshold	range	threshold	range	threshold	range	threshold	rang
capa	city for decre				900						ļ	
			cars (with no		1.0%							
			icks (with no		4 067						<u> </u>	
			ans (with del :ks (with del		1.0%						 	
			cars (with no								}	
			icks (with no						· · · ·			
			ars (with del									
			ks (with del									
OTHER	USER COST	INPUT			cars	trucks	сала	trucks	cars	trucks	cans	truck
			per actual de	mand (\$/V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			ost per dive		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ŧ												
					1							
	PERIOD INPU	т	hacken	at start (V)	0	· 0	0	0	0	0	0	0
tirection:	NB	,	N8		NB				<u> </u>	<u> </u>	-	<u> </u>
period	historical	demand		demand		acity	cap	acity	C80	acity	cap	acity
(hr)		(V/period)	(V/period)			(V/period)		(V/period)		(V/period)	(V/period)	
12 A	119		119	0	900					<u> </u>		
1 A	72		72	0	900							
2 A	75		75	0	900						L	
3 A	78	······	78	0	900						<u> </u>	
4 A	104		104	0	900	ļ				ļ	<u> </u>	
5 A 6 A	333 993	<u>.</u>	333 993	0	900						Į	
6A 7A	993		993	0	900			l			<u> </u>	
8 A	800		800		900		 	- -	<u> </u>			
9 A	713		713	0	900							
10 A	682		682	0	900							
11 A	700		700	0	900							
12 P	655		655	0	900				ļ	ļ	L	
1 P 2 P	683 885		683 885	0	900 900							<u> </u>
3 P	941		941	0	900							<u> </u>
4 P	648		648	0	900				-			
5 P	1012		1012	0	900							
6 P	654		654	0	900							
7 P	433		433	0	900	}						L
8P 9P	374 441		374 441	0	900 900			<u> </u>				<u> </u>
10 P	321		441 321	0	900	1					[!]	<u> </u>
11 P	185		185	0	900							<u> </u>
Total	<u> </u>	0	12843	0	21600	0	0	0	0	0	0	0
SUN	MARY OUT	דטי	trai	fic method		hr						
				direction	NB		NB		NB		NB	
				i user cost	\$4,668	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				t of delays	\$4,383	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
			user cost of	decreases backup (V)	\$285	\$0	\$0	\$0	\$0	\$0	\$0	\$0 0
		maximum	maximum backup leng		74 0.4	0.0	0	0.0	0.0	0	0.0	0.0
			maximum (6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	avera	ige delay, i	except diver		1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			xcept diver	• •	406	0	0.0	0	0.0	0	0	0
			al vehicles c		285	0	0	0	0	0	0	0
			ai vehicles (0	0	0	0	0	0	0
		total (decrease in (285	0	0	0	0	0	0	0
•		delay n-	% decrease			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			r diverted ve al diversion (0.0	0.0	0.0 0	0.0	0.0	0.0 0	0.0	0.0
	average		luding diver			00	0.0	0.0	0.0	0.0	0.0	0.0
			uding diver			0	0.0	0.0	0.0	0.0	0	0
the second se			r cost / desi		\$0.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DHD: ON	Print: ON	dela Now: O	ay cost / acti	al demand	\$0.35 VALID	\$0.00 NOT VALID	\$0.00	\$0.00 NOT VALID	\$0.00	\$0.00 NOT VALID	\$0.00 NOT VALID	\$0.00

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		-	ength (min)	60			FORMATION	1			FORMATION	
	a	nnual traffic		5.00%		WZ DELAY			REPORT TITLE	DETAILED SUMMARY	USER COST	REPOR
	EHICLE INP		s of growth cars	0 trucks	TITLE	<u> </u>	1		GILE	DIVISION	UNET	
¥		iemand (%)	75.0%	25.0%		JOB #			F	REPORT BY		
មន	er cost per h		\$10.79	\$10.79		TART DATE				PORT DATE	l	
	r cost per m		\$0.30	\$1.00	NOTES:			U	S-127NB@I-I	96		
user cos	t per cancell	ation, (\$/V)	\$1.00	\$2.00								<u> </u>
	М	ETHOD INP				HOD 1	METH	10D 2	METH	HOD 3	MET	IOD 4
	DIGTANCE	AND SPEED		nethod title (mi) (mph)	10-1 distance	2PM speed	distance	speed	distance	speed	distance	5000
	DISTANCE	work zone		thod travel	0.5	speed	UISTAILCE	100 delay	UISCALLO	see delay	Gistaneo	see de
				ormai travel	0.5	70,0						
		diversion		thod travel								
				ormal travel								
		PEED DELA capacity for		(Moorled)	threshold 900	range	threshold	range	threshold	range	threshold	rang
			eed (when		34							
			eed (when		10							
		EASE TO DE			threshold	range	threshold	range	threshold	range	threshold	rang
capa	city for decr				900 1.0%							
		canceled tru	ars (with no		1.0%							· · · ·
		canceled ca			1.0%							
	Ci	anceled truc	ks (with del	ay) (%/min)								
			ars (with no								ļ	
		diverted tru	cks (with no urs (with del									<u> </u>
	c	liverted truc	•									
OTHER	USER COS			,,,	cars	trucks	cars	trucks	cars	trucks	cars	truck
UTHER		User-cost p	er actual de	mand (\$/V)	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
			ost per dive		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
							ľ					
F	ERIOD INPL	IT	backup	at start (V)	0	0		0	0	0	0	0
lirection:	NB		NB		NB							
period		i demand		demand		acity	capa			city	1	acity
(hr)	a harrid ta a da	(V/period)	(V/period)			(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/peri
12 A 1 A	119 72		<u>119</u> 72	0	900		ļ					ļ
2 A	75		72	0	900							
3 A	78		78	0	900							
4 A	104		104	0	900							
5 A	333		333	0	900							[
6 A 7 A	993 942		993 942	0	900				 			
8 4	800		800	0 0	900							
9 A	713		713	0	900							
10 A	682		682	0	900			· · · ·	 			
11 A 12 P	700 655	<u> </u>	700	0	900							
1 P	683		683	0	900							
2 P	885		885	Û	900							
3 P	941		941	0	900							ļ
4 P 5 P	648 1012		648 1012	0	900 900						 	
6 P	654		654	0	900							<u> </u>
7 P	433		433	0	900							
8 P 9 P	374 441		374 441	0	900							ļ
9 P 10 P	321		441 321	0	900	}-	i					ļ
11 P	185	· · ·	185	0	900	1						
Total		0	12843	0	21600	0	0	0	0	0	0	0
SUI	MARY OUT	PUT	trat	ffic method		l hr						
			tots	direction al user cost	NB \$5,911	\$0	NB \$0	\$0	NB \$0	\$0	NB \$0	\$0
				st of delays	\$5,574	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0
		<u> </u>	user cost of	decreases	\$337	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				backup (V)	68	0	0	0	0	0	0	0
			ackup leng maximum d		0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ave	age delay, e			7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		otal delay, e				0.0	0.0	0.0	0.0	0.0	0.0	0.0
		tot	al vehicles o	anceled(V)	337	0	0	0	0	0	0	0
			ai vehicles (0	0	0	0	0	0	0
			tecrease in % decrease			0	0.0%	0.0%	0	0.0%	0	0.0%
-			r diverted ve			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		tota	diversion	delay (V hr)	. 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		e delay, incl				0.0	0.0	0.0	0.0	0.0	0.0	0,0
	tota	I delay, incl				0	0	0	0	0	0	0
			r cost / desi	gn demand Jai demand		\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00
			V LOAL I HE									

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Trends of the second

	p	eriod t	ength (min)	60		PROJECT IN	FORMATION	N	12		FORMATION	
	annuał		growth (%)	5.00%	14	WZ DELAY	***				USER COST	REPOR
	EHICLE INPUT	year	s of growth cars	0 trucks	· TITLE	1 C.S.	<u> </u>		TITLE	SUMMARY DIVISION		
¥	design demai	1d (%)	1	25.0%		JOB #			F	EPORT BY	1	
us	er cost per hour (S			\$10.79	S	TART DATE				ORT DATE		
	er cost per mile, (\$			\$1.00	NOTES:			U	S-127NB@I-	96		
USEF COS	t per cancellation,	(\$/V)	\$1,00	\$2.00								
	METHO	DINP				HOD 1	METH	IOD 2	METH	IOD 3	METł	10D 4
	DISTANCE AND	PEED		nethod title (mi) (mph)	distance	2PM speed	distance	speed	distance	speed	distance	spe
		zone		thod travel	0.5	see delay	alotanoo	see dolay		see delay		800 d
			nc	rmal travel	0.5	70.0						
	div	rsion		thod travel								
	SPEED		·	rmai travel	threshold	range	threshold	range	threshold	range	threshold	rang
			speed delay	(V/period)	900							
			eed (when l		34							
	DECREASE		peed (when I	D=C) (mph)	5 threshold		threshold		threshold	range	threshold	ran
capa	city for decreases			(V/period)	900	range	UN45NOM	range	1110311010	141198	difestiolo	1011
			cars (with no		1.0%							
			icks (with no									
			ars (with del ks (with del		1.0%						╟────┤	
			cars (with del						· · · · ·			
	diver	ted tru	icks (with no	delay) (%)								
			ars (with del									
	diverte	d truc	ks (with del	ay) (%/min)	L	L	L	l	I <u></u>	<u></u>		<u> </u>
OTHER	USER COST INP				cars	trucks	Cars	trucks	cars	trucks	cars	truc
			oer actual de cost per dive		\$0.00 \$0.00	\$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.0 \$0.0
		4001 0	ost per dire						V utoo		40.00	
	•											
· · · · · · · · ·	PERIOD INPUT		backure	at start (V)	0	0	0	0	0	0	0	0
rection:	NB		NB	er orear (A)	NB	0		U U		v		°
period	historical dem	and	design (demand		acity	capi	acity	cap	acity	cap	acity
(hr)	(V/period) (V/p	eriod)				(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/per
12 A	119		119	0	900		L					
1 A 2 A	72 75		72 75	0	900 900				 		∦	
3 A	75		78	0	900			· · · · ·				·
4 A	104		104	0	900							
5 A	333		333	0	900							
6 A 7 A	993 942		993 - 942	0	900 900	···						
8 A	800		800	0	900							.
9 A	713		713	0	900							
10 A	682 700		682 700	0	900 900				·		 	
11 A 12 P	655		655	0	900		 					
1 P	683		683	0	900							
2 P	885		885	0	900							
3 P 4 P	941 648		941 648	0	900 900						∦	
5 P	1012		1012	ŏ	900			<u> </u>		<u> </u>	╠	
6 P	654		654	0	900							
7 P 8 P	433 374]	433 374	0	900 900							
9 P	441		441	0	900		<u> </u>					
10 P	321		321	0	900							
11 P	185		185	0	900	I						
Total	MARY OUTPUT	0	12843	0 ffic method	21600	0 hr	0	0	0	0	0	0
aun	MART OUTOI		621	direction	NB 24		NB		NB		NB	
				i user cost	\$9,513	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				st of delays	\$9,022	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		1	user cost of	decreases backup (V)	\$491 50	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0
		mum t	ackup lengi		0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maxi				8.9	0,0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum o			0.0	0,0	0.0	0.0	0.0	0.0	0.0
	average d	lelay, e	except diver	sions (min)	1				0	0	0	0
	average d	ielay, e elay, e	except divers	sions (min) sions (V hr)	836	0	0	0	~	-	n	ŕ
	average d	elay, e elay, e tot	except diver	sions (min) sions (V hr) anceled(V)	836 491	0	0	0	0	0	0	
	average d	elay, e elay, e tot tot	except diver except diver al vehicles o al vehicles o decrease in o	sions (min) sions (V hr) anceled(V) liverted (V) demand (V)	836 491 0 491	0	0 0 0	0 0 0	0	0 0 0	0	0
	average d total d	elay, e elay, e tot total c	except divers except divers al vehicles o al vehicles o decrease in o % decrease	sions (min) sions (V hr) anceled(V) diverted (V) demand (V) in demand	836 491 0 491 3.8%	0 0 0 0.0%	0 0 0 0.0%	0 0 0.0%	0 0 0.0%	00 00 0.0%	0 0 0.0%	0 0 0.0
	average d total d	elay, e elay, e tot total c lay pe	except divers except divers al vehicles o al vehicles o decrease in o % decrease r diverted ve	sions (min) sions (V hr) anceled(V) diverted (V) demand (V) in demand shicle (min)	836 491 0 491 3.8% 0.0	0 0 0.0% 0.0	0 0 0.0% 0.0	0 0 0.0% 0.0	0 0 0.0% 0.0	0 0 0 0.0% 0.0	0 0 0.0% 0.0	0 0 0.0 ⁴ 0.0
	average d total d	elay, e elay, e tot total c lay pe tota	except divers except divers al vehicles o al vehicles o decrease in o % decrease r diverted ve al diversion o	sions (Min) sions (V hr) anceled(V) diverted (V) demand (V) in demand bhicle (min) delay (V hr)	836 491 0 491 3.8% 0.0 0	0 0 0 0.0%	0 0 0 0.0%	0 0 0.0%	0 0 0.0%	00 00 0.0%	0 0 0.0%	0 0.0 0.0
	average d total d de average dela	lelay, e elay, e tot total c total c lay pe tota iy, incl	except divers al vehicles o al vehicles o decrease in o % decrease r diverted ve al diversion o luding divers uding divers	sions (W hr) sions (V hr) diverted (V) demand (V) in demand hhicle (min) delay (V hr) sions (min) sions (V hr)	836 491 0 491 3.8% 0.0 0 4.1 836	0 0 0.0% 0.0 0 0 0 0 0	0 0 0.0% 0.0 0 0 0 0	0 0 0.0% 0.0 0 0 0	0 0.0% 0.0 0 0 0 0	0 0 0.0% 0.0 0 0 0 0 0	0 0.0% 0.0 0 0 0.0 0	0 0.0 ⁴ 0,0 0,0 0
	average d total d de average dela	elay, e elay, e tot total c total tota tota tota uy, incl use	except divers al vehicles o de vehicles o decrease in o decrease diverted ve al diversion o luding diversion	sions (Whr) sions (V hr) diverted (V) demand (V) in demand (V) hhicle (min) delay (V hr) sions (V hr) gn demand	836 491 0 491 3.8% 0.0 0 4.1	0 0 0.0% 0.0 0 0 0	0 0 0.0% 0.0 0 0 0	0 0 0.0% 0.0 0 0	0 0 0,0% 0,0 0 0	0 0 0.0% 0.0 0 0 0	0 0.0% 0.0 0 0 0.0	0 0 0,0 0,0 0,0 0,0 0,0 0,000000

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		period I	ength (min)	60		PROJECT IN	FORMATION	1		REPORT IN	FORMATION	
	annu		growth (%)	5.00%		WZ DELAY					USER COST	REPOR
		year	s of growth	0 trucka	TITLE	C.S.			TITLE	DIVISION	SHEET	
VI	design den	and /%)	cars 75.0%	25.0%		JOB#				REPORT BY		
1354	r cost per hou		[\$10.79	s s	TART DATE				PORT DATE		
	r cost per mile,			\$1.00	NOTES:			U	S-127NB@I-		L .	
	per cancellation			\$2.00								
	MET	HOD INP	IIT		MET	HOD 1	METH	IOD 2	METH	HOD 3	MET	IOD 4
	1011-1			nethod title		2PM						
	DISTANCE AN	D SPEED)	(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spec
	W	ork zone	1	thod travel	0,5	see delay:		see dalay		see delay		ses di
				ormai travel	0,5	70.0						
	c	iversion		thod travel								
	SPE	ED DELA		411101 11 41 41	threshold	range	threshold	range	threshold	range	threshold	rang
	car	acity for	speed delay	(V/period)	800							
		•	eed (when									
			peed (when	D=C) (mph)	15							
	DECREA			t (Vinesie d)	threshold 800	range	threshold	range	threshold	range	threshold	ranç
сара	ity for decreas		cars (with no		1.0%						·	
			icks (with no		1.010							
			ars (with del		1.0%							
			ks (with del									
			cars (with no									
			icks (with no				L				 	
			ars (with del :ks (with del							<u> </u>		
			na (with titl	ay) (////////)					L	1		
OTHER	USER COST I				Cars	trucks	cars	trucks	cars	trucks	Cars to on	truc
	other u		per actual de cost per dive		\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0,00	\$0.0 \$0.0
		48016	Joar par uive	4/4)	40,00	\$0,00	40.00	40.00	40.00			
	,				1		ŀ					
<i>e</i>												
	ERIOD INPUT			at start (V)	0	0	0	0	0	0	0	0
irection:	NB		NB		NB							
period	historical de (V/period) (V		design (acity (Woerlood)		acity		acity (V/neriod)	Capa (V/period)	acity Woor
(hr) 12 A	(V/period) (V 119	ihauqa)	(v/penod) 119	(V/period) 0	(V/period) 800	(V/period)	(viberiod)	(V/period)	(wherea)	(V/period)	(whenpa)	/whei
1A .	72		72	0	800				<u> </u>			
2 A	75		75	0	800				······			
3 A	78		78	0	800							
4 A	104		104	0	800				L			
5 A	333		333	0	800	ļ]				ļ	ļ	
6 A 7 A	993 942		993 942	0	800 800	<u> </u>	ļ	 				
8 A	800		800	Ū Ū	800							
9 A	713		713	0	800				· · · · · · · · · · · · · · · · · · ·			
10 A	682		682	0	800							
11 A	700		700	0	800							
12 P 1 P	655 683		655 683	0 0	800 800			<u> </u>	ļ		J	
1 P 2 P	885		683 885	0	800		·		<u> </u>		l	
3 P	941		941	0	800						 	
4 P	648		648	0	800							
5 P	1012		1012	0	800							
6 P	654		654	0	800			L	L			
7 P 8 P	433 374		433	0	800 800				 			
9 P	441		441	0	800							
10 P	321		321	Û	800	1						
11 P	185		185	0	800			[]		
Total		0	12843	0	19200	0	0	0	0	0	0	0
SUN	IMARY OUTPU		tra	ffic method direction	24 NB	hr	NB	ļ	NB	ļ	NB	
			tota	al user cost	{	\$0	NB \$0	\$0	\$0	\$0	\$0	\$Ó
				st of delays	\$10,370	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0
			user cost of		\$561	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				backup (V)		0	0	0	0	0	0	0
	17 1	aximum l	backup leng			0.0	0.0	0.0	0.0	0.0	0.0	0.0
	averes	e delau	maximum « except diver			0.0	0.0	0.0	0.0	0.0	0.0	0,0
			except diver			0.0	0.0	0.0	0.0	0.0	0.0	0.0
			al vehicles d			0	0	ò	0	0	0	- 0
			tal vehicles			Ő	Ö	ō	0	0	0	0
		total (decrease in (0	0	0	0	0	0	0
•		4-1-	% decrease			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
			or diverted vo al diversion			0.0	0.0	0.0	0.0	0.0	0.0	0.(
	average		iuding diver			0 0.0	0.0	0.0	0.0	0.0	0	0,0
			luding diven			0.0	0.0	0.0	0.0	0,0	0.0	0.0
						\$0.00	\$0.00	\$0.00	\$0.00			\$0.0
			er cost / desi	gii uomanu	jj #0.00	1 30.00	40.00		0.00	\$0.00	\$0.00	1 40.1-
MP: ON	Print: ON		ay cost / acti			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0

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•			ength (min)	60	1		FORMATION	1			FORMATION	
	annuai		growth (%) is of growth	5.00% 0	PROJECT TITLE	WZ DELAY			REPORT	DETAILED SUMMARY	USER COST	REPOR
v	/EHICLE INPUT	year	s or growth	trucks	HILE	C.S.			ITTLE	DIVISION	T	
	design dema	nd (%)	75.0%	25.0%		JOB #			F	REPORT BY		
us	er cost per hour (\$/V hr)	\$10.79	\$10,79		TART DATE			REF	PORT DATE		
	er cost per mile, (\$			\$1,00	NOTES:			U	S-127NB@I-	96		
user cos	st per cancellation	, (\$/V }	\$1.00	\$2.00								
	METHO	D INPI				HOD 1	METH	100 2	METH	HOD 3	METH	IOD 4
	DISTANCE AND	COCER		nethod title (mi) (mph)	10-1 distance	2PM speed	distance	anand	distance	speed	distance	spe
		k zone		(mi) (mph)	0.5	speed	oistance	spead see delay	distance	speed	UISLATICO	- see d
				ormal travel	0.5	70.0				<u></u>		3 (5 9/10
	div	ersion	me	thod travel								
				ormal travel								
		DELA	Y speed delay		threshold 800	range	threshold	range	threshold	range	threshold	ran
	Capac		speed (when								i	
		•	peed (when		10							
	DECREASE	TO DE	EMAND		threshold	range	threshold	range	threshold	range	threshold	ranç
capa	city for decreases				800							
			cars (with no		1.0%							
			icks (with no ars (with del		1.0%	<u> </u>						
			ks (with del					1				
			cars (with no									
			icks (with no								ļ	
			ars (with del :ks (with del								 	
				with a second the		· · · · ·			L	L	8 <u></u>	
OTHER	R USER COST INP		oer actual de	mand (#67)	cars \$0,00	trucks \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	truc \$0.0
	oritet nael		cost per dive		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
				······································				<u> </u>				
			•		· ·							
	PERIOD INPUT		harler-	at start (V)	0	· 0	0	0	0	Ó.	0	0
rection:	NB		backup NB	at start (V)	0 NB		– – –	<u> </u>		, , , , , , , , , , , , , , , , , , ,	<u> </u>	<u> </u>
period	historical dem	land	design	demand		acity	capi	i acity	cap	acity	cap	acity
(hr)	(V/period) (V/p	eriod)			(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/per
12 A	119		119	0	800							
1A	72		72	0	800	ļ		ļ				
2 A 3 A	75		75 78	0	800 800							
4 A	104	—	104	0	800		<u> </u>	<u> </u>				
5 A	333		333	0	800							
6 A	993		993	0	800							
7 A 8 A	942		942 800	0	800 800							
9 A	713		713	0	800							
10 A	682		682	0	800							
11 A	700		700	0	800							
12 P	655		655	0	800							
1 P 2 P	683 885		683 685	0	800 800			<u> </u>				
3 P	941		941	0	800							
4 P	648		648	0	800							
5 P	1012]	1012	0	800							
6 P 7 P	654 433		654 433	0 0	800 800			<u> </u>			·	
8 P	374		374.	0	800			<u> </u>				
9 P	441		441	0	800							
10 P	321]	321	0	800	ļ						
11 P Total	185	0	185 12843	0	800	0	0	0	- o	0	0	0
	MMARY OUTPUT	ن		fic method		hr u		 		, ,		<u> </u>
				direction	NB		NB	[NB		NB	
				il user cost	\$12,026	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost user cost of	st of delays	\$11,417	\$0	\$0 50	\$0	\$0	\$0	\$0 \$0	\$0
		^L		decreases backup (V)	\$609 168	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0
	maxi	imum t	backup leng		1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum o	felay (min.)	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			axcept diver		5.2	0.0	0.0	0.0	0.0	0,0	0.0	0.0
	total d	the second s	except diven	and a second	1058	0	0	0	0	0	0	0
			al vehicles d lal vehicles d		609 0	0	0	0	0	0	0	0
			decrease in (609	0	0	0	0	0	0	0
-			% decrease	in demand	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
	de		r diverted ve		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			diversion (0	0	0	0	0	0	0
	JUNITERA ALL	av. 16C	Horning Giver	ចាហាច (ញាញ)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	average del: total dela			sions (V hr)	1058			0	0	0	0	n
		ay, Incl	uding diven r cost / desi			0 \$0.00	0 \$0.00	0	0 \$0,00	0 \$0.00	0 \$0.00	0 \$0.0
KO: ON	total dela	use	iuding diven ir cost / desi ay cost / acti	gn demand	\$0.94 \$0.93			0 \$0.00 \$0,00	0 \$0.00 \$0,00			

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		•	ength (min)	60			FORMATION	1			FORMATION	
	81	ากแล่ traffic		5.00% 0	PROJECT	WZ DELAY			REPORT TITLE	DETAILED	USER COST	REPOR
v	EHICLE INP		a of growth cars	0 trucks	- IILE	C.S.	r		016	DIVISION		
		iemand (%)	75.0%	25.0%	1	JOB #	1		F	REPORT BY		
	er cost per h			\$10,79		TART DATE	<u> </u>			PORT DATE	<u> </u>	
	r cost per m		\$0.30 \$1.00	\$1.00 \$2.00	NOTES:			Ű	S-127NB@I-	96		
user COS	t per cancell			32.00							1	
	м	ETHOD INPI		nethod title		HOD 1	MET	IOD 2	METI	HOD 3	METH	HOD 4
	DISTANCE	AND SPEED		(mi) (mph)	distance	2PM speed	distance	speed	distance	speed	distance	spee
		work zone		thod travel	0.5	see delay		see delay		see delay		ase de
				ormai travel	0,5	70.0						
		diversion		thod travel	ļ					ļ		
	c	PEED DELA		ormal travel	threshold	range	threshold	range	threshold	range	threshold	rang
		capacity for		(V/period)		rungu		Tango				
		sp	eed (when	D-0) (mph)								
	DE OD		eed (when	D=C) (mph)	5		41		Ab an a b ad ad		Abasabala	
capa	city for decr	EASE TO DE		t (V/period)	threshold 800	range	threshold	range	threshold	range	threshold	rangi
0494			ars (with no							L		
		canceled tru										
		canceled ca	-		1.0%				ļ		 	
	Ci	anceled truc diverted c	ars (with dei									
		diverted tru	•									
			urs (with del									
		liverted truc	ks (with del	ay) (%/min)	<u> </u>	<u> </u>	L		1		I <u>L</u>	L
OTHER	USER COS				cars	trucks	Cars	trucks	cars	trucks	cars	truck
	othei	r user cost p user c	er actual de ost per dive		\$0.00	\$0.00 \$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00 \$0.00	\$0.00
		0301 6				40.00	40.00	40.00	40,00	40.00	40.00	
· · · · ·	ERIOD INPL	IT	hacture	at start (V)	0	0	<u> </u>	•		0		0
rection:	NB		NB	acolart (V)	NB	U U		0	0	<u> </u>	0	0
period	historica	l demand	design	demand		acity	capa	acity	cap	acity	cap	acity
(hr)		(V/period)		(V/period)		(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/perio
12 A	119		119	0	800							
1 A 2 A	72		72	0	800 800						l	
3A	78		78	ő	800						l	
4 A	104		104	0	800							
5 A 6 A	333 993		333 993	0	800 800		<u> </u>		ļ		<u> </u>	
6A 7A	993		993 942	0	800						 	
8 A	800		800	0	800							
9 A	713		713	0	800				L			
10 A 11 A	682 700		682 700	0	800 800	<u> </u>	 			l	 	
12 P	655		655	0	800							
1 P	683		683	0	800						[
2 P 3 P	885 941		885 941	0	800 800		ļ				 	
4 P	648		648	0	800						l	
5 P	1012		1012	0	800							
6 P 7 P	654 433	· · · · ·	654 433	0	800							
8 P	433 374		433	0	800 800						 	
9 P	441		441	0	800							
10 P	321		321	0	800							
11 P Total	185	0	185 12843	0	800 19200	0	0	0	0	0	0	0
	MARY OUT			fic method		hr		U				v
				direction	NB		NB		NB	<u> </u>	NB	
				user cost	\$15,212	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user co Iser cost of	st of delays decreases	\$14,462 \$751	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
				backup (V)	141	- 3 0 - 0		- 5 0 		- \$0 - 0	0 - 20	
			ackup leng	th (lane mi)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum (16.1	0,0	0.0	0.0	0.0	. 0.0	0.0	0.0
		age delay, e otal delay, e	-	· ·		0.0	0.0	0.0	0.0	0.0	0.0	0.0
			al vehicles (751	0	0	0	0	0	0	0
		tot	al vehicles	diverted (V)	0	0	0	0	0	0	0	Ő
			lecrease in			0	0	0	0	0	0	0
•			% decrease r diverted ve			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			diversion			0.0	0,0	0.0 0	0.0	0.0	0.0	0.0
		e delay, incl	uding diver	sions (min)	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	tota	il delay, incl				0	0	0	0	0	0	0
			r cost / desi ly cost / acti			\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00
		(10)8	,		11 VI.LU	ເຈບເບບ	ຫຼຸ່ວບ,ບປ	ւ տեշեն				ւ ծվենն

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			ength (min)	60			FORMATION				FORMATION	
	an		growth (%) s of growth	5.00% 0	PROJECT	WZ DELAY				SUMMARY	USER COST	REPOR
VI	EHICLE INPL		cars	trucks	- IIILE	C.S.	[DIVISION		
		emand (%)	75.0%	25.0%		JOB #				REPORT BY		
	er cost per h			\$10.79		TART DATE				PORT DATE	1	
	r cost per m			\$1.00 \$2.00	NOTES:			U	S-127NB@I-	96		
user cost	per cancelia		· · · · · · · · · · · · · · · · · · ·	\$2.00								
	M	THOD INPL		nethod title		10D 1 2PM	METH	IOD 2	METH	10D 3	METH	IOD 4
	DISTANCE	NO SPEED		(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spee
		work zone		thod travel	0.5	see delay		see delay		see delay		see de
				ormal travel	0,5	70,0						
		diversion		thod travel								
	s	PEED DELA		DILISUE ZLAIAAL	threshold	range	threshold	range	threshold	range	threshold	rang
	c	apacity for	speed delay	(V/period)	800	Ť						
			eed (when I		39				· ·			
	DECRE	SF ASE TO DE	Peed (when i	D=C) (mph)	15 threshold	range	threshold	range	threshold	range	threshold	rang
capac	city for decre			1 (V/períod)	800	Tanga	undanola	runge	di denora	, ange		
			cars (with no		1.0%							
			icks (with no		4.01/							
			ars (with del ks (with del		1.0%	 	 					
			cars (with no				 					
		diverted tru	icks (with no	o delay) (%)								
			ars (with dela				└── ─			[ļ.,
			ks (with del	ay) (%/min)					<u> </u>	I	<u> </u>	
OTHER	USER COST		oer actual de		Cars \$0.00	trucks \$0.00	Cars	truck# \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	truci \$0.0
	other	•	cer actual de cost per dive		\$0.00	\$0.00	\$0.00 \$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
				(•		
	ERIOD INPU	·	backup	at start (V)	6	0		0	0	0	0	0
irection;	NB	1	NB i	at 31011 (¥)	NB							
boineq	historical	demand	design	demand	cap	acity	capa	icity	cap	acity	сар	acity
(hr)		(V/period)				(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/peri
12 A	119 72		<u>119</u> 72	0	800	· .						
1 A 2 A	72		75	0	800						 	
3 A	78		78	0	800							
4 A	104		104	0	800							
5 A 6 A	333 993		333 993	0 0	800 800 ·		┠────┤					
6A 7A	993		993	0	800 1	<u>├</u> ───┤	 					
8 A	800		800	0	800							
9 A	713		713	0	800							
10 A 11 A	682 700		682 700	0	800 800						 	
12 P	655		655	ů 0	800							
1 P	683		683	0	800							Į
2 P 3 P	885 941		885 941	0	800 800				 			
3 P 4 P	941 648		941 648	0	800							<u> </u>
5 P	1012		1012	Ô	800							
6 P	654		654	0	800							
7 P 8 P	433 374		433 374	0	800 800		<u> </u>		╢	· · ·		
9 P	441		441	0	800	1						
10 P	321		321	0	800							
11 P Total	186	0	185 12843	0	800	L	<u> </u>	0	0	0	0	Ĺ
	MARY OUT		,	o ffic method		0 I hr	0	U		<u>,</u>	- v	
				direction	NB		NB	·	NB		NB	
				al user cost	\$10,988	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of	st of delays	\$10,425 \$564	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
		· · ·		backup (V)	177	30	- \$ 0 0	\$U 0	30 0	1 DU	3 0	30
			backup leng	th (lane mi)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			maximum o		14.8	0.0	0.0	0.0	0.0	0,0	0.0	0.0
			except diven except diven		4,7	0.0	0.0	0.0	0.0	0.0	0.0 0	0.0
			al vehicles o		564	0	0	0	0	0	0	0
		tot	tal vehicles o	diverted (V)	0	0	0	Ő	0	0	0	0
			decrease in (564	0	0	0	0	0	0	0
•			% decrease ir diverted ve		4.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
			si diversion (0.0	0.0 0	0.0	0.0	0.0	0.0	0.0
	average	a delay, inci	luding diver	sions (min)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
					966	0	0	0	0	0	0	Ő
	tota	delay, incl										
	tota	1180	iuding divers ir cost / desi ay cost / acti	gn demand	\$0.86	\$0.00 \$0.00	\$0.00 \$0.00	\$0,00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.0 \$0.0

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		•	length (min)	60			FORMATIO	۷.			FORMATION	
	· ann		: growth (%)	5.00% 0	8	WZ DELAY	*****		REPORT	DETAILED	USER COST	REPOR
v	EHICLE INPUT		rsofgrowth	trucks	TITLE	l C.S.	r		IIILE .	DIVISION	ance)	
	design da			25.0%		JOB #			۽ (I	REPORT BY		
U\$	er cost per ho		\$10,79	\$10.79		TART DATE				PORT DATE		
	er cost per mil			\$1.00	NOTES:			U	S-127NB@I-	96		
user cos	t per cancellat	on, (\$/V)	\$1.00	\$2.00	IL	<u> </u>						
	ME	HOD INP				HOD 1	METH	IOD 2	MET	HOD 3	METH	IOD 4
	DISTANCE A	D CDEEP		method title (mi) (mph)		2PM	distance	speed	distance	speed	distance	Spee
		ork zone		(mi) (mpn)	0.5	speed	UISTANCE	speed see delay	UISLANCE	speed see delay	414(4)(00	spec
	•	515 2010		rmal travel	0,5	70.0		and works			<u> </u>	
		diversion		thod travel								
				rmai travel								
		ED DELA		()//maria	threshold	range	threshold	range	threshold	range	threshold	rang
	Ca		speed delay beed (when i			<u> </u>					ŀ	
			peed (when i		10							
		SE TO DE	EMAND		threshold	range	threshold	range	threshold	range	threshold	rang
capa	city for decrea				800							
			cars (with no Joks (with no		1.0%				ļ			
			ars (with del		1.0%							
			cks (with dela							├ ── ─┤		
			cars (with no									
			ucks (with no									
			ars (with dela		ļ		<u> </u>		 	├────┤	├ ──┤	<u> </u>
			cks (with dela	ay) (%/imini)	l <u> </u>	Ł	<u> </u>		1	<u> </u>	<u> </u>	۱ <u>ــــــــــــــــــــــــــــــــــــ</u>
OTHER	USER COST				cars	trucks	cars	trucks	cars	trucks	cars	truci
	other u		per actual de cost per dive		\$0.00	\$0,00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00	\$0.0
		4961 4			40,00		40.00	40.00		40.00	+0.00	40.0
	-						ŀ		l			
· · · · · · · · · ·		•	<u> </u>	-1 -1 - 1 - 1 - 1 - 1	L	,		_	L			-
rection:	PERIOD INPUT		backup	at start (V)	0 NB	0	°	0	0	0	0	0
period	historical d	emand	design of	iemand		i acity	сар	acity	C2D	acity	Capi	acity
(hr)	(V/period) (5	(V/period)		(V/period)		(V/period)		, <i>i</i>	(V/period)	
12 A	119		119	0	800							
1A	72		72	0	800							
2 A 3 A	75 78		75 78	0	800				ļ			
3 A 4 A	104		78 104	0	800 800	<u> </u>						
5 A	333		333	0	800			L	l			
6 A	993		993	0	800							
7 A	942		942	0	800	ļ						
8 A 9 A	800 713		800 713	0	800 800		<u> </u>			<u> </u>		<u> </u>
10 A	682		682	0	800	1			 		├ ──┤	
11 A	700	·	700	0	800							
12 P	655		655	0	800							
1 P 2 P	683 885		683 885	0	800 800				 			
3 P	941	•	941	0	800		├ ───					
4 P	648		648	ō	800							
5 P	1012		1012	0	800							
8 P 7 P	654		654	0	600				l			
7 P 8 P	433		433 374	0	800 800					├		
9 P	441		441	0	800							
10 P	321		321	0	800							
11 P	185		185	0	800							
Total	MMARY OUTP	0 IT	12843	0 fic method	19200	0	0	0	0	0	0	0
301			trai	direction	NB 24	hr	NB		NB	ŧ	NB	
			tota	user cost	\$12,084	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				t of delays	\$11,472	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			user cost of	decreases	\$611	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				had 49.22	168	0.0	0.0	0	0.0	0.0	0.0	0.0
	· · · · · · · · · · · · · · · · · · ·			backup (V) h (lane mi)	10			0.0	0.0	0.0	0.0	0.0
	1		maximum backup lengi maximum o	th (lane mi)	1.0 15.2				IL V.V			
		aximum l	backup lengi	th (lane mi) lelay (min.)		0.0	0.0	0.0	0.0	0.0	0.0	l 0,0
	avera	aximum l le delay, d li delay, e	backup lengt maximum o except diven except divers	th (lane mi) lelay (min.) sions (min) sions (V hr)	15.2 5.2 1063	0.0			0.0			0.0
	avera	aximum I le delay, d al delay, e tot	backup lengt maximum o except diven except divers tal vehicles c	th (lane mi) lelay (min.) sions (min) sions (V hr) anceled(V)	15.2 5.2 1063 611	0.0 0.0 0	0.0 0 0	0,0 0 0	0	0.0 0 0	0.0 0 0	0
	avera	aximum I le delay, d al delay, e tot tot	backup lengt maximum o except diven except divers tal vehicles o tal vehicles o	th (lane mi) lelay (min.) sions (min) sions (V hr) anceled(V) liverted (V)	15.2 5.2 1063 611 0	0.0 0.0 0 0	0.0 0 0	0.0 0 0 0	0 0 0	0.0 0 0	0.0 0 0 0	0
	avera	aximum I le delay, d al delay, e tot tot	backup lengt maximum o except diven except divers tal vehicles o tal vehicles o decrease in o	th (lane mi) lelay (min.) sions (min) tions (V hr) anceled(V) diverted (V) demand (V)	15.2 5.2 1063 611 0 611	0.0 0.0 0 0 0 0	0.0 0 0 0	0.0 0 0 0 0	0 0 0	0.0 0 0 0	0.0 0 0 0	000000000000000000000000000000000000000
	avera	aximum I le delay, d al delay, e tot tot total d	backup lengt maximum o except diven except divers tal vehicles o tal vehicles o	th (lane mi) lelay (min.) sions (min) tions (V hr) anceled(V) diverted (V) demand (V) in demand	15.2 5.2 1063 611 0 611 4.8%	0.0 0.0 0 0	0.0 0 0	0.0 0 0 0	0 0 0	0.0 0 0	0.0 0 0 0	0 0 0 0.0%
	avera tot	aximum I le delay, e tot total c delay pe total	backup lengt maximum o except diven except divers tal vehicles o decrease in o % decrease in diversion o	th (lane mi) sions (min) sions (V hr) anceled(V) diverted (V) demand (V) in demand hicle (min) delay (V hr)	15.2 5.2 1063 611 0 611 4.8% 0.0 0	0.0 0,0 0 0 0 0,0% 0,0% 0,0	0.0 0 0 0.0% 0.0% 0.0	0.0 0 0 0 0.0% 0.0% 0.0	0 0 0.0% 0.0% 0.0	0.0 0 0 0 0 0.0% 0.0% 0.0	0.0 0 0 0 0.0% 0.0% 0.0	0 0 0 0.09 0.0
	average	e delay, e al delay, e tot total c delay pe tota delay, inc	backup lengt maximum o except diven except divers tal vehicles o tal vehicles o decrease in o % decrease or diverted ve al diversion o fluding divers	th (lane mi) letay (min.) sions (win) sions (V hr) anceled(V) diverted (V) demand (V) in demand hhicle (min) delay (V hr) sions (min)	15.2 5.2 1063 611 0 611 4.8% 0.0 0 5.2	0.0 0.0 0 0 0 0.0% 0.0 0.0 0 0.0	0.0 0 0 0.0% 0.0% 0.0 0.0	0.0 0 0 0 0.0% 0.0% 0.0	0 0 0.0% 0.0% 0.0 0	0.0 0 0 0.0% 0.0% 0.0 0.0	0.0 0 0 0.0% 0.0% 0.0 0.0	0 0 0 0,0% 0,0% 0,0 0
	average	la delay, o al delay, o tot tot total o delay pe totz delay, inc lelay, inc	backup lengt maximum o except diven axcept diven atal vehicles o tal vehicles o decrease in o % decrease or diverted ve al diversion o luding diven	th (lane mi) letay (min.) sions (W hr) sions (V hr) anceled(V) diverted (V) demand (V) in demand hhicle (min) delay (V hr) sions (min) tions (V hr)	15.2 5.2 1063 611 0 611 4.8% 0.0 0 0 5.2 1063	0.0 0.0 0 0 0.0% 0.0% 0.0 0 0.0 0 0 0 0	0.0 0 0 0 0.0% 0.0% 0.0 0 0 0 0 0	0.0 0 0 0.0% 0.0% 0.0 0 0.0 0	0 0 0.0% 0.0 0 0.0 0 0	0.0 0 0 0.0% 0.0 0.0 0.0 0.0	0.0 0 0 0.0% 0.0 0.0 0.0 0.0 0.0	0 0 0.0% 0.0 0 0 0.0 0
	average	la delay, o al delay, o tot total o delay pe tota delay, inc lelay, inc use	backup lengt maximum o except diven except divers tal vehicles o tal vehicles o decrease in o % decrease or diverted ve al diversion o fluding divers	th (lane mi) lelay (min.) sions (W hr) bions (V hr) diverted (V) demand (V) in demand thicle (min) delay (V hr) sions (W hr) gn demand	15.2 5.2 1063 611 0 611 4.8% 0.0 0 0 5.2 1063	0.0 0.0 0 0 0 0.0% 0.0 0.0 0 0.0	0.0 0 0 0.0% 0.0% 0.0 0.0	0.0 0 0 0 0.0% 0.0% 0.0	0 0 0.0% 0.0% 0.0 0	0.0 0 0 0.0% 0.0% 0.0 0.0	0.0 0 0 0.0% 0.0% 0.0 0.0	0 0 0 0.0% 0.0 0 0 0 0

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	View		an att (40		APO IECT I	FORMATION			REPORTING	FORMATION	
	-		ength (min)	60 5.00%			FORMATION	4	DEDORT			
	a	nnual traffic vear	growth (%) a of growth	5.00%	TITLE	WZ DELAY		11++ p		SUMMARY	USER COST SHEET	REPUR
VI	EHICLE INP		cars	trucks		C.S.	1			DIVISION		
	design	demand (%)	75.0%	25.0%		JOB #	ł			REPORT BY	ŀ	
		our (\$/V hr)		\$10.79		TART DATE				ORT DATE		
		ille, (\$/V mi)		\$1.00	NOTES:			U	S-127NB@I-	96		
user cost		ation, (\$/V)		\$2.00	L					<u> </u>		
	M	ETHOD INP				HOD 1	METH	IOD 2	MET	10D 3	MET	IOD 4
	0.0			nethod title	Contraction of the local division of the loc	2PM						
	DISTANCE	AND SPEED		(mi) (moh)	distance	speed	distance	speed	distance	beeqa valeb eea	distance	spee
		work zone		thod travel	0.5	see delay 70.0		see delay		Rea delta		see de
		diversion		ormal travel thod travel	0.5	70.0						
		diagraph		ormal travel					·			
		PEED DELA			threshold	range	threshold	range	threshold	range	threshold	rang
······		capacity for	speed dela	(V/period)	800							
			eed (when									
			peed (when	D=C) (mph)	5							
		EASE TO DE		1.0.0.	threshold	range	threshold	range	threshold	range	threshold	rang
capac	ity for decr	eases to dep			800 1.0%							<u> </u>
		canceled (canceled tru	cars (with no loks (with no		1.0%				 			
			ars (with del		1.0%							
	c	anceled truc							}			<u> </u>
			cars (with no									
			icks (with no									
			ars (with del									
		liverted truc	ks (with del:	ay) (%/min)								
OTHER	USER COS	TINPUT			cars	trucks	cars	trucks	cars	trucks	cans	truc
	othe	r user cost p			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
		user c	ost per dive	rsion (\$/V)	\$0,00	\$0.00	\$0,00	\$0.00	\$0,00	\$0.00	\$0.00	\$0,0
P	ERIOD INPI	<u></u>	backun	at start (V)	0	0	0	0	0	0	0	0
irection:	NB		NB	ar 31475 (7)	NB						<u> </u>	
period		demand		demand		acity	capa	acity	cap	acity	сар	acity
(hr)		(V/pariod)				(V/period)				(V/period)	(V/period)	
12 A	119		119	0	800			· · · · · · · · · · · · · · · · · · ·				
1A	72		72	0	800	ļ						
2 A	75	[75	0	800							ļ
3 A	78	<u> </u>	78	0	800			L	ļ		<u> </u>	ļ
4 A 5 A	104		104 333	0	800 800							<u> </u>
6 A	993	<u> </u>	993	0	800			· · ·				
7 A	942	<u>├</u>	942	0	800							
8 A	800		800	0	800							
9 A	713		713	C	800							
10 A	682		682	0	800							
11 A	700		700	0	800			·				
12 P	655		655	0	800		ļ	ļ	ļ		 	
1 P 2 P	683 885		683 885	0	800 800				ļ			
2 P 3 P	885 941		885 941	0	800			┝───┦	 			
4P	648		548 548	0	800							
5 P	1012	-	1012	0	800		I					
6 P	654		654	0	800							
7 P	433		433	.Q	800							
8 P	374		374	0	800							
9 P 10 P	441		441	0	800	ļ					ļ	
10 P	321		321 185	0	800							
Total		0	12843	0	19200	0	0		0		0	L
	MARY OUT			fic method		hr	<u> </u>		<u> </u>	<u> </u>		, ```
				direction	NB		NB		NB		NB	
· · · · ·			tota	i user cost	\$15,271	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				it of delays	\$14,518	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		L	user cost of		\$753	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				backup (V)	141	0	0	0	0	0	0	0
			backup leng		0.8	0.0	0,0	0.0	0.0	0.0	0.0	0.0
	3VA	rage delay, e	maximum o		16.1 6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		otal delay, e			1346	0.0	0.0 0	0.0	0.0	0.0	0.0	0,0
			al vehicles o		753	0	0	0	0	0	0	0
			al vehicles (0	0	0	0	0	0	0	0
			decrease in a	• • •	753	0	0	0	0	ŏ	ō	0
<u> </u>			% decrease	• • •		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
			r diverted ve		0.0	0,0	0.0	0.0	0.0	0.0	0.0	0.0
			diversion		0	0	0	0	0	0	0	0
		e delay, incl			6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	tota	il delay, incl			1346	0	0	0	0	0	0	0
						\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.0 \$0.0
					N N 1 20							
		use	r cost / desi iy cost / acti	gn demand	\$1.19 \$1.20	£	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

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			ength (min)	60			FORMATION	1	§		FORMATION	
	annual		growth (%)	5.00%		WZ DELAY				DETAILED SUMMARY	USER COST	REPOR
10	EHICLE INPUT	year	s of growth cars	0 trucks	TITLE	C.S.	T		TITLE	DIVISION		· · · · ·
Vt	design demar	1d (%)		25.0%		.ioB #				REPORT BY		
user cost per hour (\$/V hr) \$10.79 \$10.79					s s	TART DATE	ļ			ORT DATE		
	r cost per mile, (\$			\$1.00	NOTES:			ย	S-127NB@I-	96		
	t per cancellation,	· · · · · · · · · · · · · · · · · · ·	\$1.00	\$2.00	<u> </u>			····				
	METHO	DINP	UT		METH	HOD 1	METH	IOD 2	METH	IOD 3	METH	IOD 4
method title						2PM						
	DISTANCE AND	SPEED)	(mi) (mph)	distance	speed	distance	speed	distance	speed	distance	spe
	wori	zone	me	thod travel	0.5	see delay		see delay		see delay		ace d
				ormai travel	0,5	70.0						
	dive	ersion		thod travel								
		DELA		rmal travel	diama in a dat		threshold		threshold	range	threshold	rang
	SPEED		speed delay	(Vineriori)	threshold 800	range	(illestioid	range	TRESILDIO	12090	0116811010	14115
	capac		speed (when		34							
		need (when		15								
	DECREASE	TO DE	MAND		threshold	range	threshold	range	threshold	range	threshold	ranç
capac	city for decreases			800								
		cars (with no		1.0%								
			icks (with no			ļ						<u>.</u>
			ars (with dei		1.0%		 					
			ks (with dei		 		┣───┤		l i		l	
diverted cars (with no delay) (%) diverted trucks (with no delay) (%)					 				l			
diverted trucks (with delay) (%)									I			
			ks (with del						1	<u> </u>		
071155	· · · · · · · · · · · · · · · · · · ·					1 	A (6			cars	truc
UTHER	USER COST INP		oer actual de	manditan	cars \$0.00	trucks \$0.00	cars \$0.00	trucks \$0.00	cars \$0.00	trucks \$0.00	50.00	\$0.0
			cost per dive		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
		2000										
	•											
	<u> </u>									<u></u>	<u> </u>	
	ERIOD INPUT			at start (V)	0	0	0	0	0	0	0	0
rection:	NB		NB		NB	1					l	
period	historical dem			demand		acity		acity		acity		city
(hr) 12 A	(V/period) (V/p 119	enod)	(V/period) 119	(V/period) 0	(V/period) 800	(V/period)	(v/period)	(V/period)	(v/panod)	(V/period)	(V/period)	(v/per
12 A 1 A	72		119 72	0	800	ļ			l		 	
2 A	75		72	0	800							
3 A	78		78	0	800			· · · · · · · · · · · · · · · · · · ·	l			
4A	104		104	0	800			···· ·		İ		
5 A	333		333	0	800							
6 A	993		993	0	800							
7 A	942		942	0	800				· · · · · ·			
8 A 9 A	800 713		800 713	0	800				l		l	
10 A	682		682	0	800							·
11 A	700		700	0	800			<u> </u>	l	·		
12 P	655		655	0	800			1				
1 P	683		683	0	800							
2 P	685		885	0	800							
3 ₽	941		941	0	800							
4 P	648		648	0	800				 		l	
5 P 6 P	1012 654		1012 654	0	800 800					<u> </u>		
7 P	433		433	0	800	-	∥				1	
8 P	374		374	0	800				1			
9 P	441		441	0	500				1			
10 P	321		321	0	800							
11 P	185		185	0	800				<u> </u>			
Total		0	12843	0	19200	0	0	0	0	0	0	0
SUMMARY OUTPUT traffic method direction					24 NB	hr		 	NP	ļ	NB	
			Inte	direction ai user cost	NB \$11,051	\$0	NB \$0	\$0	NB \$0	\$0	NB \$0	\$0
user cost of delays					\$10,484	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
user cost of decreases					\$566	\$0	\$0	\$0	\$0	\$0	\$0	\$0
maximum backup (V)						0	0	0	0	0	0	0
maximum backup length (lane mi)					0.0	0.0	0,0	0.0	0.0	0.0	0.0	
	maximum delay (min.)					0.0	0.0	0.0	0.0	0.0	0.0	0.0
	average delay, except diversions (min)					0.0	0,0	0.0	0.0	0.0	0.0	0.0
	total delay, except diversions (V hr)					0	0	0	<u> </u>	0	0	0
	total C	total vehicles canceled(V)					0	0	0 0	0	0	0
	total C	total vehicles diverted (V)					0	0	0	0	0	0
	total d				566					I		
	total d		decrease in			0		0.0%	0.0%	0.0%	/1	0.0
		total (decrease in	demand (V) in demand	4.4%	0.0%	0.0%	0.0%	0.0% 0,0	0.0%	0.0%	
		total (decrease in % decrease	demand (V) in demand shicle (min)	4.4% 0.0	0.0%		0.0% 0.0 0			0.0%	0.0
	de average dela	total d lay pe tota sy, inc	decrease in % decrease in diverted vi al diversion luding diver	demand (V) in demand shicle (min) delay (V hr) sions (min)	4.4% 0.0 0 4.7	0.0%	0.0%	0.0	0,0	0.0 0 0.0	0.0%	0.0
	de average dela	total d lay pe tota sy, inc y, incl	decrease in % decrease r diverted ve al diversion luding diver luding diver	demand (V) in demand shicle (min) delay (V hr) sions (min) sions (V hr)	4.4% 0.0 0 4.7 972	0.0% 0.0 0 0.0 0.0 0	0.0% 0.0 0 0.0 0.0	0.0 0 0.0 0	0.0 0 0.0 0	0.0 0 0.0 0	0.0% 0.0 0 0.0 0.0	0.0 0 0.0
	de average dela	total e lay pe tota sy, inc use	decrease in % decrease in diverted vi al diversion luding diver	demand (V) in demand shicle (min) delay (V hr) sions (min) sions (V hr) gn demand	4.4% 0.0 0 4.7 972 \$0.86	0.0% 0.0 0 0.0	0.0% 0.0 0 0.0	0.0 0 0.0	0,0 0 0.0	0.0 0 0.0	0.0% 0.0 0 0.0	0.0 0.0 0.0 0.0 0 \$0.0 \$0.0

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			ength (min)	60 6 000			FORMATION	4				
	ал		growth (%) s of growth	6.00% D	PROJECT	WZ DELAY				DETAILED SUMMARY	USER COST	REPORT
V	EHICLE INPU		Cars	trucks	Inte	C.Ś.				DIVISIÓN		
· · · ·	design d	emand (%)	75.0%	25.0%		JOB #				REPORT BY		
	er cost per he		\$10,79	\$10.79		TART DATE				PORT DATE	1	
	r cost per mi t per cancella		\$0.30 \$1.00	\$1.00 \$2.00	NOTES:			U	S-127NB@I-	90		
USET COST				42.00		1000						100.4
METHOD INPUT method title						10D 1 2PM	METH	HOD 2	METHOD 3 METH			100 4
	DISTANCE A	ND SPEED		(mi) (mph)		speed	distance	speed	distance	speed	distance	spee
		work zone	me	thod travel	0.5	see delay		ses delay		see delay		see de
				rmai travel	0,5	70.0						
		diversion		thod travel						l		
	SI	PEED DELA			threshold	range	threshold	range	threshold	range	threshold	rang
	Ċ		speed delay		800							
			eed (when		34						ļ	
speed (when D=C) (mph) DECREASE TO DEMAND					10 threshold	range	threshold	range	threshold	range	threshold	range
capa	city for decre			I (V/period)	800	range	Ineshore	rango	anosticia	range		
			ars (with no		1.0%							
			cks (with no						L		L	
			ars (with del ks (with del		1.0%		\vdash				-	
	Ç4		ars (with no									
		diverted tru	cks (with no	delay) (%)								
			ars (with del									
<u> </u>			ks (with del	ayj (%/min)				<u> </u>		L		
OTHER	USER COST				Cars	trucks	cars	trucks	Cars to op	trucks	cars	truck
	other		er actual de ost per dive		\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.00
		49916		· \\\	1	+=				· · · · · · · · · · · ·		
					1							
	EDIOD MOT	T	backura	at start (V)	0	0	0	0	0	0	0	0
rection:	ERIOD INPU	<u>.</u>	NB	a cordit (4)	NB	- °	- °					·
period	historical	demand		demand		acity	cap	acity	cap	acity	cap	acity
(hr)	(V/period)	(V/period)	(V/period)	(V/period)	· · ·	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/peri
12 A	119		• 119	0	800							
1 A 2 A	72		72	0	800	<u> </u>			 	i	 	
3 A	75		75	0	800							
4 A	104		104	0	800							
5 A	333		333	0	800							
6A 7A	993 942		993 942	0	800 800							· · ·
8 A	800		800	0	800	[
9 A	713		713	0	800							
10 A	682		682	0	800				ļ	ļ		ļ
11 A 12 P	700 655		700 655	0	800 800		· ·		┣────	-		
19	683		683	0	800	1						
2 P	885		885	0	800							
3 P 4 P	941 648		941 648	0	800						J	ļ
4 P 5 P	1012		648 1012	0	800	<u> </u>			<u>├</u> ────	<u> </u>		<u> </u>
6 P	654		654	0	800							
7 P	433		433	0	800							
8 P 9 P	374 441		374 441	0	800 800		 					
10 P	321		321	0	800							<u> </u>
11 P	185		185	0	800							
Total		0	12843	0 heathead	19200	0	0	0	0	0	0	0
SUMMARY OUTPUT traffic method direction						hr	NB	ļ	NB		NB	
total user cost						\$0	\$0	\$0	\$0	\$0	\$0	\$0
user cost of delays						\$0	\$0	\$0	\$0	\$0	\$0	\$0
user cost of decreases maximum backup (V)					\$614 168	\$0	\$0	\$0	\$0	\$0	\$0	\$0
maximum backup (v) maximum backup length (lane ml)					1	0.0	0.0	0.0	0	0.0	0.0	0.0
maximum delay (min.)						0.0	0.0	0.0	0.0	0.0	0.0	0.0
average delay, except diversions (min)						0.0	0.0	0.0	0.0	0.0	0.0	0.0
total delay, except diversions (V hr) total vehicles canceled(V)						0	0	0	0	0	0	0
			al vehicles (al vehicles (0	0	0	0	0	0	0
			decrease in			0	0	0	0	0	0	0
-			% decrease	in demand	4.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			r diverted v			0.0	0.0	0,0	0.0	0.0	0.0	0.0
	averan		li diversion : Iudino diver			0.0	0.0	0	0	0.0	0.0	0.0
average delay, including diversions (min)								0,0	0.0	1		0.0
	total delay, including diversions (V hr)					0	0	0	0	0	0	
	tota		r cost / desi			\$0.00	\$0,00	\$0.00	\$0,00	\$0.00	\$0,00	\$0.00

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period length (min) 60							FORMATIO	4			FORMATION	
annual traffic growth (%) 5.00% years of growth 0					PROJECT	WZ DELAY				DETAILED	USER COST	REPOR
VEHICLE INPUT cars trucks						C.S.	T		(11 62	DIVISION		
design demand (%) 75.0% 25.0%						JOB #			F	REPORT BY	ļ	
user cost per hour (\$/V hr) \$10.79 \$10.79					S.	TART DATE			1	PORT DATE]	
	er cost per m		\$0.30	\$1.00	NOTES:			บ	S-127NB@I-	96		
user cos	t per cancella	ation, (\$/V)	\$1.00	\$2.00	L							
	M	ETHOD INPU				HOD 1	METH	IOD 2	METH	HOD 3	METH	IOD 4
				nethod title		2PM					atta kan an 3	
	DISTANCE /	work zone		(mí) (mph) thod travel	distance 0.5	speed	distance	speed	distance	speed	distance	spa sec d
		WOIK ZONE		ormal travel	0.5	70.0		A star a second a				Bandarda, Alizzak
		diversion		thod travel						· · · ·		
			ne	ormal travel								
		PEED DELA			threshold	range	threshold	range	threshold	range	threshold	rang
	c c		speed delay		800 34				L			
		-			5							
speed (when D=C) (mph) DECREASE TO DEMAND					threshold	range	threshold	range	threshold	range	threshold	rang
сара	city for decre			d (V/period)	800							
			cars (with no		1.0%							
			icks (with no									
			ars (with del		1.0%				 	 		
	Cá		ks (with del cars (with no		 							
			icks (with no								 	
			ars (with del									
	d	iverted truc	ks (with del	ay) (%/min)								
OTHER	USER COST	INPUT			cara	trucks	cars	trucks	саль	trucks	cars	truci
	other		oer actual de		\$0.00	\$0.00	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$0.0
		user c	ost per dive	rsion (\$/V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0,00	\$0.0
					1							
	•				1		I				[
F	PERIOD INPU	т	backup	at start (V)	0	0	0	0	0	0	0	0
rection:	NB		NB		NB							
period	historical			demand	cap	acity '	сар	acity	capi		capa	icity
(hr)	(V/period)	(V/period)		(V/period)		(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(V/period)	(Viperi
12 A	119		119	0	800							
1 A 2 A	72 75		72	0	800		· · · · ·					
3 A	78		/5 78	0	800						 	
4 A	104		104	0	800							
5 A	333		333	0	800							
6 A	993		993	0	800							
7 A	942		942	0	800							
8 A 9 A	800 713		800 713	0	800 800	ļ						
10 A	682		682	0	800							
11 A	700		700	0	800							
12 P	655	_	655	0	800							
1 P	683		683	0	800							
2 P 3 P	865 941		885 941	0	800						┣───┤	
4 P	648		648	0	800						┟┼	
5 P	1012		1012	0	800							
6 P	654		654	0	800							
7 P	433		433	0	800							
8 P 9 P	374 441		374 441	0	800 800	Í					├ ──────┤	
10 P	321		321	0	800	<u> </u>					┝	
11 P	185		185	0	800							
Total		0	12843	0	19200	0	0	0	0	0	0	0
SUMMARY OUTPUT traffic method						hr	. <u></u> .					
direction					NB		NB		NB		NB	
total user cost user cost of delays					\$15,337 \$14,580	\$0	\$0	\$0	\$0 \$0	\$0 ©0	\$0	\$0
	user cost of decreases					\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
		maximum backup (V)							0	0	- 	0
		maximum backup length (lane mi)					0.0	0.0	0.0	0.0	0.0	0.0
			maximum delay (min.)					0.0	0.0	0.0	0.0	0.0
						0.0	0.0	0.0	0.0	0.0	0.0	0.0
	aver	age delay, e	xcept diver	sions (min)	6.7				0	0	0	0
	aver	age delay, e stal delay, e	xcept diver	sions (min) sions (V hr)	1351	0	. 0	0				•
	aver	age delay, e otal delay, e tota	except diver except diver al vehicles d	sions (min) sions (V hr) canceled(V)	1351 756	0	0	0	0	0	0	0
	aver	age delay, e otal delay, e toti toti	xcept diver	sions (min) sions (V hr) canceled(V) diverted (V)	1351	0	0	0	0	0 0 0	0	0
	aver	age delay, e otal delay, e tota tota total d	except diver ixcept diver al vehicles d al vehicles i decrease in % decrease	sions (min) sions (V hr) canceled(V) diverted (V) demand (V) in demand	1351 756 0	0 0 0	0	0		0	<u> </u>	0
-	aver	age delay, e otal delay, e tota tot total d delay per	except diver except diver al vehicles of al vehicles of decrease in % decrease r diverted ve	sions (min) sions (V hr) canceled(V) diverted (V) demand (V) in demand shicle (min)	1351 756 0 756	0 0 0 0.0% 0.0	0 0 0	0 0 0	0	0	0	0 0 0.0%
	aver to	age delay, e btal delay, e tota tot total d delay per tota	except diver al vehicles of al vehicles of decrease in % decrease r diverted ve al diversion of	sions (min) sions (V hr) canceled(V) diverted (V) demand (V) in demand shicle (min) delay (V hr)	1351 756 0 756 5.9% 0.0 0	0 0 0 0.0% 0.0 0	0 0 0.0% 0.0 0	0 0 0.0% 0.0 0	0 0 0.0% 0.0 0	0 0.0% 0.0 0	0 0.0% 0.0 0	0 0,0% 0.0
	aver to average	age delay, e btal delay, e toti total d total d delay per tota a delay, incl	except diver al vehicles of al vehicles of decrease in % decrease r diverted ve al diversion of luding diver	sions (min) sions (V hr) canceled(V) diverted (V) demand (V) in demand bhicle (min) delay (V hr) sions (min)	1351 756 0 756 5.9% 0.0 0 6.7	0 0 0 0.0% 0.0 0 0 0.0	0 0 0.0% 0.0 0 0	0 0 0.0% 0.0 0.0 0.0	0 0.0% 0.0 0 0	0 0.0% 0.0 0 0 0.0	0 0.0% 0.0 0 0 0	0 0.0% 0.0 0.0 0.0
	aver to average	age delay, e total delay, e tota total d total d delay pai tota e delay, incl i delay, incl	except diver al vehicles of al vehicles of decrease in % decrease r diverted ve of diversion al diversion uding diver	sions (W hr) sions (V hr) canceled(V) diverted (V) demand (V) in demand bhicle (mln) delay (V hr) sions (M hr)	1351 756 0 758 5.9% 0.0 0 6.7 1351	0 0 0.0% 0.0% 0.0 0 0 0	0 0 0.0% 0.0 0 0 0 0 0 0	0 0 0.0% 0.0 0 0 0 0 0 0	0 0.0% 0.0 0 0 0 0	0 0.0% 0.0 0 0 0.0 0	0 0.0% 0.0 0 0 0.0 0	0 0.0% 0.0 0.0 0 0.0 0.0
	aver to average	age delay, e total delay, e tota total d delay per tota s delay, incli delay, incli user	except diver al vehicles of al vehicles of decrease in % decrease r diverted ve al diversion of luding diver	sions (Whr) sions (V hr) canceled(V) diverted (V) demand (V) in demand obhicle (min) delay (V hr) sions (V hr) gn demand	1351 756 0 756 5.9% 0.0 0 6.7	0 0 0 0.0% 0.0 0 0 0.0	0 0 0.0% 0.0 0 0	0 0 0.0% 0.0 0.0 0.0	0 0.0% 0.0 0 0	0 0.0% 0.0 0 0 0.0	0 0.0% 0.0 0 0 0	0 0.0% 0.0 0.0 0.0

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