APPENDIX B

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Kevin A. Dahl, P.E., R.L.S. Christopher D. Robins, P.E. Juan N. Lomeli', R.L.S. Douglas J. Nicholls, P.E.

Dahl, Robins & Associates, inc.

CIVIL ENGINEERING SURVEYING TRAFFIC

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May 20, 2002

Development Design Engineering, LLC 1122 State Street, Suite D El Centro, CA 92243

Attention: Mr. Tom Dubose, Manager

Reference: Imperial Center Traffic Impact Study

Dear Mr. Dubose:

We have received the accident data from the California Department of Transportation to provide a response to Bill Figge's comments on the Imperial Center Traffic Impact Study. The following are our replies to his comments:

- A review of collision history at all impacted locations with SR-111 should be included and mitigation provided to any increase in collision history as a result of increased volumes from this project. Impacted locations would include Jasper Road and SR-111, McCabe Road and SR-111, Heber Road and SR-111 and Dogwood Road and Heber/SR-86.
- All proposed signals on SR-111 or to be coordinated with SR-111 should be analyzed to meet not only volume warrants, but also collision history warrants, and mitigated as necessary.

The existing accident rate for each intersection was determined using the 1998-2001 data provided by CalTrans. By making the gross assumption this rate would stay constant as traffic volumes increased, the numbers of accidents were projected in to the future years.

At the Heber Road and SR-111 intersection, there are currently about 7 accidents per year. Based on the increased volume, that number could be expected to increase to 15 per year by 2020. The number of accidents correctable by signal installation would be four (realizing signals are already in place at this location). The primary type of accident

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occurring at this intersection is the rear end collision. In order to decrease the frequency of these types of accidents, it is recommended some form of advance flasher be installed notifying motorists when the light is expected to turn red for their approach. Since this intersection is already experiencing 5 of these types of crashes per year, this would be a good mitigation measure to implement immediately, independent of any development at this site.

At the Jasper Road and SR-111 intersection, there are currently about 4 accidents per year. Based on the increased volume, that number could be expected to increase to 7 per year by 2020. The number of accidents correctable by signal installation would be five. This was the only intersection that would warrant a signal based on accidents (in 2010). Since it also meets volume warrants, a signal was previously recommended for this location. The angle accidents are the primary type of crashes occurring, so no other mitigation is expected to be needed.

At the McCabe Road and SR-111 intersection, there are currently about 2 accidents per year. Based on the increased volume, that number could be expected to increase to 3 per year by 2020. The number of accidents correctable by signal installation would be three. The proposal to install a signal at this location when volume warrants are met should adequately mitigate the majority of the accidents occurring here.

At the Heber Road and Dogwood Road intersection, there is currently an average of 1 accident per year. Based on the increased volume, that number could be expected to increase to 2 per year by 2020. None of the accidents are correctable by signal installation. This minimal increase in the number of accidents does not suggest mitigation would be necessary.

Sincerely,

DAHL, ROBINS & ASSOCIATES, INC.

Randy Hoskins

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I. INTRODUCTION AND SUMMARY

A. Purpose of Report and Study Objectives

At the request of Development Design & Engineering, LLC, **Dahl, Robins & Associates, Inc.**, has prepared this report to present the results of a Traffic Impact Study conducted for the Imperial Center proposed north Calexico in Imperial County, California. The purpose of this study is to determine and analyze the potential traffic impacts of the proposed development and recommend improvements necessary to ensure safe and efficient operation on the major roadway system. This report describes the existing roadway conditions, identifies peak traffic volumes, forecasts and distributes future traffic volumes, and projects the impacts of additional trip generation. Conclusions based on the impacts of any increased traffic on the roadway system have been identified and recommendations for mitigating areas of concern are provided. The specific study objectives are as follows:

- Evaluate the intersection of SR 111 & SR 86/Heber Road, SR 111 & McCabe Road, SR 111 & Jasper Road, SR 86 & Dogwood Road, Bowker Road & Jasper Road, Bowker Road & Heber Road, Bowker Road & McCabe Road and recommend any necessary improvements;
- Evaluate the site access driveways and recommend any necessary improvements.

B. Executive Summary

1. Site Location and Study Area

The proposed development is located in Imperial County north of the City of Calexico on the northeast corner of Highway 111 and Heber Road (Highway 86) (See Figure 1). The study area analyzed for impacts from the proposed development encompasses the intersections of SR 111 & SR 86/Heber Road, SR 111 & McCabe Road, McCabe & Yourman, SR 111 & Jasper Road, SR 86 & Dogwood Road, Bowker Road & Jasper Road, Bowker Road & Heber Road, Bowker Road & McCabe Road

8. Development Description

The Imperial Center is a proposed 75 acre commercial development to be located north of Calexico. The project is bounded by Highway 111 on the west, Correll Road on the north, the Alder Drain on the west and Heber Road on the south (See Figures 2 and 3).

The Imperial Center is expected to have two accesses onto Heber Road. The majority of the access for the site will be provided off of Yourman Road, which is

proposed for realignment within the project boundary. The other access for the site will be off of Correll Road on the north side of the project.

The Imperial Center will consist of a truck stop/gas station, an outlet mall and a number of out lots that will house a variety of comm ercial uses. The project is expected to be developed in five phases. The first phase is expected to be completed in 2002, with each additional phase requiring two years for build-out.

9. Principal Findings

The results of this traffic impact analysis indicate that the area roadway system will require improvements to accommodate the traffic volumes generated by the proposed development. The development should provide for convenient site ingress and egress upon completion of the construction of the recommended improvements.

10. Conclusions

The proposed development is expected to generate a combined 38,377 new daily trips upon completion. These trips will access the site from Heber Road, Yourman Road and Correll Road. For the purposes of this study the complete buildout of the project is anticipated for the year 2010. During the 2010 AM Peak Hour 1,969 trips will be generated with 1,141 of these entering the site and 828 exiting the site. During the 2010 PM Peak Hour 3,614 trips will be generated with 1,811 of these entering the site and 1,803 exiting the site.

11. Recommendations

Based on the results of this traffic impact analysis, it is our opinion that the following recommended improvements will provide for safe, convenient site ingress and egress to this development. It has been shown that at full buildout of the project, the service level of the internal and adjacent streets will be adequate to handle the traffic from this project. For a detailed summary of improvements see Section VII Conclusions and Recommendations.

On-site Improvements

Yourman Road

The preliminary site layout for this project shows the relocation of Yourman Road farther east from its current alignment. The road is also shown as being reconstructed as a two lane roadway with medians and left turn lanes at driveway openings. It will be necessary to clearly sign Yourman Road for northbound traffic where it turns to the west so that through traffic does not end up in the Imperial Center parking lot.

Site Access Driveways

Three driveways are shown from the site onto Heber Road. The easternmost two driveways will allow full turning movements. These driveways should be constructed with one lane in and two lanes out. Due to the close proximity of the western driveway to Yourman Road, it is recommended that this driveway be limited to right turns out only. This will help reduce some of the traffic using the Yourman/Heber intersection, improving the Level Of Service of that intersection.

The other driveways into the site will function adequately with one lane in and one lane out. Traffic volumes will be spread out over these driveways, coupled with the fact that they are onto lower volume roads, providing for high service levels.

Off-site Improvements

Heber Road

It is recommended that Heber Road be widened to five lanes prior to Phase IV (2008) from Scaroni Road on the west to the east edge of the project. This will provide the necessary capacity at the Highway 111 intersection and the project driveways. An additional southbound left turn lane and a northbound right turn lane will be needed to accommodate 2010 traffic.

Jasper Road and Highway 111

A traffic signal will likely be warranted at the Highway 111 and Jasper Road intersection with the addition of Phase I traffic. Though this phase adds little traffic to this intersection, the intersection is currently operating at poor levels of service. This project will add an additional 1,084 trips to this intersection at build-out, or 32%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$40,000.

McCabe Road & Highway 111

A traffic signal will likely be warranted at the Highway 111 and McCabe Road intersection at project build-out. This intersection is currently operating at poor levels of service for eastbound and westbound traffic. This project will add an additional 630 trips to this intersection at build-out, or 18%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$22,500. It is also recommended that McCabe Road be marked with two lanes approaching the intersection, a left turn lane and a combined through/right turn lane.

Yourman Road and Heber Road

In addition to the previously described improvements to Heber Road, a traffic signal will be needed at this intersection with the addition of Phase IV (2008) traffic. The Level Of Service calculations show a northbound Level Of Service of D in 2006, but if the roadway is realigned as proposed,

this will not be the case. Since the need for this signal is due almost entirely to project generated traffic, the entire cost for this signal would be assigned to the developer. It will be important to coordinate this signal with the signal on Highway 111 so that backups do not occur along Heber.

Heber Road & Highway 111

At project build-out, dual southbound left turn lanes will be required, as well as a northbound right turn lane.

Dogwood Road and Heber Road

A traffic signal will likely be warranted at the Dogwood Road and Heber Road intersection at project build-out. This project will add an additional 723 trips to this intersection at build-out, or 43%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$53,750.

Bowker Road and Heber Road

At project build-out, left turn lanes will be needed for northbound and southbound traffic at this intersection.

The design of all intersections and roadways shall be in accordance with Caltrans Standard Drawings, Imperial County guidelines and the latest editions of the MUTCD and AASHTO Green Book.

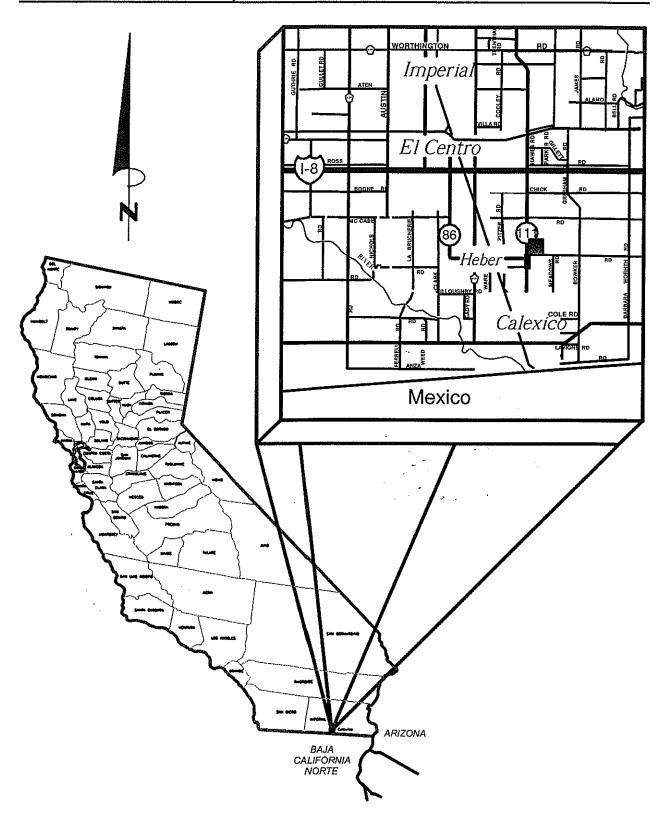


FIGURE 1 VICINITY MAP

II. PROPOSED DEVELOPMENT

A. Off-site Development

With both developed and undeveloped property surrounding this site the potential for future development which could have an impact on the existing roadway network is fairly significant. Traffic is expected to increase considerably on Heber Road over the next ten years.

B. On-site Development

1. Land Use and Intensity

Anticipated land use within the proposed development is shown in Figure 2 and broken down as follows:

Hotel	200	Rooms
Movie w/Matinee	16	Screens
Specialty Retail Center	15	KSF
Discount Store	5	KSF
Factory Outlet Center	460	KSF
Quality Restaurant	5	KSF
High Turnover Sit-Down Restaurant	5.	KSF
Fast Food w/Drive Through	10	KSF
Fast Food w/o Drive Through	13	KSF
Gas w/Convenience Market	18	Fueling Positions
Quick Lube Shop	5	Service Positions
Tire Store	5	KSF
Video Rental	5	KSF
Drive-In Bank	10	KSF

2. Location

The proposed development is located on the northeast corner of Heber Road and SR 111.

3. Site Plan

The Proposed Development Site Plan shown in Figure 2 depicts the commercial subdivision lot layout and internal street layout for the project.

4. Phasing and Timing

It is anticipated that construction on the proposed development will begin in the

year 2002. For the purposes of this study it was assumed that construction of the overall project would occur in five phases. Beginning in the year 2002 the four remaining phases would come "on line" in the years 2004, 2006, 2008 and 2010.

Phase I of the Imperial Center will be built out and generating traffic from a gas station/convenience market/truck stop, a tire store and a quick lube facility. Phase II, analyzed for the year 2004 includes the hotel. Phase III, analyzed for the year 2006 includes build out of half of the out-lots and the following phase, Phase IV, analyzed for the year 2008 would include the rest of the out- lots. Phase V is expected in the year 2010 and would include the outlet mall and theater.

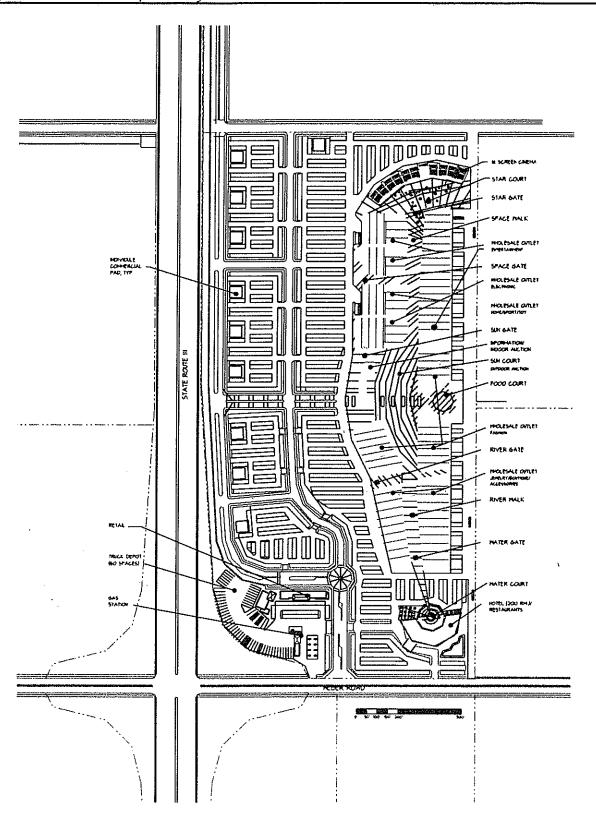


FIGURE 2
PROPOSED DEVELOPMENT SITE PLAN

III. AREA CONDITIONS

A. Study Area

1. Area of Influence

For the purposes of this study, the geographic area of influence will be defined roughly by southern Imperial County. It was assumed that a majority of the site trips generated will begin or end within this region. The existing street network located in the area of significant traffic impact is depicted in Figure 3. The intersections within this area which were analyzed as part of this study are also shown.

2. Scope of Study

The scope of this study was determined during meetings with staff from Imperial County. For the preparation of this Traffic Impact Study we have used the methodology set forth in the *Guidelines for Traffic Impact Studies* and *Traffic Access and Impact Studies for Site Development*, published by the Institute of Transportation Engineers (ITE), establish uniform guidelines for conducting traffic impact analyses.

3. Area of Significant Traffic Impact

Roadway and intersection geometric information was also gathered.

B. Study Area Land Use

1. Existing Land Uses

Land Use surrounding the proposed development is comprised of mostly agricultural and industrial uses. A trucking company is located adjacent to the subject property on the south side of Heber Road.

2. Anticipated Future Development

With both developed and undeveloped property surrounding this site the potential for future development which could have an impact on the existing roadway network is fairly significant. The current land use in the area of the Imperial Center is primarily agricultural in nature. Future uses in this area will likely be industrial or commercial in nature. Other uses at this intersection have been discussed with the County in the past, though none appear to be actively moving forward at this time.

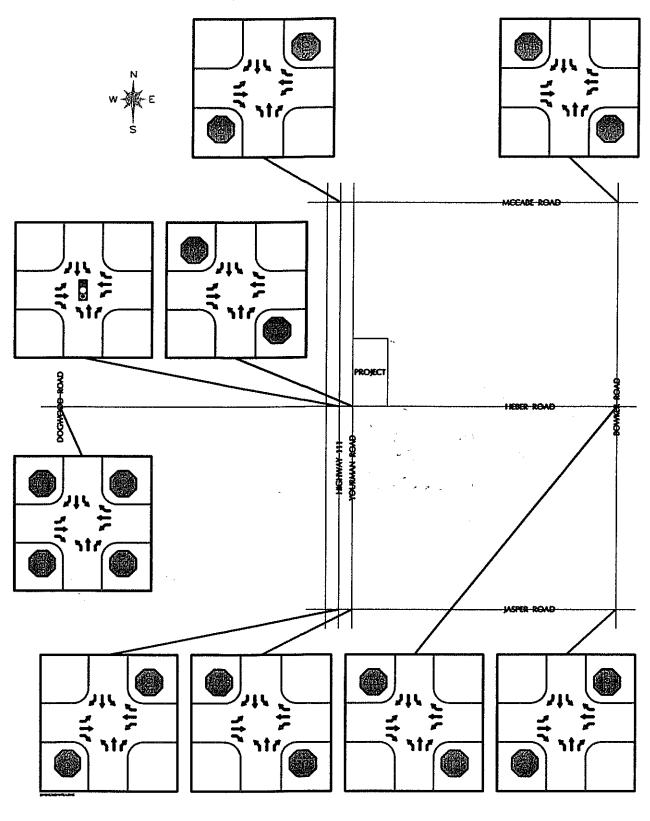


FIGURE 3
STUDY AREA

C. Site Accessibility

1. Existing Area Roadway System

Direct access to the site will be gained via Heber Road on the south, Correll Road on the north and Yourman Road on the west. Three driveways into the site are proposed off of Heber Road and Correll Road, with 5 accesses located along Yourman Road.

Heber Road is a two lane, paved street on the south side of this development. Heber widens out to add an exclusive right turn lane at its intersection with Highway 111. West of Highway 111, Heber is designated as Highway 86. On the west edge of the town of Heber, Heber Road intersects with Dogwood Road at a 4-way stop. Both roads have one lane in each direction, with an additional right turn lane for westbound Heber.

Yourman Road is currently a two-lane road on the west side of the development. It functions as a frontage road for Highway 111. Yourman road is offset approximately 500' from Highway 111 where it intersects Jasper and Heber. At its intersection with McCabe, there is only about 30' separating the two roads. Yourman is stop controlled at its intersection with all three main cross streets in the study area.

Correll Road is currently a farm access road on the north side of the Imperial Center development. Correll Road tees into Yourman, where it is stop controlled, and does not access Highway 111.

The Alder Drain forms the eastern boundary of the project site. It is not expected that a the crossing of the Alder Drain will be necessary for traffic purposes. Any gains in improved traffic handling of such a crossing would likely not be sufficient enough to outweigh the considerable cost of building such a crossing.

Highway 111 is a four-lane, divided, access controlled roadway adjacent to the project site. There are intersections on Highway 111 approximately every mile. Jasper and McCabe are stop controlled at their intersections with Highway 111, while the Heber Road intersection is controlled by a traffic signal. Left turn lanes are provided at every median crossing in 111.

Jasper Road, located one mile south of the project, is a two-laned road with exclusive right turn lanes at its intersection with Highway 111. McCabe Road, which is approximately 1 mile north of the project site, has one lane in each direction. It widens out at the Highway 111 intersection, but specific turning lanes are not designated.

Bowker Road is a two-laned road approximately 2 miles east of the site. Bowker stops for McCabe Road and Heber Road, while Jasper Road is stop controlled at

its intersection with Bowker.

2. Average Traffic Volumes and Conditions

Average weekday traffic volumes were determined for the roadway network in the vicinity of the site. A review of daily traffic volumes was used in determining area traffic flows, annual growth and seasonal fluctuations.

3. Peak Hour Traffic Volumes

In order to accurately assess roadway capacities and Level of Service, hourly traffic volumes during the peak periods of travel were obtained. Peak hour traffic volume data was collected during the peak weekday periods at the intersections.

Initial turning movement counts were conducted in late July of 2001. Following a meeting with Imperial County staff, additional analysis was requested. Counts for the additional intersections were taken in November. Counts were taken for the peak twelve hours through the day, from 6 AM to 6 PM. From this data the AM Peak Hour, Midday Peak Hour and PM Peak Hour were determined at the locations. All turning movements were recorded in 15 minute intervals. Traffic count data sheets are presented in Appendix A. Typical peak periods generally occur in the morning between 7:00 am and 9:00 am and again in the evening between 4:00 pm and 6:00 pm. Due to the nature of the proposed development and the existing traffic characteristics the development was analyzed using both the AM and PM Peak Hour. The AM Peak Hour traffic volumes and PM Peak Hour site generated traffic to determine intersection Level of Service.

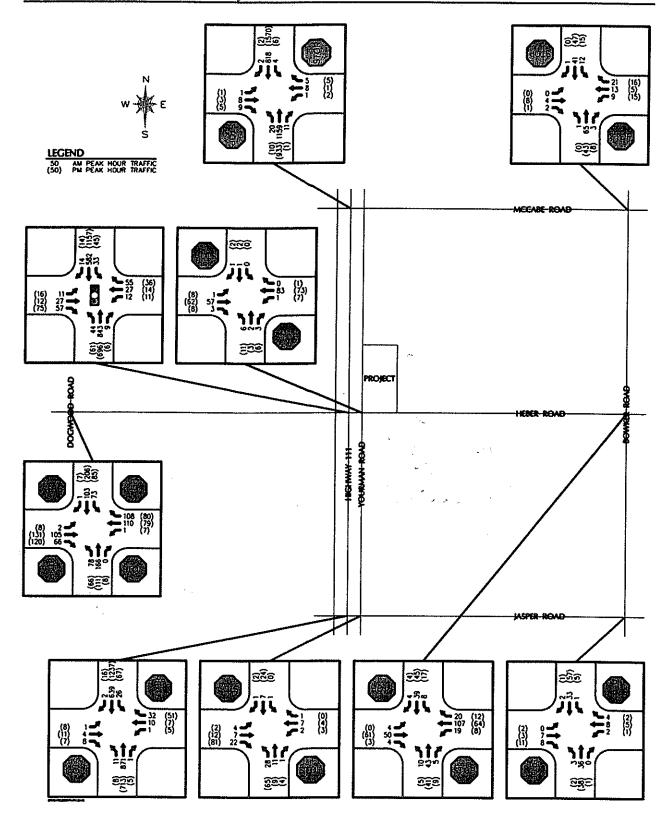


FIGURE 4
NOVEMBER 2001 PEAK HOUR BACKGROUND TRAFFIC VOLUMES

IV. PROJECTED TRAFFIC

A. Site Traffic

1. Trip Generation

In order to evaluate the traffic impacts of the site, the amount of traffic from the proposed project needs to be generated and assigned to the surrounding roadway network. Trip generation information for the proposed project was determined using the Institute of Transportation Engineer's *Trip Generation*, Sixth Edition, 1997. Peak hour volumes represent the highest volume of traffic generated during a one-hour period for the morning and evening peak. The various ITE land use codes were used for this study. Trip generation for the proposed land use was developed based on the trip rates presented in Table 1 below:

TABLE 1
LAND USE TRIP GENERATOR

Land Use	Category Code	Units	Daily Rate	AM Peak	Enter	Exit	PM Peak	Enter	Exit
Hotei	310	Rooms	8.23	0.56	61%	39%	0.61	53%	47%
Movie w/ Matinee	444	Screens	153.33				44.53	52%	48%
Spec. Retail Center	814	KSF	40.67	6.41	48%	52%	2.59	43%	57%
Discount Store	815	KSF	56.63	0.99	66%	34%	4.24	50%	50%
Factory Outlet	823	KSF	26.59	0.67	73%	27%	2.29	47%	53%
Quality Rest	831	KSF	89.95	0.81	50%	50%	7.49	67%	33%
High TO Sit Down Rest	832	KSF	130.34	9.27	52%	48%	10.86	60%	40%
FF Rest. w/o Drive Thru	833	KSF	716	43.87	60%	40%	26.15	51%	49%
FF Rest. w/ Drive Thru	834	KSF	496.12	49.86	51%	49%	33.48	52%	48%
Quick Lube Shop	837	Service Positions	40.00	3.00	67%	33%	5.19	55%	45%

Gas w/Conv Mart	845	Fueling Positions	162.78	10.06	50%	50%	13.38	50%	50%
Tire Store	848	Bays		2.24	65%	35%	3.47	42%	58%
Video Rental	896	KSF					13.60	46%	54%
Drive-In Bank	912	KSF	265.21	12.63	56%	44%	54.77	50%	50%

KSF - 1000 Square Feet of Gross Floor Area

FF - Fast Food

TABLE 2
SITE GENERATED TRAFFIC

Phase	AM Peak	Enter	Exit	PM Peak	Enter	Exit
I	207	108	99	284	1 42	142
I - II	319	176	143	406	207	199
I - III	990	546	444	1,127	576	551
1 - IV	1,661	916	745	1,848	945	903
1 - V	1,969	1,141	828	3,614	1,811	1,803

2. Directional Distribution

Before the impact of site traffic can be determined, it is necessary to develop a reasonable approximation of the directional distribution of the site traffic. The directions by which vehicles approach or leave this development have been estimated by evaluation of area traffic flows, review of the local roadway network, as well as knowing the existing and future attractions in the area. It is assumed that the number of trips originating or terminating at the site in each direction is roughly proportional to the population of that area and the proportion of traffic that currently exists. Based on existing traffic patterns and the location of residential and commercial centers, traffic to and from the site is expected to be

distributed as shown in Figure 5.

3. Primary Trip Traffic

Primary Trip Traffic Volumes are estimated to account for the majority of the total site generated traffic.

4. Pass-By/Diverted Link Trip Traffic

Pass-by traffic varies relative to the specific land use and location under consideration. Because of the nature and location of this development, it was assumed that not all of the traffic would be making primary trips. Since this area is not located near a residential area, 60% of the trips to the gas station (phase I) from Highway 111are expected to be either linked or diverted trips. When the center builds out more, 40% of the out-lot traffic (phases III & IV) will likely be linked trips, where people will use more than one of the site stores on each trip.

5. Traffic Assignment

Total site generated traffic was assigned according to the directional distributions and Linked/Diverted trips mentioned previously. Total Site Generated Traffic added to Peak Hour Background traffic less Linked/Diverted trips is shown in Figures 6, 7, 8 and 9.

6. Annual Growth Factor

Future growth in this area is expected to increase the amount of existing traffic by two percent per year. Using 2002 as the opening year of the Imperial Center, traffic volumes that will use the existing streets were determined. It was assumed that each phase of the project would be built out over the course of two years.

7. Delivery Traffic

For the purposes of this study, it was assumed that most of the delivery truck traffic would use the easternmost access off of Heber Road. Some delivery traffic was also assigned to the driveway to the west of that. Additional delivery traffic would be expected to use Correll Road and the easternmost driveway from the project site.

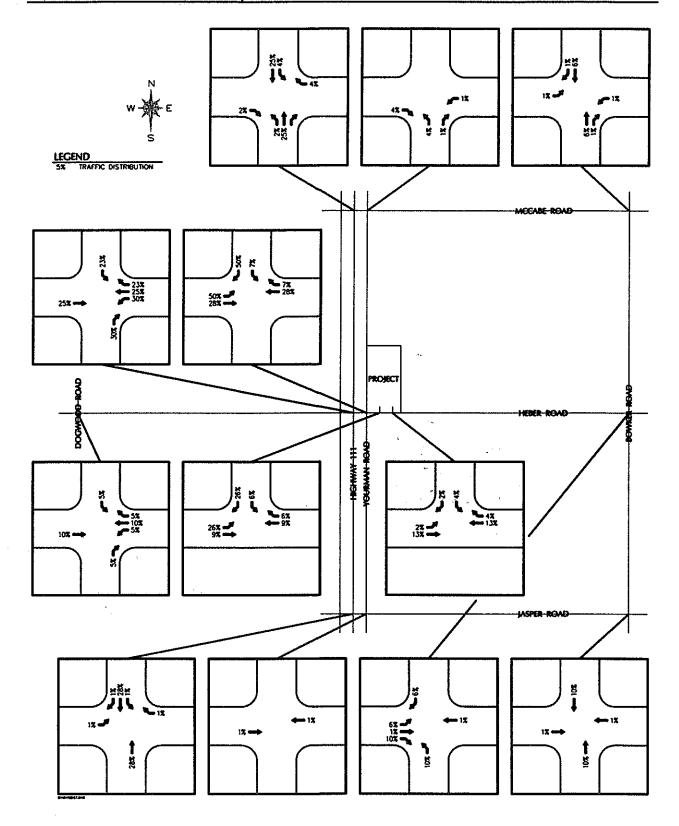


FIGURE 5
DIRECTIONAL DISTRIBUTION
SITE GENERATED TRAFFIC VOLUMES

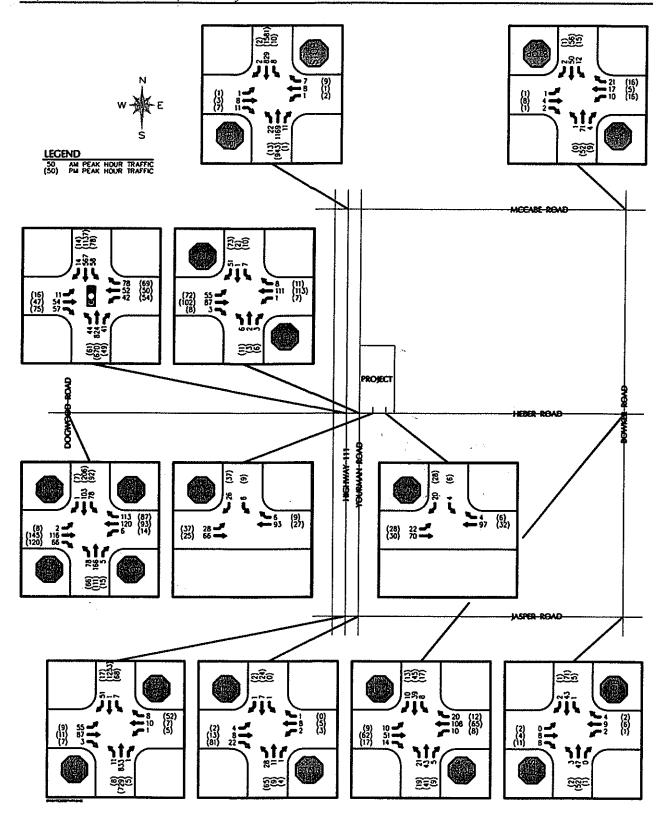


FIGURE 6 2002 PEAK HOUR TRAFFIC VOLUMES

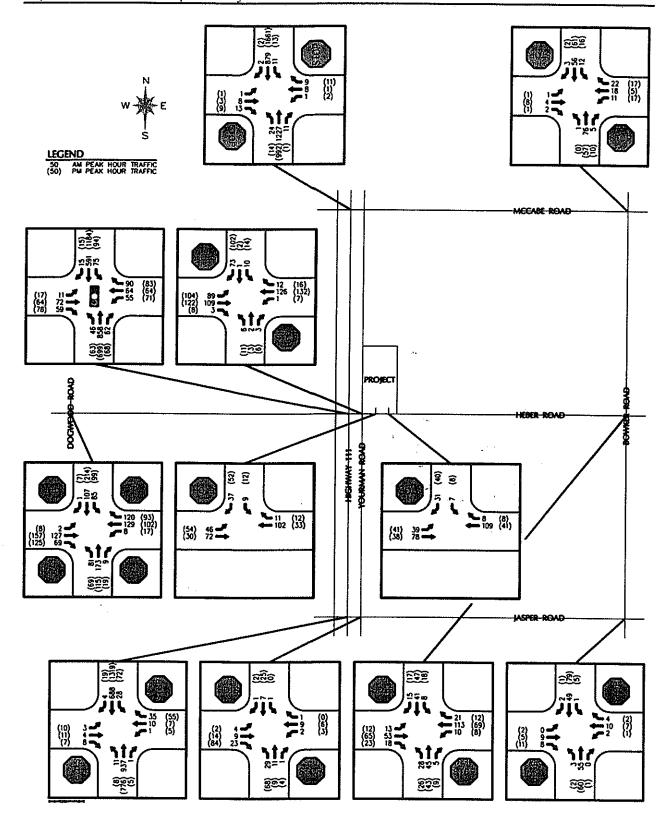


FIGURE 7
2004 PEAK HOUR TRAFFIC VOLUMES

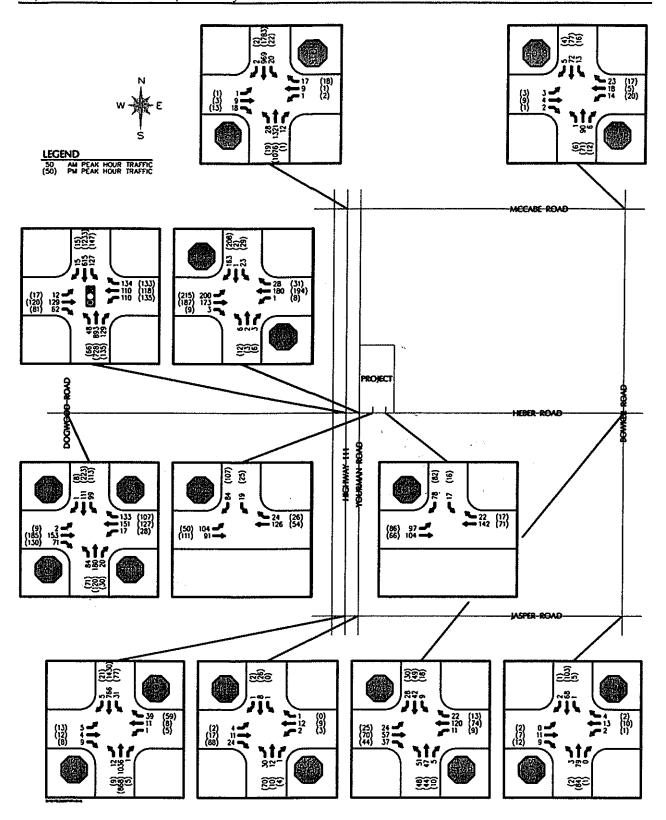


FIGURE 8
2006 PEAK HOUR TRAFFIC VOLUMES

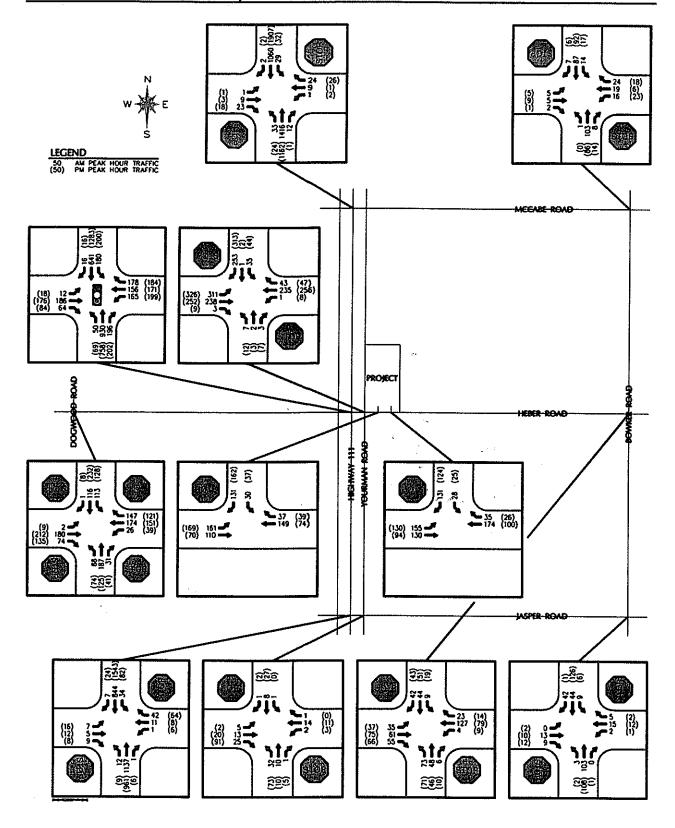


FIGURE 9
2008 PEAK HOUR TRAFFIC VOLUMES

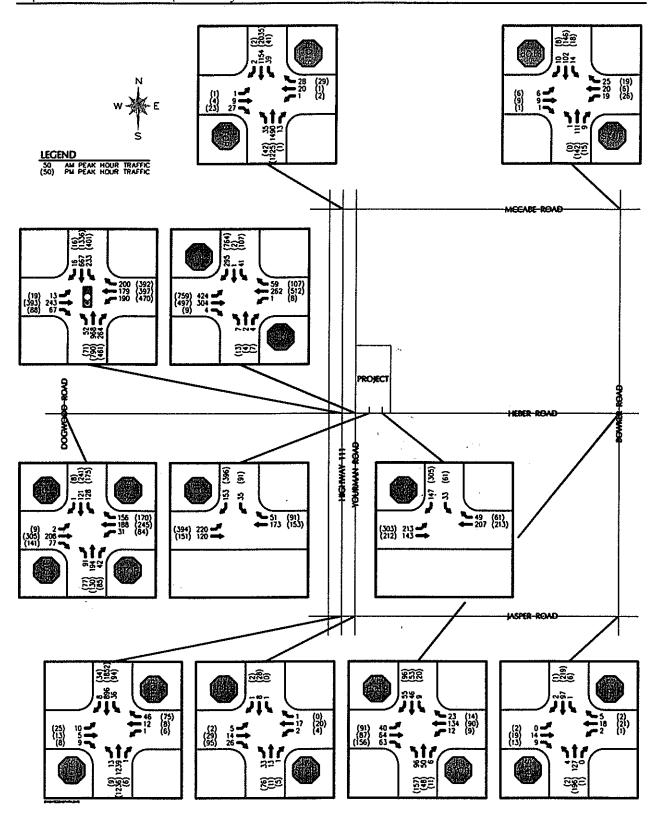


FIGURE 10 2010 PEAK HOUR TRAFFIC VOLUMES

V. TRAFFIC ANALYSIS

Level of Service (LOS) is a standard technique used in traffic engineering to evaluate the performance of roadways and intersections. Briefly defined, it is the qualitative measure of operating conditions of a roadway. These conditions incorporate several variables that affect the quality of traffic flow: speed and travel time, freedom of maneuver, traffic interruptions, comfort and convenience, vehicular delays, and safety. In practice, six Levels of Service ranging from A at best to F at worst are defined and used to describe the traffic flow in terms of delays experienced by motorists. Each of the six service levels defines a subjective range of traffic operating characteristics. The criteria for signalized intersections are shown in Table 3 and for unsignalized intersections are shown in Table 4. Further amplification of LOS A through LOS F for both types of intersection is given in Appendix C.

TABLE 3
LEVEL OF SERVICE DEFINITIONS
SIGNALIZED INTERSECTIONS

Level of Service	Stopped Delay per Vehicle (sec)	e Qualitative Description		
A	≤ 5.0	Drivers can maintain speed with little or no delay		
В	5.1 to 15.0	Drivers have reasonable freedom to select speed		
С	15.1 to 25.0	Drivers feel somewhat restricted		
D	25.1 to 40.0	Drivers have little freedom to maneuver		
E	40.1 to 60.0	Substantial restriction and delay		
F	> 60.0	Long delays and stoppages - Drivers frequently divert to other routes		

TABLE 4 LEVEL OF SERVICE DEFINITIONS UNSIGNALIZED INTERSECTIONS

Level of Capacity Service	Average Total Delay(Sec/Veh)	Qualitative Description		
A	≤5	Little or no delays		
В	>5 and ≤10	Short traffic delays		
С	>10 and ≤20	Average traffic delays		
D	>20 and ≤30	Long traffic delays		
E	>30 and ≤45	Very long traffic delays		
F	>45	**		

* When demand volume exceeds the capacity of the lane extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvements to the intersection.

Level of Service analysis was conducted for traffic flows at the intersections using techniques described in the 2000 *Highway Capacity Manual* (HCM). HiCAP 2000 was used to determine Level of Service for signalized and unsignalized intersections.

Unsignalized Analyses (Chapter 10, HCM) typically result in problems in interpretation of the Level of Service. Capacities defined by unsignalized methodology understate the actual capacity of the minor street. Levels of Service defined by Chapter 17 of the HCM are typically E for any intersecting street of an arterial regardless of the minor street volumes. This does not imply unacceptable operations but should be expected due to arterial street volumes.

Regional transportation studies commonly concentrated on the Levels of Service of the various roadway segments within a study area. Those are often the segments which are designated as having a desirable level of service of C. However, the critical locations within the circulation system are the intersections. The intersections will typically have

a lower Level of Service than the segments between intersections. It will often be true that Level of Service C can be maintained on the roadway segments even though the adjacent intersections may operate at Level of Service D, or in some cases E.

In consideration of the above, the Institute of Transportation Engineers, representing transportational professionals throughout the country, have conducted a number of studies to determine the appropriate Levels of Service. The result has been the recommendation for the maintenance of urbanized intersections at Level of Service D. That level represents an acceptable compromise between the exorbitant costs of the higher Levels of Service and the increasing delays to traffic at the lower Levels of Service.

A. Capacity and Level of Service

The term Level Of Service (LOS) is a standard method used to quantify the operational efficiency of an intersection. The efficiency of the intersection takes into account several variables that affect the quality of traffic flow, namely speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, vehicular delays and safety. The service levels range from LOS A (free flowing traffic) to LOS F (intersection failure). For initial construction, LOS C or better is generally the project's targeted designed level of operation. LOS D is generally considered the lowest advisable service level based on future traffic increases. A summary of the meanings of the various service levels is included in the appendix.

Unsignalized intersection LOS was calculated using the Highway Capacity Software. Analysis of unsignalized intersections typically result in problems in interpretation of the LOS. Capacities defined by unsignalized methodology understate the actual capacity of the minor street. Service levels defined by Chapter 17 of the Highway Capacity Manual are typically LOS E for any street intersecting an arterial, regardless of the minor street volumes. This does not necessarily imply unacceptable operations, but should be expected due to arterial street volumes. When certain movements reach unacceptable levels, traffic will often find other routes of travel.

Level of Service (LOS) analyses were conducted for the intersections using Peak Hour traffic volumes for six separate cases:

	2001 Peak Hour Traffic Volumes	Existing Peak Hour volumes (See Figure 4).
σ	2002 Peak Hour Traffic Volumes	Peak Hour projected into the 2002 Peak Season with the addition of traffic generated by Phase I (See Figure 6).
	2004 Peak Hour Traffic Volumes	Peak Hour projected to the 2004 Peak Season with the addition of traffic generated by Phase I & II (See Figure 7).

	2006 Peak Hour Traffic Volumes	Peak Hour projected into the 2006 Peak Season with the addition of traffic generated by Phase I, II and III (See Figure 8).
	2008 Peak Hour Traffic Volumes	Peak Hour projected into the 2008 Peak Season with the addition of traffic generated by Phase I, II, III and IV (See Figure 9).
	2010 Peak Hour Traffic Volumes	Peak Hour projected into the 2010 Peak Season with the addition of traffic generated by Phase I, II, III, IV (See Figure 10).
σ	2020 Peak Hour Traffic Volumes	Peak Hour projected into the 2020 Peak Season with the addition of traffic generated by Phase I, II, III, IV.

The Level of Service calculation sheets for traffic flows at the intersections are provided in the Appendices and Level of Service impacts are summarized in Tables 5 - 9 on the following pages.

Service levels were initially completed for the existing volumes. These are shown in the column for 2001. The next step was calculating the Level Of Service for each of the other conditions. It was then determined whether or not the service level had depreciated substantially to the point where mitigation measures were required. Additional analyses were performed when necessary to determine what measures of mitigation would be necessary to bring the degraded levels up.

As shown in the attached chart, five of the studied intersections do not need any mitigation at all. At both project driveways onto Heber, Yourman & Jasper, McCabe & Bowker, and Jasper & Bowker, all turning movements are found to have acceptable service levels through the project build-out.

Based on the analysis, four intersections will need traffic signals at project build-out. These intersections are Jasper & Highway 111, Heber & Yourman, McCabe & Highway 111, and Heber & Dogwood. While the Jasper & Highway 111 intersection and the Heber & Yourman intersection show individual movements below Level Of Service C, the overall intersection Level Of Service is C or better. By making minor changes to the signal timings to improve these lower service levels, the required Level Of Service C can still be maintained for the intersection as a whole.

The mitigation measures needed to bring the other intersections to Level Of Service C or better are described in Section VII.

TABLE 5
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

_	_	20	01		02	20	04	20	06	20	08	20	10
Intersection	Mvmt	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	WB	F	F	F	F	F	F	F	F	F	F	F	F
McCabe Rd	EB	F	F	F	F	F	F	F	F	F	F	F	F
& Highway 111	NBLT	A	С	С	С	С	С	С	С	С	С	В	D
	SBLT	В	В	В	В	В	В	В	В	В	В	С	В
	NBLT	A	В	A	В	A	В	Α	В	Α	В	В	С
Highway 111 &	SBLT	В	A	В	A	В	В	В	A	В	A	В	В
Jasper Rd	EB	D	F	E	F	E	F	E.	F	E	F	F	F
	WB	С	E	D	F	D	F	D	F	D	F	F	F
	NB	A	Α	В	В	В	В	С	D	F	F	F	F
Yourman Rd &	SB	Α	A	A	A	A	В	В	С	D	F	D	F
Heber Rd	EBLT	Α	A	A	A	A	A	A	A	À	A	A	E
	WBLT	Α	A	A	A	A	Α	A	Ą	A	A	A	A
	NBLT	A	A	A	A	A	A	Α	A	A	A	A	В
Yourman Rd &	SBLT	A	Α	A	·A	A	A	Α	A	A	A	A	В
Jasper Rd	EB	A	A	A	A	A	Α	A	Α	A	A	A	A
	WB	A	A	A	A	A	A	A	A	A	A	A	Α
	NBLT	В.	В	В	В	В	В	В	В	В	В	С	D
Heber Rd &	SBLT	В	В	В	В	В	В	В	В	В	В	В	В
Bowker Rd	EB	A	A	A	A	A	A	A	Α	A	A	Α	A
	WB	A	A	Α	A	A	Α	A	A	A	A	A	Α
	NB	A	A	A	A	A	A	Α	A	A	A	В	В
McCabe Rd &	SB	Α	Α	A	Α	A	A	A	Α	A	Α	В	В
Bowker Rd	EBLT	A	A	A	A	Α	Α	Α	A	A	A	Α	A
	WBLT	A	A	A	A	A	A	A	A	A	Α	A	Α
Dogwood Rd	NBLT	В	В	В	В	В	В	В	В	В	В	С	С
& Heber Rd	SBLT	В	В	В	В	В	В	В	В	В	В	В	D
Hebel Ku	EBLT	В	В	В	В	В	В	В	В	В	С	В	D

	WBLT	A	В	A	В	A	В	Α	В	A	В	В	D
	INT	В	В	В	В	В	В	В	В	В	С	В	D
	NBLT	A	A	A	A	A	A	Α	A	A	A	A	Α
Jasper Rd &	SBLT	A	A	A	A	Α	A	A	A	A	A	Α	Α
Bowker Rd	EB	A	A	A	A	A	A	A	A	A	A	В	В
	WB	A	A	A	A	A	A	A	A	A	A	В	В
Heber Rd &	SB	4	-	В	С	В	С	В	С	В	С	В	С
West Dr.	EBLT	-		A	Α	A	A	A	A	A	A	A	A
Heber Rd &	SB	•		В	С	В	С	В	С	В	С	В	С
& East Dr.	EBLT		~	A	A	A	A	A	A	A	A	A	Α

- A LEVEL OF SERVICE
- NOT ANALYZED

TABLE 6
SIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

Intersection	Mvmt	2001	2002	2004	2006	2008	2010
	SB	ĄΑ		A/B	B/G	C/B	B/D
Heber Road	WB	C/C	-	C/D	C/C	C/C	C/B
&.	NB	Α/A	_	B/B	В/В	C/B	B/C
Highway 111	EB	C/D	-	C/D	C/C	C/C	C/B
	INT	Α/A	-	B/B	B/B	C/C	B/C

TABLE 7
SIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

Intersection	Mvmt	Jasper & Hwy 111	Heber & Yourman	McCabe & Hwy 111	Heber & Dogwood
	SB	B/B	B/C	Α/A	B/C
	WB	D/E	D/C	C/C	B/B
2010	NB	A/A	B/C	A/A	B/C
	EB	C/C	C/C	C/C	B/B
	INT	A/B	C/C	A/A	B/B

A/B AM PEAK HOUR LOS or DELAY/PM PEAK HOUR LOS or DELAY

NOT ANALYZED

TABLE 8
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

		20	20
Intersection	Mvmt	AM	PM
	NBLT	A	В
Yourman Rd &	SBLT	A	В
Jasper Rd	EB	A	A
	WB	A	A
	NBLT	С	D
Heber Rd &	SBLT	В	В
Bowker Rd	EB	A	Α
	WB	A	A
	NB	В	В
McCabe Rd &	SB	В	В
Bowker Rd	EBLT	A	-A
	WBLT	À	Α
	NBLT	В	B
Jasper Rd	SBLT	В	В
8.	EB	A	Α
Bowker Rd	WB	Α	A
Heber Rd &	SB	В	D
West Dr.	EBLT	A	Α
Heber Rd &	SB	В	С
& East Dr.	EBLT	A	A

TABLE 9
SIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

Intersection	Mvmt	Jasper & Hwy 111	Heber & Yourman	McCabe & Hwy 111	Heber & Hwy 111	Heber & Dogwood
	SB	C/C	C/C	C/C	D/B	C/B
	WB	D/F	E/C	C/C	C/C	C/B
2020	NB	A/B	B/C	A/A	C/D	B/C
	ĒВ	ĄD	B/C	A/C	B/C	C/D
	INT	A/C	C/C	A/B	C/C	C/C

B. Accident Analysis

The existing accident rate for each intersection was determined using the 1998-2001 data provided by CalTrans. By making the gross assumption this rate would stay constant as traffic volumes increased, the numbers of accidents were projected in to the future years.

At the Heber Road and SR-111 intersection, there are currently about 7 accidents per year. Based on the increased volume, that number could be expected to increase to 15 per year by 2020. The number of accidents correctable by signal installation would be four (realizing signals are already in place at this location). The primary type of accident occurring at this intersection is the rear end collision. In order to decrease the frequency of these types of accidents, it is recommended some form of advance flasher be installed notifying motorists when the light is expected to turn red for their approach. Since this intersection is already experiencing 5 of these types of crashes per year, this would be a good mitigation measure to implement immediately, independent of any development at this site.

At the Jasper Road and SR-111 intersection, there are currently about 4 accidents per year. Based on the increased volume, that number could be expected to increase to 7 per year by 2020. The number of accidents correctable by signal installation would be five. This was the only intersection that would warrant a signal based on accidents (in 2010). Since it also meets volume warrants, a signal was previously recommended for this location. The angle accidents are the primary type of crashes occurring, so no other mitigation is expected to be needed.

At the McCabe Road and SR-111 intersection, there are currently about 2 accidents per year. Based on the increased volume, that number could be expected to increase to 3 per year by 2020. The number of accidents correctable by signal installation would be three. The proposal to install a signal at this location when volume warrants are met should adequately mitigate the majority of the accidents occurring here.

At the Heber Road and Dogwood Road intersection, there is currently an average of 1 accident per year. Based on the increased volume, that number could be expected to increase to 2 per year by 2020. None of the accidents are correctable by signal installation. This minimal increase in the number of accidents does not suggest mitigation would be necessary.

VI. Findings

A. Site Accessibility

The conceptual site development plan for this proposed project was reviewed to ensure that external access points onto adjacent roadways would provide for proper vehicle, pedestrian and bicycle safety. Upon construction of the recommended improvements, this development should provide for convenient access to and from the adjacent roadways.

B. Traffic Impacts

The proposed development is expected to generate a combined 38,377 new daily trips upon completion. These trips will access the site from Heber Road, Yourman Road and Correll Road. For the purposes of this study the complete buildout of the project is anticipated for the year 2010. During the 2010 AM Peak Hour 1,969 trips will be generated with 1,141 of these entering the site and 828 exiting the site. During the 2010 PM Peak Hour 3,614 trips will be generated with 1,811 of these entering the site and 1,803 exiting the site.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Site Access

This report has analyzed and evaluated the traffic impacts of the proposed development for the opening year of each unit of the project. Improvements are required to mitigate the traffic impacts due to this development. Based on the results of this traffic impact analysis, it is our opinion that these proposed improvements will provide for safe, convenient site ingress and egress to and from this development.

The Imperial Center will create approximately 38,377 new trips each day. These trips will access the site from Heber Road, Yourman Road and Correll Road. It has been shown that at full build-out of the project, the service level of the internal and adjacent streets will be adequate to handle the traffic from this project. The following recommendations will ensure safe and efficient handling of the traffic:

On-site Improvements

Yourman Road

The preliminary site layout for this project shows the relocation of Yourman Road farther east from its current alignment. The road is also shown as being reconstructed as a two lane roadway with medians and left turn lanes at driveway openings. It will be necessary to clearly sign Yourman Road for northbound traffic where it turns to the west so that through traffic does not end up in the Imperial Center parking lot.

Site Access Driveways

Three driveways are shown from the site onto Heber Road. The easternmost two driveways will allow full turning movements. These driveways should be constructed with one lane in and two lanes out. Due to the close proximity of the western driveway to Yourman Road, it is recommended that this driveway be limited to right turns out only. This will help reduce some of the traffic using the Yourman/Heber intersection, improving the Level Of Service of that intersection. It is noted that in 2020, the southbound movement at this intersection drops to Level Of Service D. Since this location is not suitable for signalization, southbound traffic will have to endure the longer delay.

The other driveways into the site will function adequately with one lane in and one lane out. Traffic volumes will be spread out over these driveways, coupled with the fact that they are onto lower volume roads, providing for high service levels.

Off-site Improvements

Heber Road

It is recommended that Heber Road be widened to five lanes prior to Phase IV (2008) from Scaroni Road on the west to the east edge of the project. This will provide the necessary capacity at the Highway 111 intersection and the project driveways. An additional southbound left turn lane and a northbound right turn lane will be needed to accommodate 2010 traffic.

Jasper Road and Highway 111

A traffic signal will likely be warranted at the Highway 111 and Jasper Road intersection with the addition of Phase I traffic. Though this phase adds little traffic to this intersection, the intersection is currently operating at poor levels of service. This project will add an additional 1,084 trips to this intersection at build-out, or 32%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$40,000.

McCabe Road & Highway 111

A traffic signal will likely be warranted at the Highway 111 and McCabe Road intersection at project build-out. This intersection is currently operating at poor levels of service for eastbound and westbound traffic. This project will add an additional 630 trips to this intersection at build-out, or 18%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$22,500. It is also recommended that McCabe Road be marked with two lanes approaching the intersection, a left turn lane and a combined through/right turn lane.

Yourman Road and Heber Road

In addition to the previously described improvements to Heber Road, a traffic signal will be needed at this intersection with the addition of Phase IV (2008) traffic. The Level Of Service calculations show a northbound Level Of Service of D in 2006, but if the roadway is realigned as proposed, this will not be the case. Since the need for this signal is due almost entirely to project generated traffic, the entire cost for this signal would be assigned to the developer. It will be important to coordinate this signal with the signal on Highway 111 so that backups do not occur along Heber.

Heber Road & Highway 111

At project build-out, dual southbound left turn lanes will be required, as well as a northbound right turn lane.

Based on existing accident data, it is recommended that some form of advance notice be given to Highway 111 traffic of impending signal changes. This will help to reduce the number of rear end accidents occurring at this location. Since this is a pre-existing condition, it would not be the responsibility of this development.

Dogwood Road and Heber Road

A traffic signal will likely be warranted at the Dogwood Road and Heber Road intersection at project build-out. This project will add an additional 723 trips to this intersection at build-out, or 43%. Based on a signal cost of \$125,000, the fair share cost to the Imperial Center project towards this signal would be \$53,750.

Bowker Road and Heber Road

At project build-out, left turn lanes will be needed for northbound and southbound traffic at this intersection.

The design of all intersections and roadways shall be in accordance with Caltrans Standard Drawings, Imperial County guidelines, City of Calexico Standards and the latest editions of the MUTCD and AASHTO Green Book.

APPENDIX B LEVEL OF SERVICE ANALYSIS



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Peak					0.69	_		-	U	0.70		14	1	0	15 0.65	5	0	0	0	5	
Factor					2					0					0.03					0.75 0 I	
reak Hour F Intersecti	rom 1 13:00		o 13:4	15 · P	eak 1 of	1				1						· 				1	
Volume	0	44	0	0	44	2	5	0	0	7	2	26	2	^	20	_	_			Į	
Percent	0.0	100	0.0	0.0		28.	71.	_	•			86.		0	30	3 37.	4 50.	10	0	8	89
Volume		.0					4	0.0	0.0		6.7	7	6.7	0.0			0	12. 5	0.0		
Volume	0	44 20	0	0	44	6 2 0	5	0	0	7	2	26	2	0	30	5 3	4	ĺ	0	8	89
Peak	U	20	U	0	20	0	1	0	0	1	1	4	1	0	6	0	0	ì	ō	ĭ	28
Factor										[•		1	0.795
	13:30				1	13:00					13:00				ĺ	10.15				ļ	
Volume	0	20	0	0	20	1	1	0	0	2	0	9	1	0	10	13:15 3	1	^	^		
Peak Factor					0.55				-	0.87	-	-	*	J	0.75	3	1	0	0	0.50	
ractor					0]					5		,			0					0.50	

o's Shopping Center

File Name: 01104bowjas Site Code: 00000000

Site Code : 000000000 Start Date : 11/13/200

Groups	Printed- Unshifted	

	I	BOWKE	D DN	 -		14 ODE	Groups	Printed-	- Unshifte					IA ODE	5 55		
		From I				JASPE From				BOWK From				JASPEI From V			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:00 06:15	0 1	3 5	0	0	0	0	0	0	1	5	. 0	0	0	2	0	0	11
06:30	0	10	0	0	0	1 2	0	0	0	11 7	1 0	0	1 0	0 2	1	0	21
06:45	ő	10	ŏ	ŏ	1	2	1	o	0	7	1	Ö	5	0	0	0	21 27
Total	1	28	ō	ő	- Î	5	ī	ŏ	1	30	2	Ö	6	4	1	0	80
				'	-	_						- ,	-	-	-	~ ,	00
07:00	0	3	0	0	1	1	0	0	Ö	4	1	0	1	2	0	0	13
07:15	2	11	o,	0	1	2	0	0	0	14	1	0	-2	2	0	0	35
07:30 07:45	0	9 8	1 0	0	1	3	1	0	0	11	0	0	0	3	0	0	29
Total	2	31	1	0	0 3	<u>1</u>	<u>0</u> 1	0	2 2	<u>9</u> 38	0 2	0	<u>0</u> 3	<u>1</u> 8	0	0	21
	_	0.	_	٠,	J	,	4	۱ ت	-	Ju	۷.	VΙ	J	0	U	VΙ	98
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	οl	0
08:15	0	0	0	0	0	0	0	0	0	Ó	0	Ŏ	ō	ō	ō	ŏ	ŏ
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<u>08:45</u>	0	<u> </u>	0	0	0	0	0_	<u> </u>	0	0	0	0	0	0	0	0	0
Total	U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	8	0	οl	0	0	0	ol	0	5	0	0	0	0	0	ol	13
09:15	ĺ	3	ŏ	٥١	ŏ	ŏ	ŏ	ŏl	ŏ	, 3	ĭ	ŏ	ő	ŏ	ő	ŏ	8
09:30	0	7	0	0	0	1	0	0	0	7	Ō	0	2	ō	ŏ	ŏ	17
09:45	0	9	0	0	0	2	0	0	3	7.	2	0	1	1	0	0	25
Total	1	27	0	0	0	3	0	0	3	22	3	0	3	1	0	0	
10:00	0	3	0	0	0	0	0.	ol	0	12	1.	٥l	0	1	^	0.1	17
10:15	ő	7	0	ő	2	1	0.	0	1	12	2	0	0 1	1 1	0	0	17 27
10:30	2	5	1	ŏ	ő	1	1	ŏ	ō	8	2	öl	ó	1	2	ŏ	23
10:45	0	. 3	ō	0	0	ī	3_	ŏ	ŏ	7	. ō	ŏl	ŏ	ō	Õ	ŏ	14
Total	2	18	1.	0	2	3	4	0	1	39	5	0	1	3	2	Ō	81
11.00	1		-			_	_	- 1		_	_	- 1	_	_	_	_ 1	
11:00 11:15	1 0	4 8	1 1	0	0	1 0	0	0	0 1	1	0	0	0	3	0	ŏ	11
11:15	0	0.	0	0	0	0	0	0	0	7 1	0	0	0	0	1 0	0	18
11:45	ŏ	11	1	ŏ	0	0	0	0	Ö	3	0	ŏ	0	1	1	8	1 17
Total	ī	23	3	0	0	1		ő	1	12	0	0	0	4	2	8	47
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12:00	0	5	0	0	0	2	1	0	. 0	5	0	0	1	0	0	0	14
12:15 12:30	0 1	8	0	0	Ŏ	1	0	0	0	10	0	o	0	2	0	0	21
12:45	0	9 8	1 0	0	0	0 1	0 1	0	0	6 7	0	0	0	0	0	0	18
Total	1	30	1	ő	- 6	4	2	ő	0	28	1	0	1	2	$\frac{1}{1}$	- 8	18 71
			_	• 1	ŭ	•	_	• 1	·		•	• 1	•	-	•	٠,	, 1
13:00	0	6	0	0	1	1	0	0	0	9	1	0	0	1	0	0	19
13:15	0	8	0	0	0	2	0	0	1	8	0	0	3	1	0	0	23
13:30 13:45	0	20	0	ŏ	0	1	Õ	0	1	4	1	0	0	0	1	0	28
Total	<u> </u>	10 44	0	0	<u>1</u> 2	<u>1</u> 5	<u>0</u> _	0	0	<u>5</u> 	<u>0</u> 2	0	<u> </u>	<u>2</u> 4	0	0	<u>19</u> 89
. Otal	O	44	U	01	2	5	U	υį	4	20	2	ΟŢ	3	4	1	υį	69
14:00	0	0	0	0	0.	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	ō	ō	Ō	Ō	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	Ö	ŏ
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:00	0	9	0	0	0	0	,	0	0	0	^	ام	•	_	0	ام	21
15:15	ő	16	0	ŏ	1	1	1 0	ő	0	9 13	0 0	0	2 2	0 2	0	0	21 35
15:30	ŏ	14	1	ŏl	Ô	Ô	ő	ő	ŏ	7	1	Ö	0	0	0	öl	23
15:45	Ö	14	1	ŏ	ŏ	4	ŏ	ŏ	ŏ	7	ī	ŏ	4	ŏ	ő	ŏ	31
Total	0	53	2	0	1	5	1	0	0	36	2	Ö	8	2	· 0	Ö	110
				•					-			- 1	_	_	_	- 1	

File Name: 01104bowheb Site Code: 0000000

Start Date : 11/14/2001

		F	OWKER					EBER					OWKER			ļ		EBER			
Start Time		Thr u	Left	Ped s	App. Total	Rig ht	Thr		Ped s	App. Total	Rig ht	Thr		Ped	App.	Rig	Thr	rom W	Ped	App.	Int.
Peak Hour I	rom 1	4:00 1	to 17:4	45 - P	eak 1 o	1				rotar	110	u		S	Total	ht	u		5	Total	Total
Intersecti on	16:00																				!
Volume	4	45	17	0	66	12	64	8	0	84	9	41	5	0	55	3	61	0	0	64	050
Percent	6.1	68. 2	25. 8	0.0		14. 3	76. 2	9.5	0.0		16.	74. 5	9.1	0.0		4.7	95.	0.0	0.0	04	269
Volume	4	45	17	0	66	12	64	8	0	84	9	41	5	0	55		3		_		
Volume Peak Factor	2	8	5	0	15	6	20	3	Ö	29	2	9	2	0	13	3	61 19	0	0	64 20	269 77 0.873
High Int. Volume	16:15 1	10		^		16:00					16:45				,	16:00					
Peak Factor	1	12	4	O	17 0.97 1	6	20	3	0	29 0.72 4	3	14	2	0	19 0.72 4	1	19	0	0	20 0.80 0	

File Name: 01104bowheb

Site Code : 00000000 Start Date : 11/14/200

				· .				s Printed	- Unshifte	d								
		BOWKI From					R RD				ER RD			HEBE	-			
_		FIUIT	NOITH			From	East	·		From	South			From	West			2000
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total	anamaia .
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		ı
16:00	2	8	5	0	6	20	3	0	2	9	2	0	1	19	0	0	77	Block was
16:15	1	12	4	0	1	12	1	0	2	8	1	0	1	11	0	ŏ	54	gowan.
16:30	0	12	5	0	3	17	1	0	2	10	0	0	1	17	Ó	o l	68	£.:
16:45	1	13	3	0	2	15	3	0	3	14	2	0	0	14	Ō	ŏl	70	
Total	4	45	17	0	12	64	8	0	9	41	5	0	3	61	0	0	269	
17:00	0	14	3	0	1	13	7	0	1	6	1	0	0	10	2	ol	58	ie ver
17:15	0	8	7	0	5	12	5	0	2	8	2	0	0	18	ō	. 0	67	
17:30	1	4	2	0	1	12	4	0	3	5	1	0	0	19	Õ	ñ	52	1
17:45	1	6	5	0	3	11	1	0	0	6	2	0	0	13	ī	ŏ	49	жаски
Total	2	32	17	0	10	48	17	0	6	25	6	0	0	60	3	Ö	226	L:
Grand Total Apprch % Total %	38 8.2 1.7	325 70.0 14.7	101 21.8 4.6	0.0 0.0	114 14.0 5.2	623 76.6 28.2	76 9.3 3.4	0.0 0.0	53 12.4 2.4	317 73.9 14.4	59 13.8 , 2.7	0.0 0.0	23 4.6 1.0	451 90.2 20.4	26 5.2 1.2	0.0 0.0	2206	

			WKEF					EBER		-		BO	OWKER	RD		•		EBER			
Start Time	ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped	App. Total	Int. Total
eak Hour l	From 0	6:00 t	o 09:	45 - Pe	eak 1 o	f 1		 								1	 .		<u></u>	10(8)	Liviai
(iecti on	07:00)																			
Volume	4	39	8	0	51	20	107	10	0	137	5	43	10	0	58	4	50	4	0	58	304
Percent	7.8	76. 5	15. 7	0.0		14.	78. 1	7.3	0.0		8.6	74. 1	17. 2	0.0		6.9	86. 2	6.9	0.0		
Volume	4	39	. 8	0	51	20	107	10	0	137	5	43	10	0	58	4	50	4	0	58	304
Volume	1	13	2	0	16	5	29	3	0	37	2	14	3	0	19	1	11	2	Ō	14	86
Peak Factor																					0.884
High Int.	07:45					07:45	:				07:45					07.00					
Volume	1	13	2	0	16	5	29	3	0	37	2	14	3	0	19	07:30 2	17	,	0	20	,
Peak			-		0.79		4.5	5	U	0.92		1-7	J	U	0.76	_	1,	1	U	20 0.72	
Factor					7					6	1				3					5	
eak Hour F	rom 10	0:00 t	o 13:4	45 - Pe	ak 1 o	f 1															
Intersecti	13:00																				1
on Volume	3	40		_				_	_				_		_ :					- (
	=	48 81.	8 13.	0	59	′	55 77	9	0	71	4	27	3	0	34	2	41	2	0	45	209
Percent	5.1	4	6	0.0		9.9	77. 5	12. 7	0.0		11. 8	79. 4	8.8	0.0		4.4	91.	4.4	0.0		·
Volume	3	48	8	0	59	7	55	ý	0	71	4	27	3	0	34	2	41	2	0	45	209
Volume	0	15	2	0	17	3	14	ī	ō	18	0	11	1	ō	12	ō	11	ī	ő	12	59
Peak																					0.886
Factor	10.45																			Ī	
High Int. Volume	13:45	17	3	0	20	13:45 2		2	0	25	13:15	10	,	_	, [13:00		_	_		
Peak	Ü	1/	3	U	0.73		20	3	0	25 0.71	1	10	1	0	12 0.70	1	12	0	0	13	
Factor					8					0.71					8					0.86	
					- 1					٠,					01					21	

Lo's Shopping Center Traffic Impact Study

File Name: 01104bowheb

Site Code : 000000000 Start Date : 11/14/2001

								Groups	Printed	- Unshifte	h			Pa	ige No) : 1		
_			BOWKI From				HEBE From	RRD		Orisinite	BOWKE From S				HEBE From			
	Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
-	Factor 06:00 06:15	1.0 1 1	1.0 2 7	0	1.0	1.0	0	3	1.0	1.0	1.0 5	1.0	1.0	1.0	1.0	1.0	1.0	23
	06:30 06:45	0 2	11 9	2	00	3 5	18 25	1 2	0	1 0	7 9	1 1	0	0	10 13	1 1	0	52 69
-	Total	4	29	<u>2</u> 6	0	13	28 71	<u>2</u> 8	0	1 2	<u>8</u> 29	<u>1</u> 3	0	<u>0</u>	16 47	<u> </u>	0	73 217
	07:00 07:15 07:30 07:45	1 1 1	9 8 9 13	2 0 4 2	0 0 0	5 3 7 5	30 26 22 29	1 2 4 3	0	2 1 0 2	6 9 14 14	1 3 3 3	0 0	0 1 2	9 13 17 11	0 1 1	0 0	66 68 84
	Total	4	39	8	0	20	107	10	Ö	5	43	10	0	4	50	<u>2</u> 4	0	<u>86</u> 304
	08:00 08:15 08:30 08:45 Total	2 2 0 1 5	5 7 7 5 24	7 0 2 1	0 0 0	5 3 3 2	21 21 14 12	1 1 1	0 0 0	0 1 1 0	9 8 9 5	2 3 2 0	0000	0 0 1 1	9 6 4 8	1 3 0 1	0 0 0	62 55 44 37
	09:00	0	0	0	10		68	4	0	2	31	7	0]	2	27	5	0	198
	09:15 09:30 09:45 Total	0 0 0	0 0	0 0 0	0 0 0	0 0 0 0	2 0 0 0	0 0 0 0	0 0 0	0 0 0 0	0 0 0	0 0 0 0	0 0 0	0 0 0 0	2 0 0 0	0 0 0	0 0 0	4 0 0
1. }	10:00	1	5	3	0	0	10	0	0	2	8 ,	2	- 0	-	_	0	0	
	10:15 10:30 10:45 Total	0 0 1 2	7 1 2	0 2 2 7	0 0	2 1 3 6	12 13 18	0 1 0	0 0 0	1 1 1 5	8 9 4 29	0 4 2	0 0	0 0 0	5 13 3 12	0 0 0	0 0 0	36 43 35 <u>45</u>
	11:00	1	3	4	0	4	18	0	0			8	0	0	33	0	0	159
	11:15 11:30 11:45 Total	0 1 1 3	4 9 5 21	5 2 0	0 0	5 4 2 15	16 15 13	1 1 2 4	0	0 2 0 3	12 5 6 8	2 2 0 1	0 0 0	1 4 0 0	9 12 9 13	0 0 2 1	0 0 0	54 56 49 49
	12:00	3	2	1			62	·	0	5	31	5	0	5	43	3	0	208
	12:15 12:30 12:45 Total	1 1 2 7	4 9 8 23	0 1 1 3	0 0 0	1 4 4 2 11	9 10 9 8	2 1 2 4	0 0 0	1 1 3 0	7 8 4 7	1 0 2 0 3	0 0 0	0 2 0 1	12 7 7 7	0 3 0 0	0 0	39 41 42 40
	13:00	1	5				36	9	0	5	26	3	0	3	33	3	0	162
	13:15 13:30 13:45	2 0 0	11 15 17	0 3 2 3	0 0 0	1 1 3 2	13 8 14 20	3 2 1 3	0 0 0	1 1 0 2	6 10 11 0	1 1 1 0	0 0 0	1 1 0 0	12 11 11 7	0 1 1 0	0 0 0	44 52 59 54
	Total	3	48	8	0	7	55	9	0	4	27	3	0	2	41	2	0	209
	14:00 14:15 14:30 14:45	0 0 0	0 0 0	0 0 0	0000	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0
···· (Total	0	0	0	0	0	0	0	0	Ö	0	Ö	0	ō	0	0	0	0
	15:00 15:15 15:30 15:45 Total	2 0 2 0	12 12 13 12	4 2 4 4	0 0 0 0	0 2 2	14 13 10 20	1 1 3 1	0 0 0	2 2 4 2	11 7 11 6	2 2 5 0	0 0 0	0 0 1 3	15 13 12 14	0 1 0	0 0 0	66 53 67 64
	ıvlai	4	49	.14	0	7	57	6	0	10	35	9	0	4	54	1	0	250

File Name: 01104bowmcc

Site Code : 00000000

Start Date : 11/14/2001

Page No : 3

		F	WKER					CABE					OWKER		****			CABE		***************************************	
Start	Rig	Thr	Left	Ped	App.	Rig	Thr	Left	Ped	App.	Rig	Thr	Left	Ped	App.	Rig	Thr		Ped	App.	Int.
Time	ht	<u>u</u>			Total	ht	u	Leit	s	Total	ht	u	Leit	s	Total	ht	u	Left	s	Total	Total
ak Hour F	rom 1	4:00 t	o 17:4	45 - Pe	eak 1 o	f 1															
ntersecti	16:30																				
on	10.00					l															
Volume	0	47	15	0	62	16	5	15	0	36	8	43	0	0	51	1	8	0	0	9	158
Percent	0.0	75.	24.	0.0		44.	13.	41.	0.0		15.	84.	0.0	0.0		11.	88.			•	100
	0.0	8	2	0.0		4	9	7	0.0		7	3	0.0	0.0		1	9	0.0	0.0		
Volume	0	47	15	0	62	16	5	15	0	36	8	43	0	0	51	ī	8	0	0	9	158
Volume	0	10	1	0	11	6	0	6	0	12	2	15	0	0	17	1	2	Õ	ŏ	3	43
Peak														•		_	_	-	•	•	0.919
Factor																					0.515
High Int.	16:30					16:45	i				16:45					17:15					
Volume	0	14	3	0	17	6	0	6	0	12	2	15	0	0	17	0	5	0	0	5	
Peak					0.91		_	-	_	0.75			_	Ū	0.75		•	Ü	U	0.45	
Factor					2					0					0.,0					0.45	
					- 1	'				•	1		**		U į					U	

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File Name: 01104bowmcc Site Code: 0000000r

Start Date : 11/14/200,

) [20014					Groups	<u>Printed</u>	 Unshifte 	ed							
			BOWK				MCCAI				BOWK	ER RD			MCCA	BE RD		
			From	NORIN			From	East			From 5	South			From			
	Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int.
ı į	Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-10	- , ,		Total
ı	16:00	0	13	3	0	3	0	2	0	0	12	1.0	1.0	1.0	1.0	1.0	1.0	
İ	16:15	0	9	1	ñ	3	1	7	Ö	2	8	Ū	0	0	1	0	0	34
	16:30	0	14	3	اۃ	4	1	á	ő	2	_	Ţ	Ŭ	Ü	2	0	0	34
	16:45	0	10	ī	ň	6	7	5 6	- 1	3	.9	0	0	0	0	0	0	37
	Total	0	46	8	- 6	16	2	18			15	<u> </u>	0	1	2	0	0	43
		•		•	O [10	2	10	0	/	44	1	0	1	5	0	0	148
	17:00	0	11	6	01	5	2		ام		_	_	- 1				•	
	17:15	ŏ	12	5	ŏl		2	4	0	Ţ	/	0	0	0	1	0	0	37
	17:30	ŏ	7	6	- 1	7	2	2	0	2	12	0	0	0	5	0	0	41
	17:45	ő	8	Ö	0	3	2	3	0	2	5	1	0	0	1	0	0	30
-	Total	0	38	17	0		2	0	0	2	6	1	0	0	1	0	ol	23
	Total	U	30	7.7	0	12	8	9	0	7	30	2	0	0	8	0	0	131
	Grand Total Apprch % Total %	5 1.1 0.4	352 78.7 28.0	90 20.1 7.1	0.0 0.0	113 39.8 9.0	85 29.9 6.8	86 30.3 6.8	0.0 0.0	56 12.4 4.4	382 84.9 30.3	12 2.7 1.0	0.0 0.0	16 20.5 1.3	57 73.1 4.5	5 6.4 0.4	0.0 0.0	1259

The section 07:15	App. Int. Total 6 179 6 179 1 53 0.844
Peak Hour From 06:00 to 09:45 - Peak 1 of 1	6 179 6 179 1 53 0.844
Percent 1.8 77. 21. 0.0 44. 36. 19. 0.0 47 3 65 1 0 69 2 4 0 0 33. 66. 0.0 0.0 Volume 1 44 12 0 57 21 17 9 0 47 3 65 1 0 69 2 4 0 0 33. 66. 0.0 0.0 Volume 1 44 12 0 57 21 17 9 0 47 3 65 1 0 69 2 4 0 0 37 7 2 1 17 9 0 47 3 65 1 0 69 2 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 179 6 179 1 53 0.844
Percent 1.8 77. 21. 0.0 44. 36. 19. 0.0 4.3 94. 1.4 0.0 33. 66. 0.0 0.0 Volume 1 44 12 0 57 21 17 9 0 47 3 65 1 0 69 2 4 0 0 33. 66. 0.0 0.0 Peak Factor High Int. 08:00 Volume 1 15 3 0 19 Peak Factor O.75 Factor 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 179 1 53 0.844
Percent 1.8 77. 21. 0.0 44. 36. 19. 0.0 43. 94. 1.4 0.0 33. 66. 0.0 0.0 Volume 1 44 12 0 57 21 17 9 0 47 3 65 1 0 69 2 4 0 0 Peak Factor High Int. 08:00 Volume 1 15 3 0 19 Peak Factor 0.75 0.75 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 179 1 53 0.844
Volume 1 44 12 0 57 21 17 9 0 47 3 65 1 0 69 2 4 0 0 Peak Factor High Int. 08:00 Volume 1 15 3 0 19 5 9 1 0 15 0.78 Peak 0.75 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 53 0.844
Peak Factor High Int. 08:00 Volume 1 15 3 0 19 5 9 1 0 15 0 7:30 07:15 0 3 0 0 0 9 9 1 0 15 0 1 21 0 0 22 0 0 0 0 0 0 0 0 0 0 0 0 0	1 53 0.844
High Int. 08:00 Volume 1 15 3 0 19 Peak 0.75 Factor 0 07:30 Volume 1 15 3 0 19 5 9 1 0 15 0.78 0.78 3 0 7:30 07:15 0 3 0 0 07:15 0 3 0 0 07:15 0 3 0 0 07:15	
Volume 1 15 3 0 19 5 9 1 0 15 07.30 1 21 0 0 22 07.15 0 3 0 0 Factor 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Peak 0.75 0.78	
reak Hour From 10:00 to 13:45 - Peak 1 of 1	0.50
Intersection 10.00 to 15:45 - Peak 1 of 1	0]
interpetition and a second sec	
on 13:00	
Volume 0 42 11 0 53 8 9 14 0 31 5 27 2 0 34 2 5 0 0	7 125
Percent 0.0 /9, 20, 0.0 25, 29, 45, 0.0 14, 79, 28, 71	/ 125
Volume 0 42 11 0 53 8 0 2 55 7 4 5.5 0.0 6 4 0.0 0.0	
Volume 0 42 11 0 53 8 9 14 0 31 5 27 2 0 34 2 5 0 0 Peak	7 125 1 36
Factor	0.868
High Int. 13:45	
volume 0 15 7 0 22 3 3 5 0 11 2 10 1 0 13 1 3 0 0	3
	0.58

Lo's Shopping Center Troffic Impact Study

File Name: 01104bowmcc

Site Code : 00000000

Start Date : 11/14/200,

								Ground	Drintad	- Unshifte	d			Pa	ge No	: 1			
		-	BOWK From				MCCAE From	3E RD	s Plinteu	- Onstante	BOWK From				MCCAB From \				
Start		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total	
	actor 06:00	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0 6	1.0	1.0	1.0	1.0	1.0	1.0]
	06:15 06:30	0	10 11	3	0	4	Ô	0	0	4	6	Ō	0	2	4	1	ō	16 34	Control of the Control
	6:45	0	9	1	0	4 2	1 4	1 3	0	2 3	10 8	0 1	0	0 0	1 1	0 0	0	34 32	2000
	Total	1	35	9	0	10	5	4	0	12	30	1	0	2	6	1	0	116	-
)7:00)7:15	0	10 6	5 2	0	7 7	3 1	2 3	0	0 1	13 8	0	0	0	0 3	0	0	40	
C)7:30)7:45	0	12 11	3	0	5	9	1	0	1	21	0	Ö	1	0	Ō	0	31 53	
	Total	0	39	14	0	23	3 16	10	0	2	20 62	1	0	2	4	<u> </u>	0	<u>49</u> 173	- [
	8:00	1	15	3	0	5	4	1	0]	1	16	0	0	0	0	0	٥l	46	r~s
)8:15)8:30	0	6 9	1 1	0	3 1	4 0	1 1	0	2 2	1·1 10	0 1	0	0 0	2 1	0	0	30 27	
	8:45 Total	0	<u>5</u> 35	0 5	0		2 10	<u>ō</u> 	<u>0</u>	<u>0</u> 5	8 45	0	0	Ō	0	0	0	17	•
	9:00	_		_				_		-		1	0	0	3	1	0	120	
0	9:15	0 0	0	0 0	0	0 0	0 0	0	0	0 0	0 · 0	0	0	0	0	0	0	0	and the second
	9:30 9:45	0	0	0	0	0	0	0	0	0	0	0	. 0	0	0	0	0	0	
(Total	0	0	0	0	0	Ö	0	Ö	Ö	0	0	Ö	ő	0	ō	ō		
	0:00 0:15	0	2 2	2 3	0	2 3	3	3	0	1	8	- · · 0.	0	2	1	0	0	24	
1	0:30	0	4	1	0	3	2 4	3 1	0	1 1	7 7	0	0	0 0	0 1	0 1	0	21 23	And the second
	0:45 Fotal	1	· 6	<u>2</u> 8	0	<u>4</u> 12	5 14	8	0	4	<u>8</u> 30	0	0	0 2	3	0	0	<u>29</u> 97	No de de la companya
	1:00	0	3	1	0	0	2	2	0	1	14	0	0	2	3	1	o l	29	
	1:15 1:30	0	9 7	1 1	0	1	0 2	0 1	0	1 2	10 12	0 1	0	2 0	3 4	0	0	27 31	
	1:45 Total	0	5 24	<u>2</u> 5	0	<u>0</u> 2	<u>2</u>	1 4	o o	<u>0</u>	8	1	0	0	1	Ō	0	20	in y
	2:00			_	,		_	•		-	44	2	0	4	11	1	0	107	L
12	2:15	0	4 5	1 3	0	2	3 0	1 0	0	· 1	8 12	0 1	0	0 1	0 1	0	0	21 30	r er
12	2:30 2:45	1 0	9 10	1 0	0	2 1	2 1	1 1	0	1 2	6 5	0 1	0	0	2 2	0	0	25	
T	otal	2	28	5	0	9	6	3	0	7	31	2	Ö	1	5	ō	0	<u>23</u> 99	\$1.41.4i
	3:00 3:15	0	6 8	0 2	0	1	3	3	0	3	5	0	0	0	1	0	0	22	
13	3:30	0	13	2	o	3 0	3 2	5 5	0	0 2	10 10	1 1	0	1 0	1 1	0	0	34 36	
	3:45 otal	<u>0</u> 0	15 42	7 11	0	<u>4</u> 8	1 9	1 14	0	<u>0</u> 5	<u>2</u> 27	0 2	0	1 2	<u>2</u> 5	0	0	33 125	
14	1:00	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	
14	l:15 l:30	0 0	0	0	0	0	ō o	0	0	Ö O	0	0	0	0	0	0	0	0	1 %
14	1:45	0	0	0		0	Ō	Ō	0	0	0 0	0 0	0	0 0	0	0	0	0 0	
1	otal	0	0	0	0]	0	1	0	0	0	0	0	0	1	0	0	0		
15	5:00 5:15	0 0	11 13	1 2	0	1 1	3 2	4 2	0	0 2	13 8	0	0	0 1	3 0	1 0	0	37 31	Boots assumed to
15	30 3:45	o o	15 12	4	o o	3	1	3	0	1	10	0	0	Ō	2	0	0	39	
T	otal	0	51	8	0	5 10.	<u>2</u> 8	13	0	<u>0</u> 3	<u>8</u> 39	0	0	0 1	<u>2</u> 7	0 1	0	34 141	F
													-				•		

File Name: 01104yrmjas Site Code: 00000000

Start Date : 08/02/2

Γ	· · · · · · · · · · · · · · · · · · ·						nnted-Traf	fic Volumes						
			JRMAN RD)		ASPER RD		YO	JRMAN RE)	JA	SPER RD		
} -			om North			rom East			om South	1	F	rom West		
	Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
L	<u>Factor</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	mic. rotal
	16:00	3	4	0	0	1	0	1	4	19	23	1	1.0	56
	16:15	0	7	0	0	ï	ol	3	વં	15	6	i	χI	
	16:30	0	5	Ō	Õ	ō	2	ñ	Š	9	9	2	Ž,	36
	16:45	0	6	ŏl	ň	ī	2	1	2	15	-	3	9	35
	Total	3	22	ŏ	0	5	4	5	1E		22	3		54
		Ū		0 1	U	5	**	ວ	15	58	60	8	1	181
	17:00	0	8	01	0	0	οl	1	3	22	17		۰.	 _
	17:15	ŏ	6	ŏl	0	1	3	<u> </u>	2	22	17	4	0	55
	17:30	2	Ã	ő	0	1	<u>.</u>	2	2	14	19	1	0	46
	17:45	2	2	- 1	Û	2	0	U	1	14	23	4	1	51
		<u>~</u>		<u> </u>	<u> </u>		2	0	2	15	13	1	0	37
	Total	2	21	0	0	4	3	3	8	65	72	10	1	189
	Grand Total	15	114	3	3	56	22	24	101	555	431	64	201	1410
	Apprch %	11.4	86.4	2.3	3.7	69.1	27.2	3.5	14.9	81.6			22	1410
	Total %	1.1	8.1	0.2	0.2	4.0					83.4	12.4	4.3	
	70		U. 1	0.2	0.2	4.0	1.6	1.7	7.2	39.4	30.6	4.5	1.6	

	•												•				[
				MAN RC)			PER RD				MAN RD)	<u> </u>		ER RD]
	Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
	Peak Hour Fro	m 06:0	0 to 09	:45 - P	eak 1 of	1		•		ı							Total	i i otai j
[Intersection		_								,							1
	Volume	1	7	1	9	1	7	, 2	10	1	11	28	40	22	7	4	33	
	Percent	11.1	77.8	11.1		10.0	70.0	20.0		2.5	27.5	70.0		66.7	21.2	12.1		
	Volume Volume	1	7	1	9	1	7	2	10	1	11	28	40	22	7	4	33	92
į	Peak Factor	0	1	0	1	1	3	Q	4	0	. 1	10	11	5	2	2	9	25
		07.15				l												0.920
	Volume	07:15 0		_		07:45	_	_	_	07:30				08:00				
	Peak Factor	U	. 4	0	4	1	3	0	4	0	5	7	12	7	4	0	11	
í	I can I actor				0.563	f			0.625				0.833				0.750	
	² eak Hour Fro	m 10·0	O to 12	AE D	ا کا ا													
ļ	Intersection	12.15	0 (0 13)	43 · Pt	Bak I of .	<u>1</u> !			1	i				,				
	Volume	0	11	٥	11	_		_		_								
		_	100.	U	11	0	4	6	10	5	12	86	103	50	4	4	58	182
	Percent	0.0	0	0.0		0.0	40.0	60.0	i	4.9	11.7	83.5		86.2	6.9	6.9		
	Volume	0	11	0	11	0	4	_		-	10							
	Volume	ñ	4	0	4	0	4 1	. 3	10	5	12	86	103	50	4	4	58	182
	Peak Factor	•	7	U	4	U	1	. 3	4	1	1	28	30	11	2	0	13	51
	High Int.	13.00				13:00				13:00								0.892
	Volume	0	4	0	4	13.00	1	3	, ,		-	00		12:15	_	_		
	Peak Factor	•	•	•	0.688	v	1	3	0.625	1	1	28	30	17	1	2	20	
					0.000				0.625 [0.858				0.725	
	'eak Hour Fron	n 14:00) to 17:	45 - Pe	ak 1 of 1													
	Intersection	16:45			1 01 1	•			ı									
	Volume	2	24	0	26	0	4	3	7	4	9	65	78	01	10	_		
	Percent	7.7	92.3	0.0		0.0	57.1	42.9		5.1	11.5	83.3	78	81	12	2	95	206
	Volume	2	24	0	26	0.0	4	3	7	J.1 4		65	70	85.3	12.6	2.1		000
	Volume	ō	-8	ŏ	8	Ô	o T	0	ól	1	9 3	22	78 26	81	12	2	95	206
	Peak Factor	•	•	•	<u> </u>	Ū	U	U	١	1	Ş	22	20	17	4	0	21	55
	High Int.	17:00				16:45				17:00				17.20				0.936
	Volume	0	8	0	8	10.45	1	2	3	17.00	3	22	26	17:30	4	-	00	
	Peak Factor	-	_	v	0.813	Ü	1	~	0.583	1	3	44	0.750	23	4	7	28	
					=				0.505				0.750]				0.848	
	1																	

Groups Printed- Traffic Volumes

o's Shopping Center reffic Impact Study

File Name : 01104yrmjas Site Code : 00000000

Start Date : 08/02/20

		YO	URMAN RD	-		SPER RD	mica- ma	YOL	JRMAN RE		JA	SPER RD		
-	Start Time	Right	rom North Thru	1 -44	F:	om East	1 - 41	Fr	om South		F	rom West		
	Factor	1.0	1.0	Left 1.0	Right 1.0	Thru 1.0 _	Left 1.0	Right 1.0	Thru	Left	Right	Thru	Left	Int. Total
	06:00	0	0	0	1.01	1.01	1.0	0	1.0	1.0	1.0	1.0	1.0	
	06:15	ŏ	1	ŏl	Ö	ō	ō	Ö	1	1 5	0	1	Ö	10
	06:30	Ŏ	ī	ŏ	ŏ	2	ŏ	Ö	1	3	4	1	0	.8
	06:45	ì	ī	ŏ	Õ	ō	2	Ö	2	5	5	Ó	2	14
	Total	1	3	Ö	0	3	3	0	5	14	14	3	2	16
				- •	_	-	-,	•	Ū	**1	±-T	J	21	46
	07:00	1	1	0	0	4	0	1	1	6	2	1	3	20
	07:15	0	4	0	0	1	1	1	4	6	3	ï	1	22
	07:30	0	0	0	0	2	1	0	5	7	7	0	1	23
	07:45	0	1	0	1	3	0	0	1	10	5	2	2	25
	Total	1	6	0	1	10	2	2	11	29	17	4	7	90
	08:00	1	2	1	0	,	٥l	^	•	1	7			
	08:15	1	1	ō	0	1 1	0	0 0	1 3	5 8	7	4	0	22
	08:30	ō	2	ŏ	Ö	2	ŏ	1	~ 1	5	. 6 9	0 1	0	20
	08:45	Ŏ	2	ŏ	ő	2	ő	2	2	11	6	0	0	21
	Total	2	7	1	0	6	ő	3	<u> </u>	29	28	5	0	25 88
				•		_	- 1	_	,			•	0 1	00
	. 09:00	0	0	0	0	0	0	0	0	0	. 0	0	0	0
	09:15	0	0	0	0	0	0	0	- 0	0	0	0	ō	ŏ
	09:30	0	0	0	Ō	0	0	Ō.	0	0	0	0	0	0
	<u>09:45</u> Total	0	0	0	0	0	0	0	0	0	0	0	0	0
i	TOLAT	U	U	0	0	0	0	0	0	0	0	0	0	_0_
I	10:00	Ò	3	οl	0	1	o	0	1	16	19	2	0.1	()
	10:15	ŏ	2	ŏl	Ö	ō	ĭ	Ö	Ō	13	12	2 3	0	4
	10:30	ō	ī	ŏ	Ŏ	3 '	ī	1	1	12	15	4	1	21
	10:45	1	1	Ō	Ŏ	2	ōl	ī	3	22	7	1	i	31 39 39
	Total	1	7	0	0	6	2	2	5	63	53	10	2	151
		•	_	- 1										
	11:00 11:15	0	5	0	0	0	0	1	5	15	14	1	1	42
	11:15	1 1	3	1	0	2	0	0	0	24	11	1	1	44
	11:45	Ŏ	4 3	0	. 0 0	3 I	0	0 0	4	16	10	2	0	40
	Total	2	15	1	0	6	8	1	4 13	16 71	13 48	<u>0</u>	0	37
		_	10	- 1	U	O	υį	•	13	11	40	4	2	163
	12:00	1	1	10	0	0	1	0	7	15	11	3	0	39
	12:15	0	2	0	0	1	1	. 0	4	19	17	1	2	47
	12:30	0	3	0	0	1	2	2	2	18	13	ō	2	43
	12:45	0	2	0	0	1	0	2	5	21	9	1	0	41
	Total	1	8	0	0	3	4	4	18	73	50	5	4	170
	13:00	0	4	0	0	1	3	1	7	28	1.7	^		
	13:15	Ö	Õ	ől	1	1	0	1 0	1 4	15	11 13	2	0	51
	13:30	ŏ	5	ŏ	Ô	1	ŏ	Ö	4	16	4	2 1	1	37
	13:45	ō	3	ŏ	ŏ	2	ŏ	ő	ŏ	17	7	1	1 0	32 30
	Total	0	12	0	1	5	3	i	9	76	35	6	2	150
										1		J	- 1	100
	14:00	0	0	0	0	0	0	0	0	0	0	0	0	0
	14:15	0	0	0	0	0	0	0	0	0	0	0	0	0
	14:30	0	0	0	0	0	0	0	0	0	0	0	0	0 0
	14:45 Total	0	0	0	<u>o</u>	<u> </u>	0	0	00	0	0	0	0	0
	iotai	U	U	ΟŢ	0	0	0	0	0	0	0	0	0	0
	15:00	1	3	0	0	1	0	0	2	15	16	-	0.1	
	15:15	ō	4	ŏ	Ö	1	ŏ	. 0	3	13	13	3 2	0	4 36
	15:30	ŏ	2	ŏ	Ö	5	ī	. 0	3	18	12	2		7.3
	15:45	1	4	1	i	ĭ	ô	3	2	31	13	2	1	43 60
	Total	2	13	1	1	8	1	3	10	77	54	9	1	180
							•						- 1	

File Name: 01104yrmheb Site Code: 0000000° Start Date: 07/24/26

		Voi				Groups Pr	inted-Trafi	ic Volumes						
, :			JRMAN RD om North	·		IEBER RD		YO	URMAN RI)	Н	EBER RD		
	Start Time	Right	Thru	1 0 44		rom East			om South		F	rom West		
	Factor	1.0	1.0	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
	16:00	1.01		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	THE POLOI
ĺ	16:15	1	0	0	0	20	0	3	1	2	2	15		44
ľ		1	Ō	0	1	13	0	1	1	2	ō	14	0	
	16:30	2	0	0	0	17	ol	0	ō	<u> </u>	ĭ	8	Ž l	33
	16:45	0	0	2	0	7	0	ī	Ŏ	5	2	_	, i	29
t	Total	4	0	2	1	57	ō	5	2			11		26
i				•			0	•	2	7.1	6	48	0	132
	17:00	0	1	ol	Ω	13	1	0	_	- 1	_	_		
	17:15	1	Ō	Ö	ő	15	2	0	0	3	4	13	1	36
	17:30	ō	ň	ŏ	ŏ	14		Ü	Ü	1	4	14	1	38
ì	17:45	ñ	ň	ŏl	0		0	Ū	O	2	2	18	1	37
[Total	1	- 1		<u> </u>	11	2		1	1	3	17	0	36
	, 012,	_	1	0	0	53	5	1	1	7	13	62	3	147
i.	Grand Total	25	17	3	8	589	40.1	26	••	, 1			•	
1	Apprch %	55.6	37.8	6.7	1.3		40	36	42	67	62	418	13	1320
·	Total %	1.9	1.3	0.2		92.5	6.3	24.8	29.0	46.2	12.6	84.8	2.6	
	70	1.5	1.0	0.2	0.6	44.6	3.0	2.7	3.2	5.1	4.7	31.7	1.0	

ì					·			•	٠, .		٥.٤	5.1	1 4.	/ 3	1.7	1.0	
			MAN RE	j			ER RD n East				MAN RE)			ER RD		7
Start Time	-	1 1	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	1 West Left	App.	Int.
Peak Hour Fro Intersection	om 06:0 07:00	00 to 09	:45 - P	eak 1 of	1				 ,		1	<u> Totai</u>	1			Total	Total
Volume Percent Volume	50.0 1	50.0 1	0 0.0 0	2	0.0	83 98.8 83	1 1.2 1	84	3 27.3	2 18.2	6 54.5	11	3 4.9	57 93.4	1 1.6	61	
Volume Peak Factor High Int.	1 07:30	1	Ö	2	0	22	1.	23	3 2	1	2 · · · · · · · · · · · · · · · · · · ·	,11 5	3 2	57 15	1 0	61 17	158 47 0.840
Volume Peak Factor	1	· 1	0	2 0.250		23	0	23 0.913	07:30 2	1	2	5 0.550	07:45 1	18	1	20 0.763	
eak Hour Fro Intersection	m 10:0 10:45	0 to 13:	45 - P	eak 1 of	1 .				!				ī				
Volume Percent Volume	57.1 4	3 42.9 3	0.0 0.0	7 7	1 1.4 1	62 88.6 62	7 10.0 7	70 70	7 18.4 7	21 55.3 21	10 26.3 10	38	13 31.7 13	27 65.9 27	2.4 1	41 41	156
Volume Peak Factor High Int.	1	0	0	1	1	24	4	29	. 1	4	2	7	5	10	Ō	15	156 52 0.750
Volume Peak Factor	2	1	0	3 0.583	10:45 1	24	4	29 0.603	11:30 0	16	5	21 0.452	10:45 5	10	0	15 0.683	0.750
Peak Hour From Intersection	m 14:00 15:15	0 to 17:	45 - Pe	ak 1 of 1	L			ı				,					
Volume Percent Volume	2 50.0 2	2 50.0 2	0.0	4		73 90.1	7 8.6	81		3 15.0	11 55.0	20	8 11.3	62 87.3	1 1.4	71	176
Volume Peak Factor	0	0	0	4 0	1	73 19	7 4	81 24	6 1	3 1	11 2	20 4	8 1	62 25	1	71 27	176 55
High Int. Volume Peak Factor	15:15 0	2	0	0.500	15:45 1	19	4	24 0.844	15:15 1	0	5	6 0.833	15:45 1	25	1	27 0.657	0.800

o's Shopping Center raffic Impact Study

File Name: 01104yrmheb Site Code: 00000000

Start Date : 07/24/200

Groune	Printed-	Traffic	Volumes
Grouds	r mileu-	Trannc	volumes

		- 1/01	101111100				inted- Traf	fic Volumes						•
			JRMAN RD om North	1		EBER RD	·		URMAN RD)		BER RD		e
Start T	ime	Right	Thru	1.04		rom East	1 - 21		rom South			om West		
	ctor	1.0	1.0	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
	5:00			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	*
	5:15	1	0	0	2	9	1	1	0	1	0	7	1	23
	5:30	0	2	0	0	10	0	0	0	1	0	5	0	18
		0	0	0	0	19	0	0	0	1	0	6	0	26
	:45	1	0	0	2	16	1	1	0	0	0	88	1	30
1'	otal	2	2	0	4	54	2	2	0	3	0	26	2	97
07	7:00		,	_ 1	_								•	ľ
	':15	0	0	0	0	17	0	0	0	1	0	14	0	32
		0	0	0	0	23	0	0	0	0	0	10	0	33
	':30	1	1	0	0	22	1	2	1	2	2	15	0	47
	':45	0	0	0	0	21	0	1	1	3	1	18	1	46
11	otal	1	1	0	0	83	1	3	2	6	3	57	1	158
US	3:00	0	^	٠.	_	••	- 1	_	_					ŧ
	:15	1	0	0	0	13	2	1	0	0	0	16	0	32
	:30	Ō	0	0	0	19	0	0	0	1	0	12	0	33 [
	:45	0	1	0	0	16	0	2	·.' 0	0	0	10	2	31
	otal	<u>U</u>	0 1	0	0	13	1	0	0	1	11		0	23
• •	JULI	1	1	υŢ	0	61	3	3	0	2	1	45	2	119
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	:15	Ö	0	0	0 0	0	0	0	0	0	. 0	0	0	0
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10:		ī	ŏ	ŏ	1	24	4	1	3 4	1	1	6	o	30
	otal	4	2	- 6	2	- 24 59	7	3	9	8	<u>5</u> 9	10 28	_	52
		. "	-	٠,	_	33	, 1	5	9	01	9	20	0	131
11:	:00	2	1	0	0	20	2	4	1	2	2	6	01	40 8
11:	:15	0	1	ŏ	Ŏ	8	ī	2	ō	1	5	6	1	40 25
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<u> </u>		0	0	0	Ō	15	3	ĭ	0	2	ì	10	ő	39
To	tal	3	3	0	ō	53	6	7	17	10	9	27	1	136 [
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12:		3	0	0	0	16	2	1	1	1	1	7	0	32
12:		0	1	0	0	15	0	- 1	3	1	Ō	3	ŏ	24
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12:		0	0	0	0	14	1	0	0	3	1	8	ĭ	28
To	tai	3	4	0	0	47	3	3	4	7	6	25	1	103
10	•									•			- 1	
13:	00	5	1	1	0	21	2	0	1	1	0	12	1	45 ,
13:	15	0	0	0	0	11	0	1	2 0	2	6	10	0	32 28
13:		0	0	0	0	9	2	2		3	0	12	0	28
13:4		<u> </u>	0	<u> </u>	0	21	1	2	1	2	1	9	0	37
To	tai	5	1	1	0	62	5	5	4	8	7	43	1	37 142
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Tot	+3 -al	0	0	0	0	<u> </u>	0	0	0	0	0	00	0	
101	aı	0	0	0	0	0	0	0	0	0	0	0	0	0
15:0	20	^		<u> </u>	_	_	. 1						·	7.75 · *
15:0 15:1		0	0	0	0	7	1	1	1	0	2	10	1	2 .
15:3	20	0	2	o l	0	15	0	1	0	5	3	12	0	38
15:3		1	0	o	0	19	3	1	1	2	2	10	0	39
Tot			2	0	1	19	4	1	1	2	11	25	1	38 39 55
101	वा	1	2	0	1	60	8	4	3	9	8	57	2	155

File Name: 01104111jas

Site Code : 000000000 Start Date : 08/02/2

														F	Page	No	: 2	
		,						Groups I	Printed- T	raffic Vo	olumes				-			
i				HWY 11				SPER RO				W 111		J	JASPE	R RD		
	Start Ti			rom Nor	· ,			rom East				m South			From	· · · · · · · · · · · · · · · · · · ·		
			Right	Thru			Right	Thru	Lef		ght	Thru	Left	Righ		hru	Left	Int. Total
	Fac		1.0	1.0		1.0	1.0	1.0	1.0)	1.0	1.0	1.0	1.0		1.0	1.0	int. Total
		:00	4	245		20	14	4	()	2	165	2		3	0	3	462
	16:		4	293		9	16	1	()	0	208	4		3	Õ	2	540
	16:		6	280		12	6	1	(0	145	6		2	1	2	
	16:		1_	295		15	9	2	2	2	1	181	ĩ		2	2	1	461
	То	tal	15	1113	3	56	45	8	2	2	3	699	13	10		3	8	512 1975
										•			10	1.	•	3	01	19/5
	17:		4	318		15	20	0	C) [1	201	3		>	2	21	560
	17:		1	354	•	18	12	1	Ċ		ō	180	2	2	5	3 2	2	569
	17:		10	270		19	10	4	3		3	151	2	1	<u>.</u>		3	575
	17:	45	1	296		11	14	2	1		ő	156	ő		_	4	2	479
	To	tal	16	1238		63	56	7	4		4	688	7	- 1		0	5	487
						1	-	•		1	7	000	/ 1	C	•	9	12	2110
	Grand To	tal	69	7664	3	78	488	79	15	. 1	50	7167	136	00		~ 1	201	
	Apprch	%	0.9	94.5		1	83.8	13.6	2.6).7	97.5		92		61	36	16235
	Total	%	0.4	47.2		2.3	3.0	0.5	0.1		0.3		1.8	48.7		2.3	19.0	
					•		5.0	0.5	0.1	,	J.3 _%	44.1	0.8	0.6) (0.4	0.2	
ļ			HWY			1	JASE	ER RD			HW	Y 111			IACD	ER RD		1
			From	North			Fron	n East				South				ER RU ≀West		
	Start Time F	Right	Thru	Left	App.	Right	Thru	Left	App.	D:_L.		I T	App.				App.	Int.
i					Total		1111111	Leit	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Total
	Peak Hour From Intersection C	77.20	0 to 09:4	45 · Pea	k 1 of	ļ				1							, 0121	10(0)
			600			•												1
	Volume	2	639	26	667	32	10	1	43	1	871	11	883	-8	4	1	13	1
	ercent	0.3	95.8	3.9		74.4	23.3	2.3		0.1	98.6	1.2		61.5	30.8	7.7	13	•
	> √olume	2	639	26	667	32	10	1	43	1	871	11	883	8	4	7.7	13	1606
	Volume	0	165	6	171	10	1	0	11	ī		4	283	2	Õ	1	3	1606
	Peak Factor								1	-		7	200	~	U	T	3	468

Pear	K Hour Fro	om 06:0	00 to 09	9:45 · P	eak 1 of	1									1		I TOTAL	TULAI
Int	tersection	07:30)			Ī				1 '				ī				
}	Volume	2		26	667	32	10	1	43	1	071	11				_		1
	^{>} ercent	0.3	95.8	3.9	•••	74.4	23.3	2.3	40	0.1	871 98.6	11	883		4	_ 1	13	1
- N.	Volume	2	639	26	667		10	2.5	43		871	1.2	000	61.5	30.8	7.7		1
,	Volume	0	165	6	171	10	1	ô	11	i	278	4	883 283	8 2	4	1	13	
	ak Factor				- · -	1 -	*	<u> </u>	11	*	2/0	4	283	2	0	1	3	7.00
ľ	High Int.	07:45	i			07:45				07:30				00.00				0.858
ħ	Volume	0	·174	6	180		3	0	15		278	4	283	08:00	_	_	_	1
Pea	ak Factor				0.926		~	Ŭ	0.717		2/0	. 4	0.780		3	0	6	
						•			0., 1,	1			0.760	J			0.542	1
eak	Hour Fro	m 10:0	00 to 13	:45 - Pe	eak 1 of	1												
inte	ersection	11:30				ĺ.				1				1				ı
	Volume	4	705	43	752	60	12	1	73	6	797	12	815	8	5	2	1.5	1000
	Percent	0.5	93.8	5.7		82.2	16.4	1.4		0.7	97.8	1.5	013	53.3	33.3	13.3	15	1655
	Volume	4	705	43	752	60	12	1	73	6	797	12	815	8	53.5 5	13.3	10	1655
١ _	Volume	2	189	9	200	14	6	Ō	20	i	207	2	210	2	1	0	15 3	1655
	k Factor						-	_	_•	"		-	210	_	1	U	3	433
- 1	High Int.	11:45				11:30				12:15				12:00				0.956
_	Volume	0	197	9	206	14	6	0	20	2	209	5	216	2	2	2	6	
Pea	k Factor				0.913				0.913	_		J	0.943	_	~	~	0.625	
						•							0.545				0.023	
Реак	Hour From	m 14:0	0 to 17:	:45 · Pe	ak 1 of .	l												
inte	rsection												1				ı	
	Volume	16	1237	67	1320	51	7	5	63	5	713	8	726	7	11	8	26	2135
	Percent	1.2	93.7	5.1		81.0	11.1	7.9		0.7	98.2	$1.\overline{1}$, = 0	26.9	42.3	30.8	20	2133
1	Volume	16	1237	67	1320	51	7	5	63	5	713	8	726	7	11	8	26	2135
3	Volume	1	354	18	373	12	1	0	13	0	180	2	182	ź	2	3	7	575
	k Factor								-			_		_	-	,	′1	0.928
7	ligh Int.	17:15			ļ	17:00				17:00			1	17:00			ļ	0.520
	Volume	1	354	18	373	20	0	0	20	1	201	3	205	2	3	2	7	
eal	k Factor				0.885				0.788	_	-	Ŭ	0.885	-	5	~	0.929	
									- 1				2,000				U.747	

o's Shopping Center reffic Impact Study

File Name : 01104111jas Site Code : 00000000

Start Date: 08/02/200.

					Groups Pri	inted-Traff	ie Voluma			Pag	je ivo	: 1	Linear
		HWY 111 . rom North			ASPER RD From East	Ineu- Iran		HWY 111 From South			SPER RD om West		ŧ
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor 06:00	1.0	1.0 58	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:15	ô	59	2	5	0	ő	0	132	4	2 2	3 0	0	192 204
06:30	0	89	5	3	2	ŏ	ŏ	188	6	ō	2	ŏ	295
06:45	2	82	2	5	1	0	1	181	4	3	3	0	284
Total	3	288	12	15	3	0	1	622	16	7	8	0	975
07:00	1	111	1	6	2	1	2	150	3	1	3	0	281
07:15	0	131	3	6	2 2	ō	1	182	6	ī	ĭ	ŏl	333
07:30	0	165	6	10	1	0	1	278	4	2	0	1	468
07:45 Total	<u>0</u>	174 581	6 16	12 34	<u>3 ·</u> 8	0	<u> </u>	235 845	14	1 5	<u>1</u> 5	<u> </u>	433
	*	501	101	34	0	7 1	4	040	. 14	ວ	5	1	1515
08:00	0	150	8	5	2	0	0	187	3	3	3	0	361
08:15 08:30	2 1	150 160	6	5	4	1	0	171	3	. 2	0	0	344
08:45	Ō	172	6 3	3 9	1 1	1 0	0	~ 177 157	4 5	5 3	2 1	1 0	361
Total	3	632	23	22	8	2	Ö	692	15	13	6	1	351 1417
09:00	•	_	ا م	_	_	۰		_					Ę
09:00 09:15	0	0 0	0	0 0	0 0	0	0	0	0	. 0	0	0	0
09:30	ŏ	ŏ	ő	0	Ö	ŏl	ŏ	0	ŏ	0	0	0	0 [0
<u>09:45</u>	0	0	0	. 0	0	0	0	0	0	0	Ŏ	0	ŏ.
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	2	149	14	14	2	0	3	172	8	1	3	1	36
10:15	1	151	16	11	2	ŏ	. 3	168	3	1	1	ô	357
10:30	1	165	15	15	2	0	2	168	5	1	2	0	376
10:45 Total	0 4	178 643	53	19 59	<u>4</u> 10	1	9	158 666	3 19	<u>3</u> 6	<u>1</u> 7	0	376 1478
	•		·	JJ	10		,	000	19	U	,	T	14/8
11:00	0	155	11	10	0	0	2	186	3	3	2	1]	373
11:15 11:30	0 2	184 189	9	22 14	1 6	1 0	2 1	169 207	2	5 2	1 1	1	397
11:45	ō	197	9	12	2	1	2	180	1	4	0	0	433 ¹ 408
Total	2	725	38	58	9	2	7	742	8	14	4	2	1611
12:00	1	167	12	19		0		201		•	•	ا م	4-0
12:15	i	152	13	15	1 3	ő	. 2	201 209	4 5	2 0	2 2	2	412 [[] 402
12:30	1	181	8	20	1	ō	2	167	5	6	3	ŏ	394 ,
12:45 Total	<u>5</u> 8	195	6	16	1	0	1	184	2	3	3	0	416
TULA	٥	695	39	70	6	0	6	761	16	11	10	2	1624
13:00	2	185	• 7	24	3	0	4	179	6	3	1	1	415
13:15	1	189	13	12	1	0	1	137	2	2	1	1	360
13:30 13:45	1 4	210 207	3	14 15	4 5	0	1 4	195 188	3	1	0	1	433
Total	- 3	791	26	65	13	Ö	10	699	15	7	<u>2</u> 4	5	435 1643
*4.00	_	_				•					•	•	1040
14:00 14:15	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0 0	0 0	0	0	0	0	0 0	0	0	0
14:45	0	Ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ő	ŏl	ő	0	ŏ	0
Total	0	0	0	Ó	0	0	0	0	0	0	0	0	0
15:00	3	. 221	16	12	0	0	1.	192	e!	E	2	ا م	A C
15:15	3.	239	13	16	1	0	1.	202	5	5 4	3 0	2	46(482
15:30	1	261	11	14	4	ž	3	208	4	3	Ö	1	512
15:45	2 '	237	12	22	2	1	1	151	1	1	2	1	433
Total	9	958	52	64	7	3	6	753	13	13	5	4	1887

File Name: 0110411186

Site Code : 0000000^ Start Date : 07/24/20_.

Groune	Printed-	Traffic	Volumos	

- 1	1		11007 444				mica- mai	ile Animile?						
1			HWY 111			EBER RD		F	1WY 111			HWY 86		
	Ctart Time		rom North			rom East			om South	- 1		rom West	ľ	
	Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
-	Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	mit, Total
	16:00	5	227	10	16	2	3	3	186	13	21	9		
	16:15	4	241	7	4	5	ĭ	Õ	175			9	5	500
	16:30	1	248	9	8	6	اۃ	1		11	25	/	5	485
	16:45	4	223	8	6	1	4	Ţ	200	11	17	1	5	511
	Total	14	939			<u></u>	2	<u> </u>	147	18	17	5	_ 2	434
	10(4)	1.4	733	34	34	14	10	5	708	53	80	22	17	1930
	17:00	5	337	10	9	3	3	3	193	18	23	-	ام	
	17:15	4	349	18	13	4	2	1	156	14		5	2	611
	17:30	0	243	9	8	2	2	2			18	1	- /	587
	17:45	0	220	16	4	2	2	3	184	14	20	8	2	495
	Total	9	1149	53				3	141	11	12	6	2	419
	1 - 12.1	,	1172	55	34	11	9	10	674	57	73	20	13	2112
	Grand Total Apprch % Total %	128 1.8 0.8	6910 94.6 41.7	265 3.6 1.6	361 52.4 2.2	217 31.5 1.3	111 16.1 0.7	81 1.1 0.5	7065 92.4 42.7	499 6.5 3.0	593 64.4 3.6	192 20.8 1.2	136 14.8 0.8	16558

	<u> </u>	Fron	Y 111 1 North				ER RD m East				Y 111 South				VY 86 n West		7
Start Time	1	1 1	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int.
Peak Hour Fro	om 06:	00 to 09	:45 - P	eak 1 of	1	····	·			· · · · · · · · · · · · · · · · · · ·		<u> </u>	·	<u> </u>		Liotai	Total
Intersection					1				1	,			1				1
Volume	14		33	629		27	12	94	9	843	44	896	57	27	11	95	17
∍rcent	2.2		5.2		58.5	28.7	12.8		1.0	94.1	4.9	950	60.0	28.4	11.6	95	1/
√olume	14	582	33	629	55	27	12	94		843		896		27	11.0	95	1714
Volume	4	165	10	179	17	4	3	. 24		252	17		20	7	1	95 28	1714
eak Factor							_		-		-,	2,1	20	,	1	28	
High Int.					07:15				07:30				07:45				0.854
Volume	4	165	10	179		17	1	35		252	17	271	17	10	4	21	
Peak Factor				0.878	1			0.671	_		• ,	0.827	'	10	4	31	
					•							O,OE,	1			0.766	l
ak Hour Fro	m 10:0	00 to 13.	:45 - Pe	eak 1 of	1												
intersection] · .				1				ı				ŀ
Volume	13	735	26	774	28	27	13	68	14	705	60	779	71	15	15	101	1700
Percent	1.7	95.0	3.4		41.2	39.7	19.1		1.8	90.5	7.7	775	70.3	14.9		101	1722
Volume	13	735	26	774	28	27	13	68	14	705	60	779	70.3	14.9	14.9	101	1700
Volume	3	185	5	193	10	7	- 5	22	4	215	15	234	18	15 5	15	101	1722
Peak Factor					1	•	•		'	210	15	2.54	10	5	2	25	474
High Int.	13:30				13:45				13:45				13:15				0.908
Volume	2	197	6	205	10	7	5	22	4	215	15	234	23	2	7		
eak Factor				0.944		•	~	0.773		210	13	0.832	23	3	7	33	
				,				0.770	!			0.032				0.765	
eak Hour Fron	m 14:0	0 to 17:	45 · Pe	ak 1 of 1	l												
ntersection	16:30											1				t	
Volume	14	1157	45	1216	36	14	11	61	6	696	61	763	76	10			
Percent	1.2	95.1	3.7		59.0	23.0	18.0	~ 1	0.8	91.2	8.0	/03	75	12	16	103	2143
Volume	14	1157	45	1216	36	14	11	61	6	696	61	760	72.8	11.7	15.5		
Volume	5	337	10	352	9	3	3	15	3	193	18	763	75 22	12	16	103	2143
eak Factor			•		-	J	J	13	5	133	10	214	23	5	2	30	611
	17:15			j	17:15			- 1	17:00				17.00			Ī	0.877
Volume	4	349	18	371	13	4	2	19	3	100	10	أميرا	17:00	_	_		
eak Factor				0.819	10	4	2	0.803	3	193	18	214	23	5	2	30	
				0.019				0.503				0.891				0.858	

o's Shopping Center raffic Impact Study

File Name : 0110411186 Site Code : 00000000

Start Date : 07/24/20

Page No

Groups Printed- Tra	ffic Volumes	Page No	:

	··		1007444			Groups Pr	inted- Traf							t = .:
			HWY 111	- 1		EBER RD			HWY 111			1WY 86		
	Start Time	Dialet	rom North			rom East			rom South		Fr	om West		
		Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
	Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	06:00	3	69	3	7	6	1	1	114	6	2	5	2	219
	06:15	2	75	5	15	8	1	0	135	4	6	3	2	256
	06:30	1	94	2	15	5	0	2	190	ıi	6	1	ō	200
	06:45	4	79	10	9	7	ōl	ō	188	8	7	2		327
	Total	10	317	20	46	26	2	3	627	29	21		4	318
				20	40	20	~	3	027	29	21	11	8	1120
	07:00	4	105	6	13	6	1 1	-	007	1	• •	_	. 1	
	07:15	ž	135	8			1	1	207	17	10	6	3	379
	07:30				17	17	1	3	200	5	11	7	3	409
		4	165	10	17	4	3	2	252	17	20	7	1	502
	07:45	5_	130	7	13	4.	6	3	187	13	17	10	4	399
	Total	15	535	31	60	31	. 11	9	846	52	58	30	11	1689
							_						•	
	08:00	3	152	8	8	2	2	1	204	9	9	3	3	404
,	08:15	6	147	6	12	7	1	0	156	9	21	9	3	377 ,
	08:30	0	145	3	7	6	2	2	. 165	10	20	6	3	369
_	08:45	1	156	6	10	2	1	ī	164	14	15	1	2	
	Total	10	600	23	37	17	6	4	689	42	65	19		373
					0,	*,	0,		003	44	05	19	11	1523
	09:00	0	0	0	0	0	ol	0	0	0	0	^	0.1	~ F3
	09:15	ŏ	ŏ	ŏ	ŏ	ő	ő	0	. 0	Ö	. 0	0	0	0
	09:30	ŏ	ŏ	ŏ	Ö	ő	ő					0	0	0
	09:45	ŏ	Ö	ŏ				0	0	0	0	0	0	0
-	Total	0	0	0	<u>0</u>	<u> </u>		0	0	0	0	0	0	00
	iotai	U	U	O į	U	0	0	0	0	0	0	0	0	0
(10:00	3	144	21	_	_	0.1			اند				
i	10:00			3	.5	9	2	4	167	9	4	3	2	3∖ ે
		4	143	4	12	3	3	2	166	8	9	0	4	358
	10:30	5	155	3	11	5 -	2	4	182	12	4	4	5	392
***********	10:45	9	123	5	11	10	6	11	187	18	16	3	3	392 392 1497
	Total	21	565	15	39	27	13	11	702	47	33	10	14	1497
		_								•			•	
	11:00	0	129	6	14	6	3	2	202	17	5	5	5	394 🗂
	11:15	0	140	0	4	4	2	4	139	12	17	4	4	330
	11:30	2	161	2	6	6	2	1	184	10	18	2	1	395
	11:45	5	139	3	3	5	5	2	167	13	13	4	4	363
	Total	7	569	11	27	21	12	9	692	52	53	15	14	1482
			·				,	-		- 1		10	14	1402
	12:00	1	148	2	3	4	11	1	173	11	14	9	3	380
	12:15	4	158	4	7	10	4	. ō	227	14	20	2	7	
	12:30	6	148	4	í	2	2	. 3	177	18	23	7		457
	12:45	4	170	5	8	9	8	3	171	16	16		1	392
	Total	15	624	15	19	25	25	7	748		73	3	3	416
			02 -7	10	19	23	23]	,	740	59	/3	21	14	1645
	13:00	6	161	7	8	6	3	1	156	171	15	-	ا م	007
	13:15	2	192	8	3	5	2			17	15	5	2	387
	13:30	2	197	6	7	9	3	3	169	16	23	3	7	433 428
	13:45	3	185	5	-		5	6	165	12	15	2	4	428
	Total	13	735	26	10 28	7	5	4	215	15	18	5	2	474
	TOTAL	13	/33	20	28	27	13	14	705	60	71	15	15	1722
	14:00	^	^	ام	•	_	ا م	_	_	- 4	_			in the second
		0	0	0	0	0	0	0	0	0	0	0	0	0
	14:15	0	0	0	0	0	0	0	0	0	0	0	0	0 -
	14:30	0	0	0	0	0	0	0	0	0]	0	0	0	0
	14:45	0	0	0	0	0	0	0	0	0	0	0	0	0 [
	Total	0	0	0	0	0 .	0	0	0	0	0	0	0	0
							•			* 1		-	• ,	- L
4	15:00	4	188	9	4	2	0 [3	171	12	17	11	9	43
1	15:15	3	229	7	7	9	5	3	173	13	15	3	3	47∪ ⊤
	15:30	3	241	11	12	7	4	2	165	12	15	5	3	480
	15:45	4	219	10	14	ó	ī	1	165	11	19			400
	Total	14	877	37	37	18	10	9	674	48	66	10 29	4	458
		- •	-, ,	0,1	٠,	10	±0	9	0/4	40	90	29	19	1838

File Name: 01104111mcc

Site Code : 00000000° Start Date : 11/15/200

		F	HWY 1 rom No					CCABE					HWY 1			Γ		CCABE			
Start Time		u	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped	App. Total	Rig ht	Thr	Left	Ped	App.	Rig ht	Thr	Left	Ped	App.	_Int.
Peak Hour I	rom .	14:00	to 17:	45 · P	eak 1 o	f 1	7			10141	1	<u> </u>		21	Total	I III	u		<u> </u>	Total	Total
Intersecti on	16:3																				
Volume	2	157 0	6	0	1578	5	1	2	0	8	1	933	10	0	944	5	3	1	0	9	2539
Percent	0.1	99. 5	0.4	0.0		62. 5	12. 5	25. 0	0.0		0.1	98. 8	1.1	0.0		55. 6	33. 3	11.	0.0	_	
Volume	2	U	6	0	1578	5	1	2	0	8	1	933	10	0	944	5	3	1	0	9	2539
Volume Peak Factor	0	435	1	0	436	2	1	0	o o	3	0	251	2	0	253	0	0	0	0	0	692 0.917
High Int. Volume Peak Factor	17:00 0) 435	1	0	436 0.90 5	17:00 2	1	0	0	3 0.66 7	17:00 0	251 _.	. 2	0	253 0.93 3	16:45 2	2	0	0	4 0.56 3	

File Name : 01104111mcc | Site Code : 00000000

Start Date : 11/15/2001

Page No : 2

							Groups I	-nntea- 1	<u> - Unshil</u>	ted							
		HWY				MCCA	BE RD			HWY	111			MCCAE	3E RD		
		From	North			From	East			From	South			From '	West	1	
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
16:00	0	339	2	0	0	3	1	0	1	225	1	0	7	0	0	0	579
16:15	4	353	1	0	2	0	0	0	0	241	5	0	3	2	ō	ŏl	611
16:30	0	392	1	0	0	0	2	0	0	220	5	0	Ō	ō	1	ŏl	621
16:45	1	372	1	0	1	0	0	0	1	212	ī	ō	2	2	ō	ŏl	593
Total	5	1456	5	0	3	3	3	0	2	898	12	0	12	4	1	0	2404
17:00	0	435	1	0	2	1	0	0	0	251	2	0	0	0	0	01	692
17:15	1	371	3	0	2	0	0	0	0	250	2	ol	3	1	0	٥l	633
17:30	0	361	1	0	0	0	0	0	0	226	1	0	2	$\bar{1}$	Ŏ	٥l	592
17:45	0	323	0	0	0	0	0	0	0	195	0	0	1	Ō	ō	ŏl	519
Total	1	1490	5	0	4	1	0	0	0	922	5	0	6	2	Ō	0	2436
Grand Total	22	9398	39	0	43	42	14	0	28	9051	107	1	64	44	9	10	18862
Apprch %	0.2	99.4	0.4	0.0	43.4	42.4	14.1	0.0	0.3	98.5	1.2	0.0	54.7	37.6	7.7	0.0	
Total %	0.1	49.8	0.2	0.0	0.2	0.2	0.1	0.0	0.1	48.0	0.6	0.0	0.3	0.2	0.0	0.0	

			HWY 1 rom No					CCABE					HWY 1					CCABE			
Start Time	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht		Left	Ped s	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Int. Total
ak Hour F	rom (06:00	to 09:4	45 - P	eak 1 o	f 1															
n(oti on	07:3	0												•							
Volume	2		4	0	824	5	8	1	0	. 14	11	115 9	20	0	1190	9	8	1	0	18	2046
Percent	0.2	99. 3	0.5	0.0		35. 7	57. 1	7.1	0.0		0.9	97. 4	1.7	0.0		50. 0	44. 4	5.6	0.0		
Volume	2	818	4	0	824	5	8	1	0	14	11	115 9	20	0	1190	9	8	1	0	18	2046
Volume Peak Factor	0	222	2	0	224	0	0	0	0	0	0	360	6	0	366	3	2	1	0	6	596 0.858
ligh Int. Volume Peak Factor	07:45 0	5 222	2	0	224 0.92 0	08:15 3	4	0	0	7 0.50 0	07:4! 0	5 360	6	0	366 0.81 3	07:45 3	2	1	0	6 0.75 0	
ak Hour F itersecti on	rom 1 13:00		o 13:4	15 - Pe	ak 1 of	1															
Volume	1	908	3	0	912	3	5	0	0	8	0	870	10	0	880	6	4	0	0	10	1810
Percent	0.1	99. 6	0.3	0.0		37. 5	62. 5	0.0	0.0		0.0	98. 9	1.1	0.0		60. 0	40. 0	0.0	0.0		
Volume Volume Peak Factor	0	908 265	3 1	0	912 266	3 0	5 0	0	0	8	0	870 215	10 5	0	880 220	6	4	0	0	10 2	1810 488 0.927
ligh Int. Volume Peak Factor	13:45 0	265	1	0	266 0.85 7	13:00 1	3	0	0	4 0.50 0	13:15 0	3 240	2	0	242 0.90 9	13:15 2	2	0	0	4 0.62 5	

Groups Printed- 1 - Unshifted

_o's Shopping Center Traffic Impact Study

File Name: 01104111mcc

Site Code : 000000000 Start Date : 11/15/2001

i				/ 111 North			MCCAI From	BE RD	Timed	- Ortali	HWY From				MCCAE		 -	
	Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right		Left	Peds	Right	From '	Left	Peds	Int.
	Facto 06:00			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Total
	06:00		67 89	0 1	0	1 1	5 0	0	0	0	141	3	0	0	2	0	0	220
	06:30	0	106	0	0	2	2	1	ő	0	220 235	3 3	0	0	1 1	0 1	0	317
•	06:45 Tota		142 404	<u>1</u> 2	0	2 6	<u>0</u> 7	<u>0</u> 1	0	0	210	3	o l	2	1	0	ŏ	351 361
							,	1	υļ	U	806	12	0	2	5	1	0	1249
	07:00 07:15		117 150	1 0	0	1 3	1 2	0 1	0	0	205	1	0	0	0	1	0	327
	07:30	1	221	1	0	1	1	1	ŏ	0	259 328	2	0	2 2	2 2	0	0	421
	07:45 Total	<u>0</u>	222 710	<u>2</u> 4	0	<u> </u>	<u>0</u>	<u>0</u> 2	0	0 0	360	6	0	3_	2	1	0	561 596
		•		-			•	2	•	U	1152	12	0	7	6	2	0	1905
	08:00 08:15	0	201 174	1 0	0	1 3	3 4	0	0	9 2	233 238	8	0	2	1	0	0	4 59
	08:30 08:45	0	180	1	0	2	1	Ö	ŏ	11	238	3 1	0	2 0	3 1	0	0	430 407
-	Total	1 2	188 743	0 2	0	<u>1</u> 7	<u>0</u> 8	<u> </u>	0	0 22	212 893	3_	0	0	2	1	0	408
	09:00	0						_		22	023	15	0	4	7	1	0	1704
	09:15	ő	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ı	09:30 09:45	0	0	0	0	0	0	0	0	0	, o	0	0	0	0	0	0	0
	Total	0	0	0	- 8	0	0	0	0	0	<u> </u>	0	0	0	0	0	0	
1	10:00	0	177	1	٠	0	_	-			_		- 1	U	U	0	0	
	10:15	1	153	2	0	0 3	2 0	0	0	0	186 222	, .3 1	0	1 1	2 1	1 0	0	373
	10:30 10:45	0	181 185	2 0	0	0	1	0	0	0	193	7	0	3	ō	Ö	0	384 387
	Total	1	696	5	0	<u> </u>	<u>1</u>	2	0	0	220 821	<u>2</u> 	0	<u>0</u> 5	<u>1</u>	1 2	0	412 1556
	11:00	1	189	2	o]	1	2	0	0	^			- (_	•		·	
	11:15	0	211	1	0	3	1	0	0	0	190 196	1 1	0	0 1	0 1	0 1	0	386 416
	11:30 1:45	$\frac{1}{1}$	195 222	1 0	0	1	0 1	1 3	0	1	227	2	0	2	2	0	0	433
	Total	3	817	4	Ö	6	4	. 4	0	<u>1</u> 2	193 806	<u>0</u> 4	0	<u>1</u>	<u>1</u> 4	0 1	0	424 1659
	12:00	1	212	0	01	0	1	0	0	· 0	210	•	0.1	•	•		·	
	12:15 12:30	0	215 234	0	0	0	0	0	0	0	217	1 2	0	1 1	1 2	0	0	427 438
	12:45	0	225	1 1	0	0	1 1	0	0	0	252 187	2 1	0	2 0	2	1	0	495
	Total	1	886	2	0	Ō	3	0	Ö	ŏ	866	6	1	4	<u>0</u> 5	<u>0</u>	0	415 1775
	13:00	0	212	0	0	I	3	0	01	0	189	2	οl	2	0	0	0	409
	13:15 13:30	1 0	202 229	1 1	0	1 1	2	0	0	0	240	2	o	2	2	Ö	ö	453
_	13:45	0	265	1	0	0	0	0	0	0	226 215	1 5	0	1 1	1 1	0	0	460 488
	Total	1	908	3	0	3	5	0	0	0	870	10	öl	6	4	0	- 6	1810
	14:00	0	0	0	0	0	0	0	0	0	0	0	٥l	0	0	0	01	0
	14:15 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14:45	1	11	Ō	0	0	0	0	0	0	0	0	0	0	0	0	0	0 2
	Total	1	1	0	0	0	0	0	0	0	0	Ö	0	0	ō	0	0	
	5:00 15:15	0	320	4	0	0	1	1	0	0	241	4	١٥	2	0	0	0	573
	15:30	1 0	307 349	0 2	0	1 . 3	1 0	0	0	0	281	3	0	2	1	0	0	597
_	15:45 Total	2	311	1	0	2	1	1	_0	1 1	232 263	9 2	0	5 5	1 1	0	0	602 590
	rotai	3 1	.287	7	0	6	3	2	0	2 1	017	18	Ŏ	14	3	0		2362

File Name: 01220dogheb Site Code: 00000000

Start Date: 11/15/200,

			GWOO rom No		, ,			EBER					GWOO rom So					EBER			E
Start Time	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped	App.	Int.
eak Hour F			to 17:4				<u> </u>			iotai	1		l		TOLAI	[u		5 [lotal	Total
Intersecti on	15:3	0																			
Volume	7	206	85	0	298	80	79	7	0	166	8	111	66	0	185	120	131	8	0	259	908
Percent	2.3	69. 1	28. 5	0.0		48. 2	47. 6	4.2	0.0		4.3	60. 0	35. 7	0.0		46. 3	50. 6	3.1	0.0		
Volume	7	206	85	0	298	80	79	7	0	166	8	111	66	0	185	120	131	8	0	259	908
Volume	0	63	17	0	80	20	21	0	0	41	2	29	23	0	54	29	29	1	0	59	234
Peak Factor																					0.970
High Int.	16:00					15:45					15:30					15:45	i				
Volume	1	54	28	0	83	24	24	0	0	48	2	29	23	0	54	27	46	2	0	75	•
Peak Factor					0.89 8					0.86 5					0.85 6					0.86 3	r e

File Name: 01220dogheb Site Code: 00000000

Start Date : 11/15/206.

	0001146					Groups	s Printed-	· Unshifte	eď							
												_				
Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right			Peds	Right			Pada	Int.
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0									Total
1	54														1.0	
4	50		- 1			_	- 1	1			0			-	0	225
1	47		- 1			1	1	1			0			2	0	225
2			- 1			7		1			0			0	0	201
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o's Shopping Center
of the Impact Study

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APPENDIX A TRAFFIC COUNT DATA



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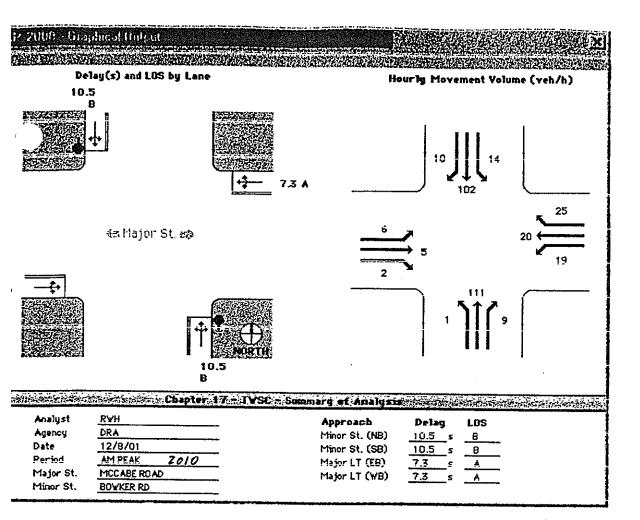
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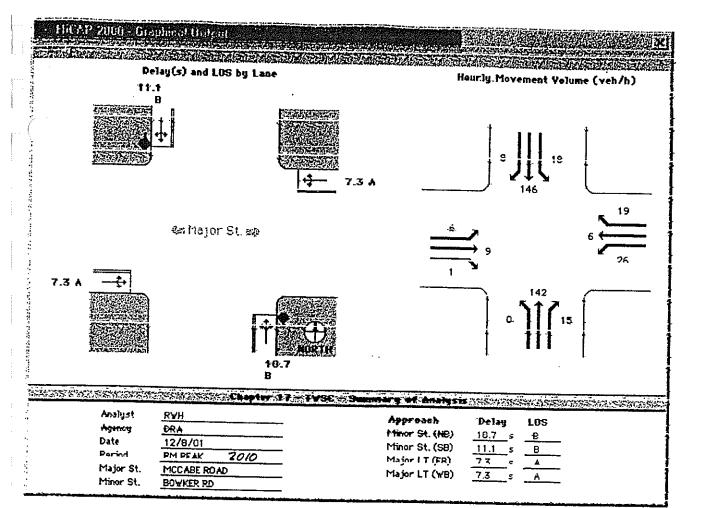
Strong Concepts, TEAPAC SIGNAL97-Intersection Capacity Analysis, SITE-Traffic Distribution, WARRANTS-Traffic Signal Warrants Analysis Software, NOSTOP-Bandwidth Progression & System Cycle Optimization Software, PRENETSIM-Animation Translation Software.

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Analyst	RWH			· - · · -				* <u>* * * * * * * * * * * * * * * * * * </u>	- 100 mag 10 may 10	A DESCRIPTION		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9,15-19
Agency or Company							IMP.		A.D. T	DYST Z A 3	12/10	0/01	
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Proportion of LT or RT (Parking (Yes/No)	PLT or PRT)	100	-	0	100	-]	0	0	-	100	0	•	10
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ioi opposed) (îř known)	protection,		1			1			2			2	
cak-hour factor, PHF	92												
yde length	Minimum, C _{min}	60_s	i	Maximu	m, C _{matx}	150	_s	Lost	time/ph	ase	4	S	
lotes		i divido	gregorijak		ร่อนใกล้ก	i comini Cafefantise	Sanaris	*03700.7 *************	enijoog at makelenij	10.5 20.5 (1	. 7		
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	ive left-turn lanes, and roup.	۱۸ .											

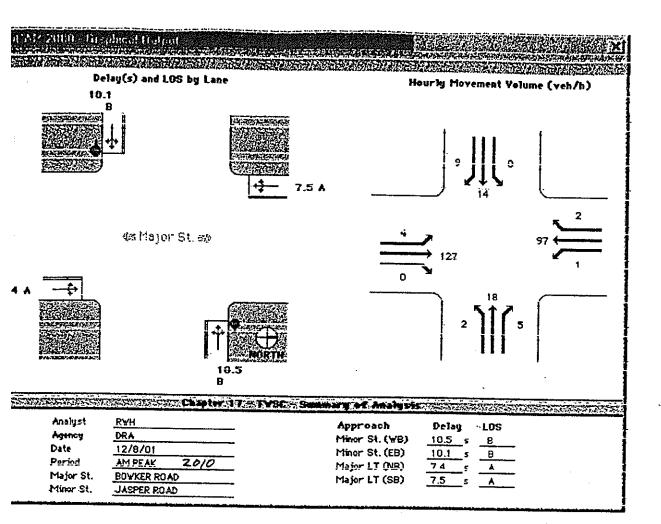


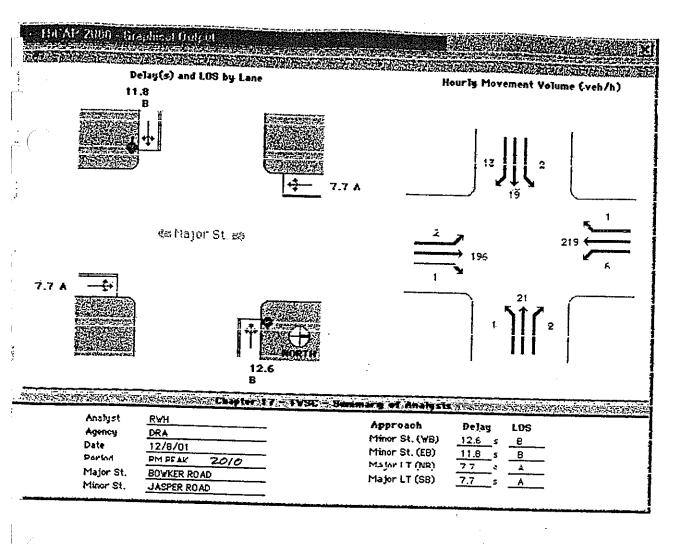


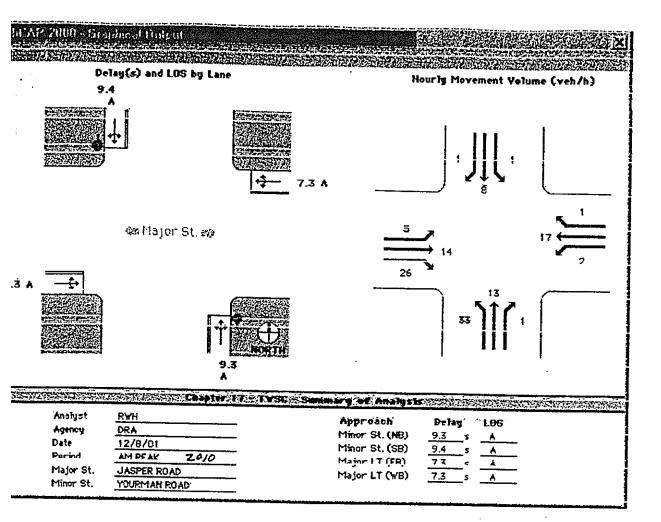
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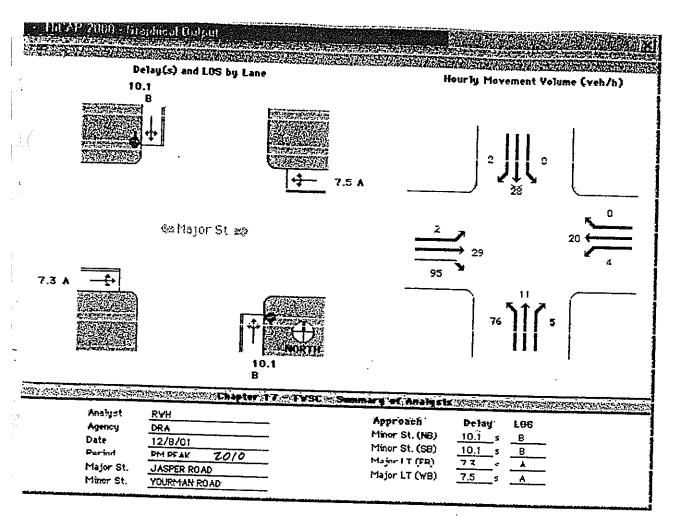
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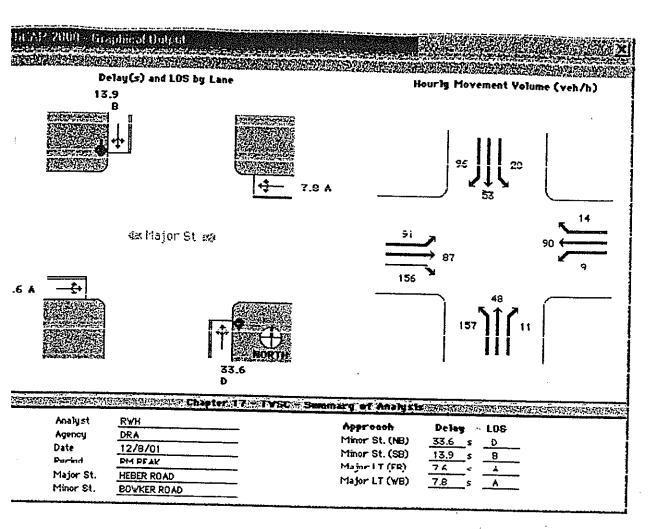
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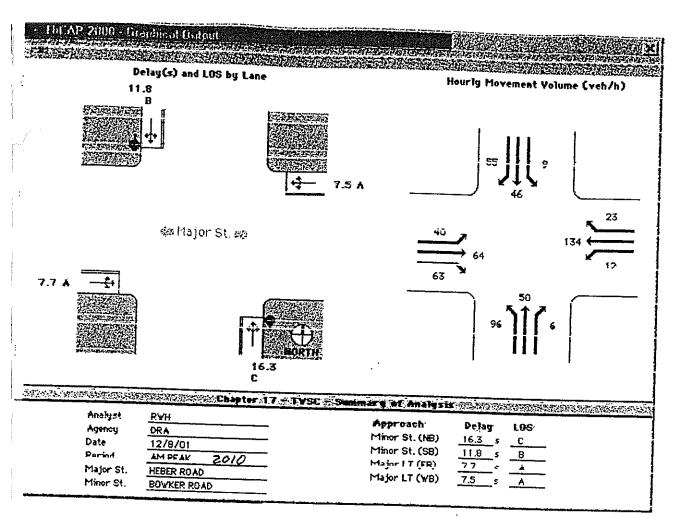








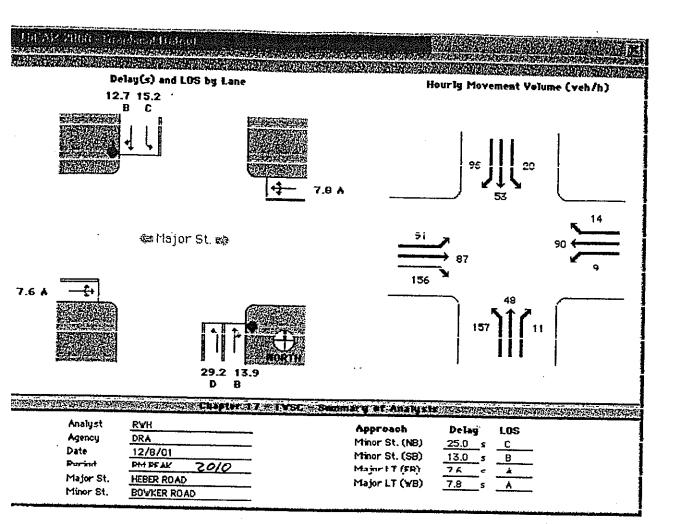




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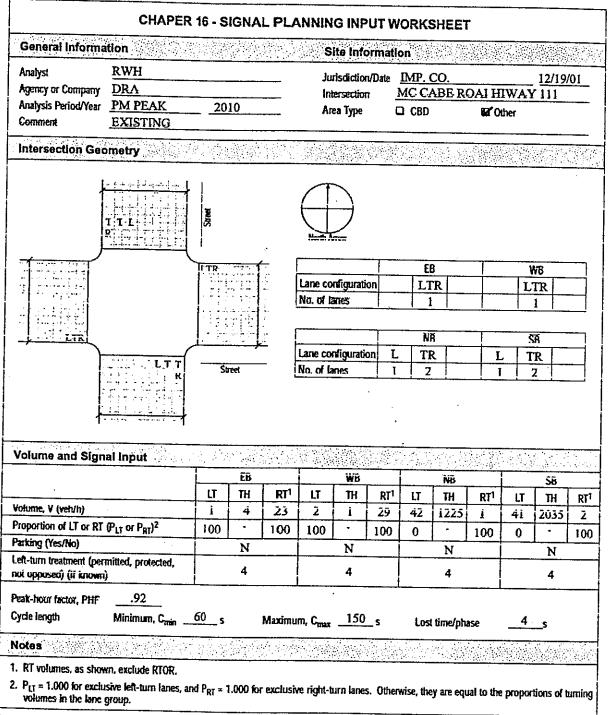


Description <u>EXISTING</u>							
East-West Phasing Plan						Division 61	130
Selected plan (Exhibit A10-8)	Phase No.	1	Phase No.	•	#10,784 H		-
Movement codes	EWT	<u> </u>	Phase No.	2	Ph	ase No. 3	
Critical phase volume, CV (veh/h) Lost time/phase, t _i (s)	42						
	4						
North-South Phasing Plan							
Selected plan (Exhibit A10-8) 1 Movement codes	Phase No:		Phase No:		Ph	ase No. 3	(Constitution)
Critical phase volume, CV (vetv/h)	NST 753						
Lost time/phase, it (s)	753 4						_
Intersection Status Computation	ariikani wa n	adra (winteria) :	Alexander Dec		25 mil. 100 mil	ter Such Sec	
Critical state, CS (vein/ti)	्यात्राक्षः । विद्यास्त्राक्षणे क्षात्रा कृष्टिकृष्ट्रिकः । -	医电影 医电影					
Lost time/cycle, L (s) $L = \sum t_i$			795 8				
Deference cum flow rate DC (solida)			1573	- '			
Cycle length, C (s) $C = \frac{L}{1 - [\min (CS, RS)]}$			2072				
			60				
Critical v/c ratio, X _{cm} X _{cm} = CS							
ns(1 - L)			.583				
Intersection status (Exhibit A10-9)		TIND	ER CAPA	CITY			
Green Time Calculation	1 . 1 . A	0.40	UK CAFA	CLLI			
East-West Phasing	Phase No. 1	1.	Phase No. 2				<u> </u>
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + L$	6.7		Prizse No. 2		Phas	se No. 3	
North-South Phasing							
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	53.3			,]			
Control Delay and LOS			- 1 2 3 4 4 4 4				
	EB	WB		~_NB		- S8	
Lane group	LTR	LTR	L	TR	7	TR	
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worksheet, V (veh/h)	10	10	38	1620	42	1254	
Green ratio, g/C	.046	.046	0	821	0	.821	—
Lane group saturation How rate, s (veh/h) s = RS * number of lanes in lane group	1573	1573	1573	3146		3146	
vlc ratio, X X V/3	.139	 		! - !-		 	
Lane group capacity, c (veh/h) c = V		.139		.627		.486	
Progression adjustment factor, PF (Exhibit 16-12)	72	72		2583		2583	
Uniform delay, d ₁ (s/yeh) (Equation 16-11)	1 1 :	1 1	1	1	ì	1	
incremental delay, d ₂ (siveti) (Cquation 10-12)	27.5	27.5	_	2		1.6.	
Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)	0	0	0	1.2	-	.7	
holay d = d. (PF) + d. + d. (chuch)	31.5	31.5	- "	3.1	0	0	
LOS by lane group	C	1 C :	1 -	A .		2.3 : A	
Delay by approach, d _A (s/veh) \(\frac{\Sigma(0)\cdot \Delay}{\ZV}\)	31.5	31,5		3.1	 	2.3	
LOS by approach	С	C		A	+	A	
intersection delay. $d_r(s/veh) = d_r = \frac{\sum (d_r)(V_r)}{\sum V_r}$	3.6	intersection	LOS (Exhibit		1	Á	
lotes				21.60			

	CHAPER	16 - S	IGNA	L PL	ANNIN	G INF	Y TU	NORK	SHEET	•			
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Agency or Company	DRA					ersectio		*****	ABE R	DAI H	IWAY		<u> </u>
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roportion of LT or RT	(P _{LT} or P _{RT}) ²	100	•	100	100	-	100		1-	100	0	-	100
arking (Yes/No)			N			N		1	N			N	- 00
eft-turn treatment (perr uk opposed) (ili known)	mitted, protected,		4			4			4			4	
eak-hour factor, PHF	.92												
yde length	Minimum, C _{min} _	<u>60</u> s		Maximi	ım, C _{max}	150	s	Los	t time/ph	ase	4	s	
otes													
RT volumes, as show												A 1. 4514 PT	1 2 West .
P _{LT} = 1.000 for exclu- volumes in the lane	sive left-turn lanes, a proup.	$nd P_{RT} = 1$.000 fo	r excl usi	ve right-ti	urn lane	s. Oth	erwise, th	ey are equ	ual to the	propor	rtions of t	រាយប្រវ

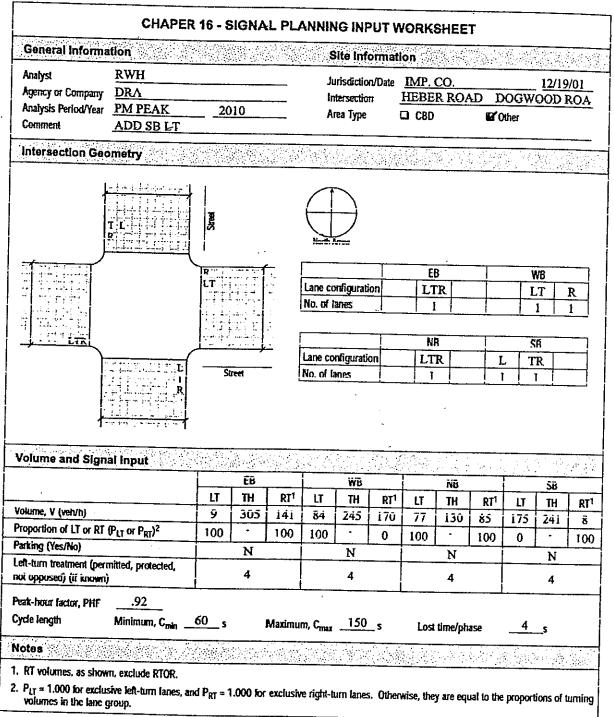
HiCAP 2000 TM PCatalina Engineering, Inc.

Description <u>EXISTING</u>				
East-West Phasing Plan				
Selected plan (Exhibit A10-8)	Phase No	<u>: 41, 34, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,</u>	Bhara Na B	
Movement codes	EW7	<u> </u>	Phase No. 2	Phase No. 3
Critical phase volume, CV (veh/h) Lost time/phase, t _k (s)	35			
North-South Phasing Plan	4			
Selected plan (Exhibit A10-8)				经产品的 跨速
Movement codes	Phase No.	*	Phase No. 2	Phase No. 3
Critical phase volume, CV (veh/h)	NST 1019			
Lost time/phase, \(\text{}\) (5)	4			
Intersection Status Computation				
Critical sum, CS (velvii) CS = ZCV			i 054	
Lost time/cycle, L (s) L = \(\sum_{t_i}\) L = \(\sum_{t_i}\) L = \(\sum_{t_i}\) L = \(\sum_{t_i}\) L (veh/h) ¹			8	
			1573	
$C_{\min} \le C \le C_{\max}$ $1 - \left[\frac{\min\{CS, RS\}\}}{2}\right]$			60	
Critical v/c ratio, X_{crit} $X_{crit} = \frac{CS}{RS(1 - \frac{L}{C})}$		31	.773	
Intersection status (Exhibit A10-9)		TD mr		
Green Time Calculation	ingle og hoviklages og d	UNDE	R CAPACITY	· · · · · · · · · · · · · · · · · · ·
East-West Phasing	Phase No. 1			a said the said of
Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + t_L \right]$	5.7	· · · · · · · · · · · · · · · · · · ·	Phase No. 2	Phase No. 3
North-South Phasing				
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$	Phase No. 1		Phase No. Z	Phase No. 3
1037	54.3		<u> </u>	
Control Delay and LOS				
	FB	WB	NB	SB
Lane group	LTR	LTR	L TR	L TR
Lane group adjusted volume from lane volume worksheet, V (veh/h)	5 !	 	- - - 	
Green ratio, g/C		1	46 1332	45 2212
Lane group saturation flow rate is (web.ret	.029	.029	0 .838	0 .838
S = KS * number of lanes in lane group	1573	1573	1573 3146	1573 3146
ulc emin, X × <u>v/s</u>	.1	.03	.505	920
Lane group capacity, c (veh/h) c = V	46	46		.830
Progression adjustment factor, PF (Exhibit 16-12)	1 1	1	2636	2636
Uniform delay, d ₁ (s/yeh) (Equation 16-11)	28.4	28.3	1 1 1	1 1 1
incremental delay, de (arrent) (Equation 10-12)	4.3	1.2	1.7	2.7
Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16) Delay, d = d ₁ (PF) + d ₂ + d ₃ (s/veh)	0	0	0 0	0 0
LOS by lane group	32.7 C	29.5	2.1	6.1
Detay by approach, d _A (s/ven) Σ(θ(V)	32.7	1 C ;	A	A
LOS by approach	C	29.5 C	2.1	6.1
intersection delay, d_i (s/veh) $d_i = \frac{\sum (d_i)(V_i)}{\sum_{i=1}^{N} (d_i)}$	5.1		A A	A
Notes 24)S (Exhibit 16-2)	A



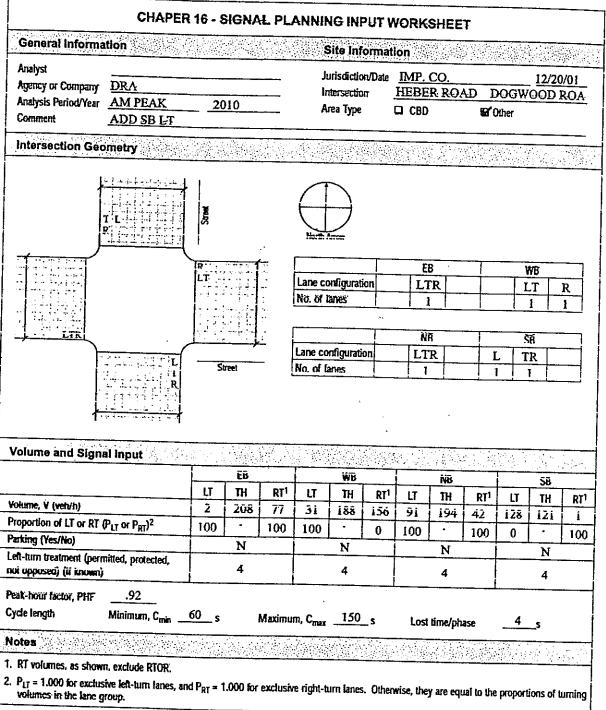
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East-West Phasing Plan Selected plan (Exhibit A10-8) Movement codes		ergangan at ana				
	<u>i na transp</u> ara na prakana na ka	45.15年,经营产品的基础	Albert Goger		98.2w1v2.0	Det parket has
Movement codes	Phase No.	1	Phase	No 2		
	EWT	`	Filase	Na Z	Ph	iase No. 3
Critical phase volume, CV (veh/h) Lost time/phase, t _L (s)	480				<u> </u>	
North-South Phasing Plan	4					
Selected plan (Exhibit A10-8) 2a					Yeldani.	学习多点
Movement codes	Phase No. SLT	1	Phase I		Ph	ase No. 3
Critical phase volume, CV (veh/h)	184		NS:			
Lost time/phase, t ₄ (s)	4			,		
Intersection Status Computation						4 de 18 d
Critical sum, C3 (veivin) C5 = ZCV			965	<u> </u>	in describitions	(4)(3)(4)(4)
Lost time/cycle, I. (s) L = \(\sum_{\text{t}}\) L Poference sum flow rate PS (\(\sum_{\text{text{th}}}\))1	•		12			
Cycle length, C (s) C = L			157	3		
$C_{\min} \le C \le C_{\max}$ $T = \left[\frac{\min (CS, RS)}{ES}\right]$			60			
Critical v/c ratio, $X_{cm} = \frac{CS}{RS(1 - \frac{L}{C})}$.95	.77			
Intersection status (Exhibit A10-9)		IIN	DED CA	PACITY		
Green Time Calculation	i estilarentii.	A Call Arth	DER CA	PACITY		
East-West Phasing	Phase No. 1		Phase N			
Green time, g (s) $g = \left[(C - L)\left(\frac{CV}{CS}\right) + t_L\right]$	27.8		Littage 18	12	Phas	se No. 3
Rorffi-South Phasing						
Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + \iota_L \right]$	Phase No. 1 13.1		Phase No	1.7	Phas	e No. 3
Control Delay and LOS	13.1		19.1			
Control Detay and LUS					Jey saus	
	EB		,			-SB
Lane group	LTR	LT	R	LTR	L	TR
Lane group adjusted volume from lane volume worksheet, V (veh/h)	332	307	185			
Green ratio, g/C	.396		. 1	142		262
Lane group saturation flow rate is (web/b)		.396	: -	.252	.152	.471
s = RS * number of lanes in lane group v/c ratio, X v V/s	1573	1573	1573	1573	1573	1573
	.533	.428	.297	.358	705	.354
Lane group capacity, c (veh/h) c = V	623	623		397	- 	
Progression adjustment factor, PF (Exhibit 16-12)	1	1	1	1		741
Uniform delay, d., (s/veh), (Equation, 16-11),	13.9	13.2	1	18.4	24.5	10.1
instrumental delay, de (street) (Equation 10-12)	3.2	2.1		2.5		1.3
Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16) Nelay, d = d ₁ (PF) + d ₂ + d ₃ (s/veh)	0	0	0	0	0	0
LOS by lane group	17.1 B	15.3		20.9		11.4
Delay by approach, σ_{A} (siven) $\Sigma(000)$	17.1	14.6	В	1 C 1		B :
LOS by approach	B	B		20.9		26.8
intersection delay, d_1 (s/veh) $d_1 = \sum_{i=1}^{n} (d_i)(V_i)$	19.4		on LÕS (Exfil	C La 16 50		<u>C</u>
Votes	etanikakarenete	nun Sechi	ıı mə it ıl lı	UIL (D-Z)	B	Vilgalestrija



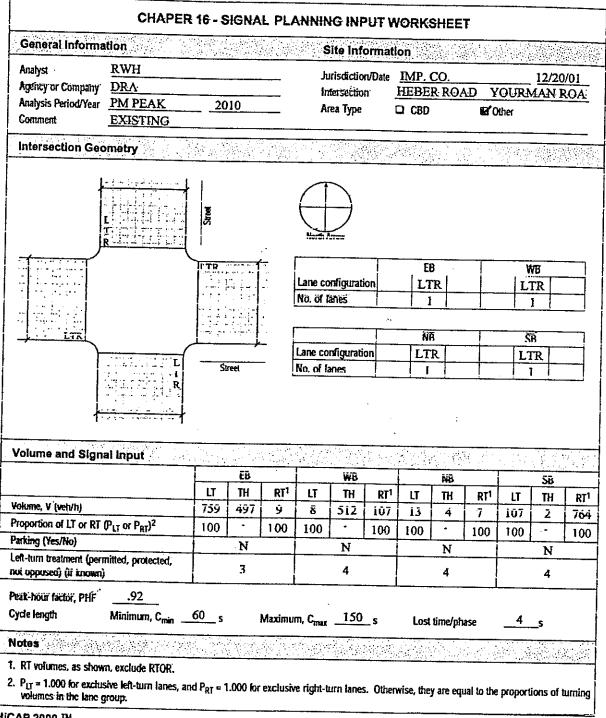
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East-West Phasing Plan	Description ADD SB L1						<u> </u>
Phase No. 1	East-West Phasing Plan		n Anexes o	s ja sija da sa d	Park and a	9K0*****	el regió contro a
Movement codes SEWT Phase No. 2 Phase No. 3		Db 11-		1444 July	British Salah		
Control phase volume, CV (Veshit) 3000 4	Movement codes		1	Phase	No. 2	Pt	iase No. 3
North-South Phasing Plan Selected plan (Estribit A10-8)	Critical phase volume, CV (veh/h)						
Phase No. 1		4					
Movement codes		心如 Agi Sagi [2]				San Astr	Saasdati as
Critical phase volume, CV (veh/h) 338	Selected plan (Exhibit A10-8) Movement codes		1	Phase	No. 2	Ph	ase No. 3
Lost time/plass_ t (s)							
Intersection Status Computation Critical status Computation Critical status (CS (veilvit) CS = Σ CV CS Reference status (CS (veilvit) CS = Σ CV Reference status (County) CS County CS County CS County CS CS CS CS CS CS CS C	Last time/phase, t ₄ (s)						
Critical sum. CS (veich) CS = ∑CV CS S S S S	Intersection Status Computation		di Mada de		i Marakatan dan	end on vestifi	inviendat itt
Reference sum flow rate PS (seth/h) 1573 1573 1573 1573	Critical sum, CS (veivin) CS = ZCV	3 44 3 7 48 1 AV 1 24 32 3	व प्रसार असम्बद्धाः				
Cycle length, C (s) C =	Lost time/cycle, L (s) L = ∑ t _i				0		
Comp C C C C C C C C C	Could at Add				3		
Intersection status (Exhibit A10-9) UNDER CAPACITY	$C_{\min} \le C \le C_{\max}$ $\gamma - \left[\frac{\min (CS, RS)}{RS}\right]$			60			
Intersection status (Exhibit A10-9)	ge/1_ L)				8		
Careen Time Calculation East-West Phasing Phase No. 1 Phase No. 2 Phase No. 3	Intersection status (Exhibit A10-9)		TD	DED O			
East-West Phasing		<u> </u>	UN	DER CA	PACITY	. —	
Creen time, g (s) g = [C - L) (CV / CS) + t_L 28.4		Phase No. 1		gapagan Tangan		Mid Magas	
North-South Phasing	Green time, $g(s) = (C-1) \frac{CV}{CV}$			Phase N	a 2	Phas	se No. 3
Green time, g (s) $g = [C - L] \frac{CV}{CS} + I_L$ 31.6 Control Delay and LOS $\begin{array}{c ccccccccccccccccccccccccccccccccccc$					•		
Lane group LTR				Phase No	n. 7	Phas	ie No. 3
Lane group adjusted volume from lane volume worksheet, V (veh/h) 226 204 170 211 139 132 Green ratio, g/C 407 407 407 407 46 0 46 0 46	Control Delay and LOS					7 - 10 - 10 O	1981 - 1991 - 1991
Lane group LTR			WB:		NB		SB
Lane group adjusted volume from lane volume worksheet, V (veh/h)	Lane group	LTR	LT	R	i rp:	, j	
Green ratio, g/C	Lane group adjusted volume from lane volume worksheet, V (veh/h)	226	 	! - 	-		
1573 1573	· · · · · · · · · · · · · · · · · · ·	.407		i			<u> </u>
Vic ratio, X Vis grown	3 = 1C) flumber of lanes in lane group			1			
Progression adjustment factor, PF (Exhibit 16-12) 1 1 1 1 1 1 1 1 Uniform delay, d ₁ (s/veh) (Equation, 16-12) 1 1 1 1 1 1 1 1 1 Uniform delay, d ₂ (s/veh) (Equation, 16-12) Intial queue delay, d ₃ (s/veh) (Appendix F, Ctr. 16) Dolay, d = d ₁ (PF) = d ₁ = d ₂ (c/veh) Dolay d = eq. (PF) = d ₂ = d ₃ (c/veh) Dolay d = progression adjustment factor, PF (Exhibit 16-12) Dolay d = d ₂ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₃ = d ₃ (c/veh) Dolay d = d ₄ (PF) = d ₄ = d ₅ (c/veh) Dolay d = d ₄ (PF) = d ₅ = d ₅ (c/veh) Dolay d = d ₄ (PF) = d ₅ = d ₅ (c/veh) Dolay d = d ₄ (PF) = d ₅ = d ₅ (c/veh) Dolay d = d ₅ (PF) = d ₅ = d ₅ (c/veh) D	vlc ratio, X X - VIS	354	<u> </u>			_	<u> </u>
Progression adjustment factor, PF (Exhibit 16-12) 1 1 1 1 1 1 1 1 1	Lane group capacity, c (veh/h)					_	.182
Uniform delay, d ₁ (s/veh) (Equation, 16-11). 12.3 12.1 11.8 10.1 9.6 Intremental delay, d ₂ (s/veh) (Equation, 16-12). 1.5 1.3 1 1 .6 Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16). 0 0 0 0 0 0 Delay, d = d ₁ (PF) = d ₂ = d ₃ (s/veh). 12.9 13.4 12.8 11.1 10.1 LOS by lane group. B B B B B Deray by approach. B B B B LOS by approach. B B B B Intersection delay, d ₁ (s/veh) d ₁ = $\frac{\sum (d_1)(V_1)}{\sum V_1}$ 12.4 Intersection LOS (Exhibit 16-2) R			· · · · · · · · · · · · · · · · · · ·				723
Intersection delay, d ₂ (s/veh) (Cquasion 16-12) 1.5 1.3 1 1	Uniform delay, d. (s/veh) (Equation 16-11)					1	
Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16) 0 0 0 0 0 0 0 0 0	incremental delay, do (siveti) (Equation 10-12)					= ==	
Holay, $d = d_1(PF) + d_2 + d_3$ (séveh) 12.9 13.4 12.8 11.1 10.1 LOS by lane group B B B B B Detay by approach, d_A (séveh) $\frac{\sum_{i \in A} (S_i)^2}{\sum_{i \in A}}$ 13.9 13.2 11.1 10.1 LOS by approach B B B B Intersection delay, d_1 (séveh) $d_1 = \frac{\sum_{i \in A} (S_i)(V_i)}{\sum_{i \in A}}$ 17.4 Intersection LOS (Exhibit 16-2) R	Initial queue delay, d ₃ (s/veh) (Appendix F. Ch. 16)					- ;	
Deray by approach, d_{A} (s/veh) $\frac{\sum(d_{A}(v))}{\sum v}$ 13.9 13.2 11.1 10.1 LOS by approach B B B B B B B B B B B B B B B B B B	Dolay $d = d_1(PF) + d_2 + d_3 (sfroh)$						
13.9 13.2 11.1 10.1 LOS by approach Entersection delay, d_1 (s/veh) $d_1 = \frac{\sum (d_1)(V_1)}{\sum V_A}$ 13.9 13.2 11.1 10.1 lintersection delay, d_1 (s/veh) $d_1 = \frac{\sum (d_1)(V_1)}{\sum V_A}$ 15.4 Intersection LOS (Exhibit 16-2) R						 	
Intersection delay, d ₁ (s/veh) d ₁ = \(\sum_{\text{L(d_1)(V_1)}}\) B B B B B B B B B		13.9	13.2			1	
12.4 Intersection LOS (Exhibit 16-2)					В		
NOTES (PECTAL INCOMES A WAS A MESSA CHARLES A SELECTION AS A CONTRACT OF THE C	Z*A 1	15.4	Intersection	ın LÖS (Exhi		R	
1. RS - 1710(PHP)(L), where L is area adjustment factor (0.90 for CDD and 1.0 for all others).						3 19 3 4 3 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\$160. EV:546

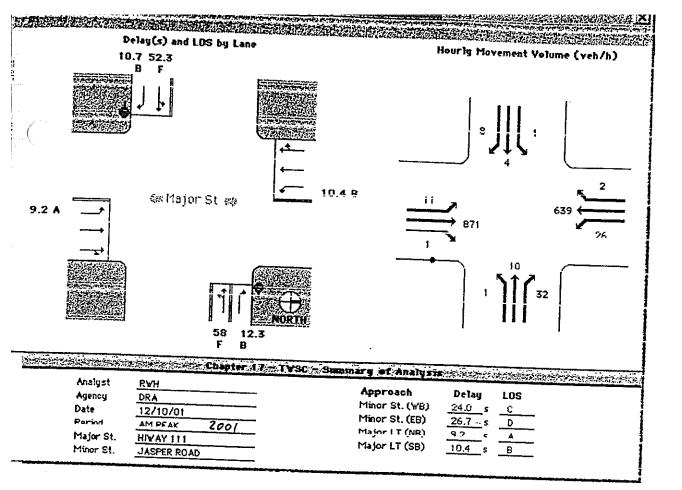


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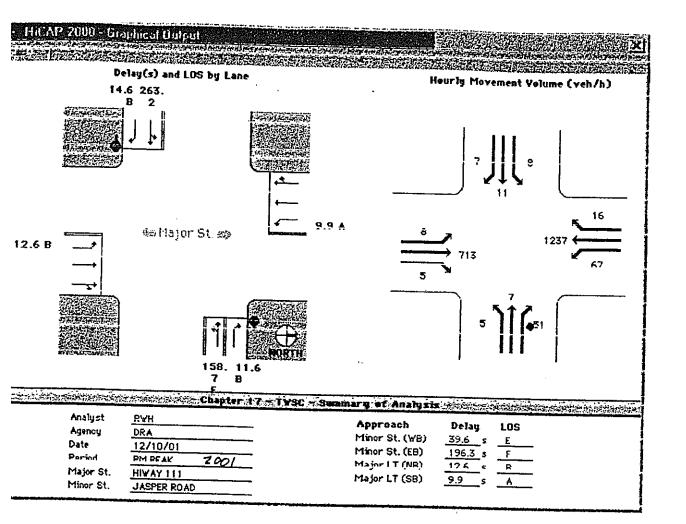
Description <u>EXISTING</u>	•			
East-West Phasing Plan	1680 164 162 163 164		- 14-24 A. C.	
Selected plan (Exhibit A10-8)	Phase No			
Movement codes	EW		Phase No. 2	Phase No. 3
Critical phase volume, CV (veh/h)	1307			
Lost time/phase, I _L (s)	4			
North-South Phasing Plan				
Selected plan (Exhibit A10-8) 1 Movement codes	Phase No.		hase No. 2	Phase No. 3
Critical phase volume, CV (veh/h)	NST	<u> </u>		LINGSE MOT 2.
Lost time/phase, 4 (5)	1140			
Intersection Status Computation		TO Allow and the story		
Critical struct C2 (Activity) C2 = ZCA				
Lost time/cycle, L (s) $L = \sum t_i$			244 6	
Performice sum Bous rate DS (sale/h)?			1573	
Cycle length, C (s) C = L			13/3	
$C_{\min} \le C \le C_{\max}$ $\left\{ -\left[\frac{\min \left(CS, RS \right)}{RS} \right] \right\}$			150	
Critical v/c ratio, X _{cm} X _{cm} = CS				·
ns(1 - L)		.9%	1.642	
Intersection status (Exhibit A10-9)				
Green Time Calculation			CAPACITY	
East-West Phasing	Phase No. 1			
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$	†	Ph	ise No. 2	Phase No. 3
North-South Phasing	79.8		,	
	Phase No. 1	. Pha	se No. 2	Phase No. 3
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + L$	70.2			
Control Delay and LOS				ta garan ka
	~E8~	WB	NB	SB SB
Lane group	LTR	LTR		
Lane group adjusted volume from tage uniforms		- LIK	LTR	LTR
WORKSheet, V (veh/h)	545	557	4	10
Green ratio, g/C	.506	.506	.441	.441
Lane group saturation flow rate, s (veh/h) s = RS * number of lanes in lane group	1573	1573	1573	
v/c ratio, X × V/3	coci	 	 	1573
Lane group capacity, c (veh/h) cV	.685	-7	.006	.014
Progression adjustment factor, PF (Exhibit 16-12)	795 ;	795	694	694
Uniform delay, d. (s/veh) (Equation 16-11)	1 1	1	1	1
Incremental delay, d ₂ (afverl) (Equation 10-12)	4.8	28.4	23.5	23.6
Initial queue delay, d ₃ (s/veh) (Appendix F. Ch. 16)	0	5.1	0	: 0 ;
flolay $d = d_1(PF) + d_2 + d_3 (stunh)$	32.8	33.5	0	0
LOS by lane group	C	: 33.3 C	23.5 C	23.6
Delay by approach, d _A (s/veh) <u>Σ(d)(v)</u>	32.8	33.5	23.5	; C ;
LOS by approach	С	C	C	23.6
Intersection delay. d_1 (s/veh) $d_1 = \frac{\sum (d_1)(V_1)}{\sum V_1}$	30	Intersection LOS		C
	grafia de la companya		LAMOR 10-2	С

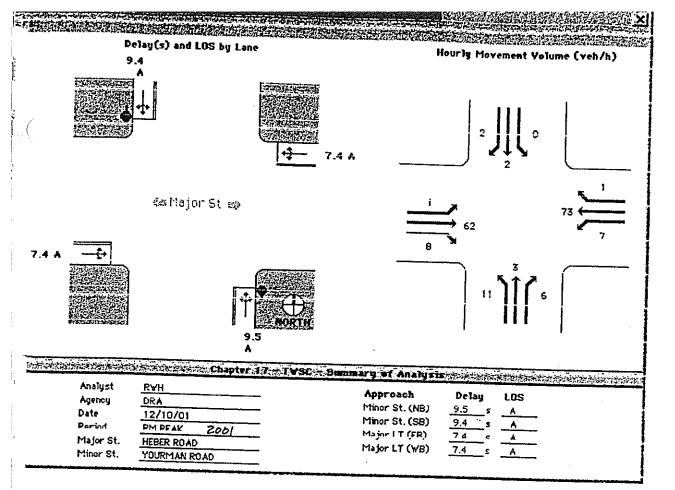


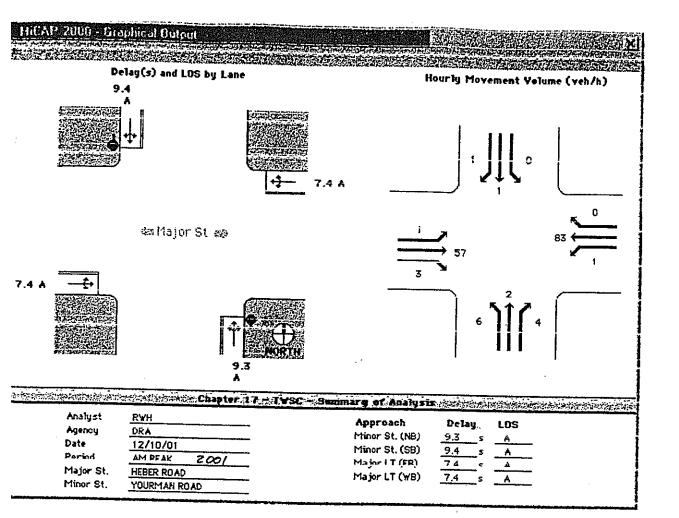
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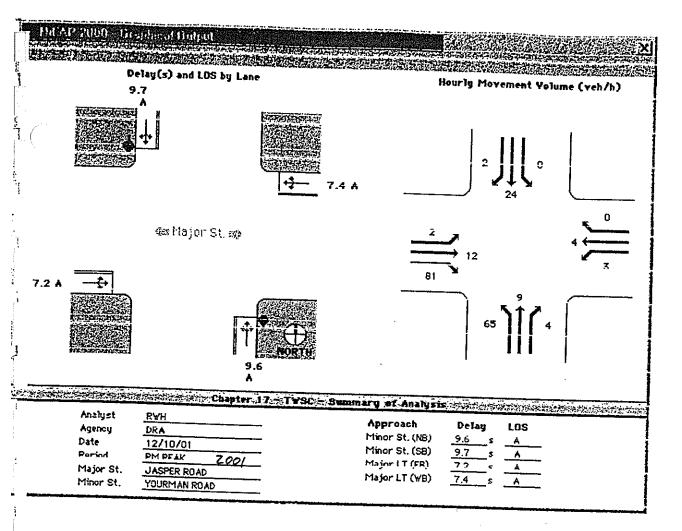


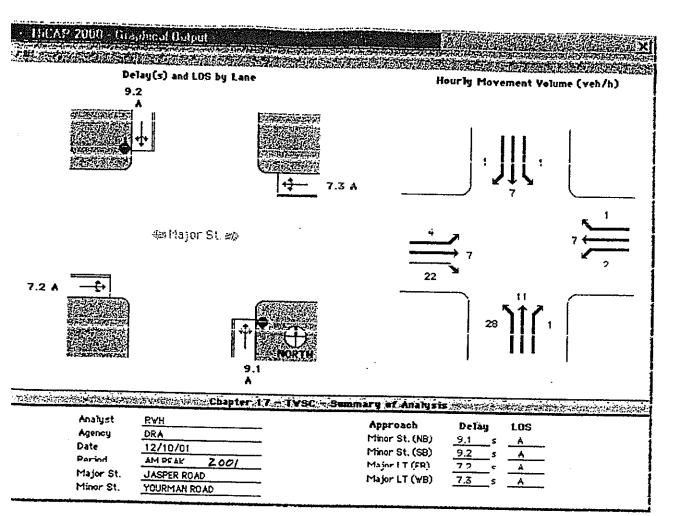
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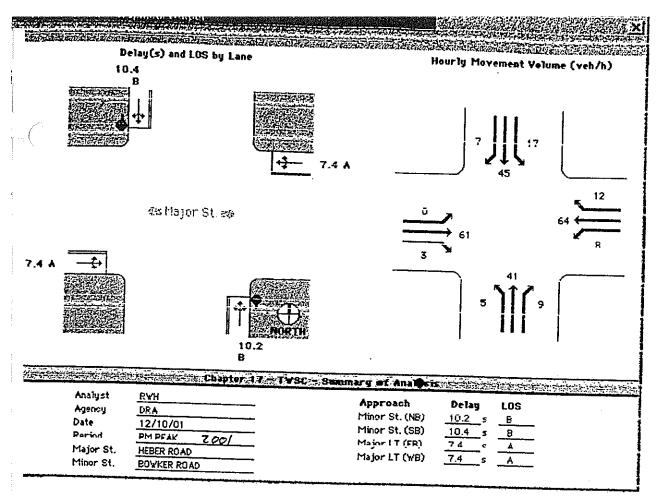


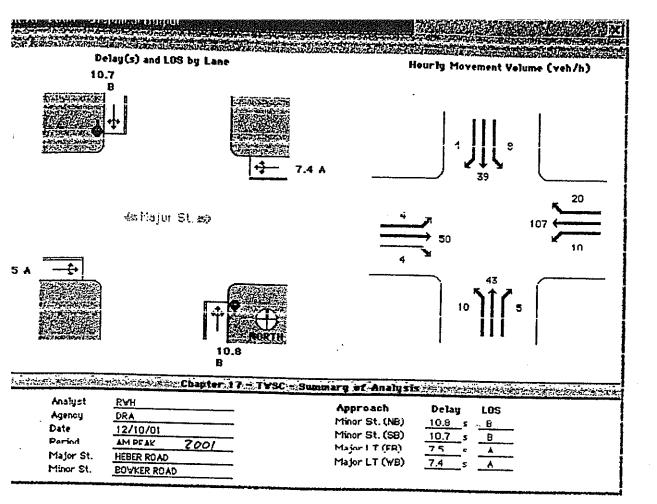


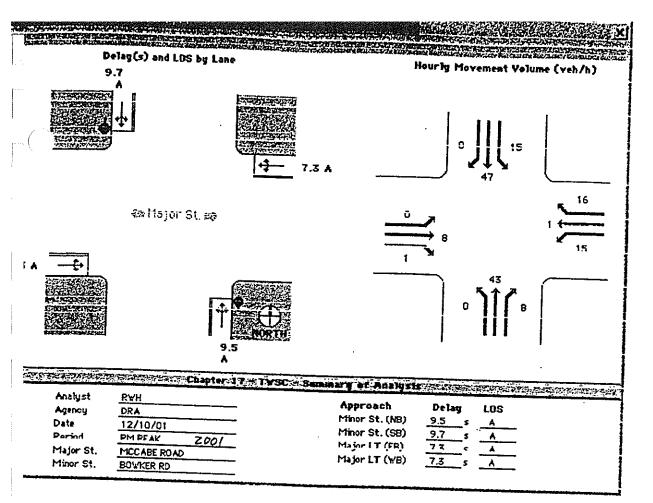








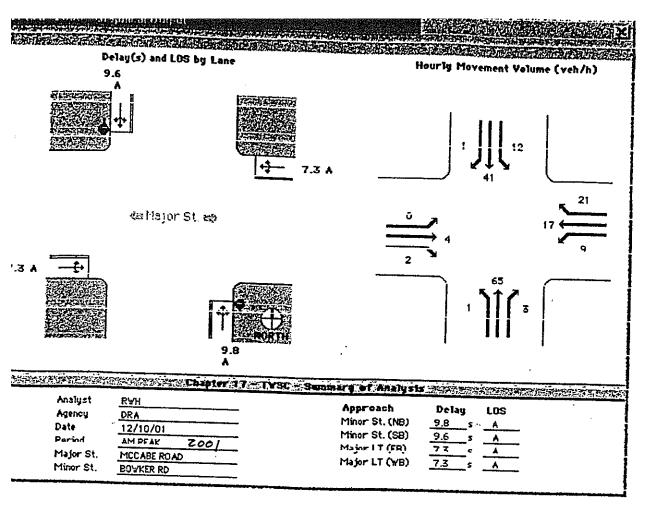


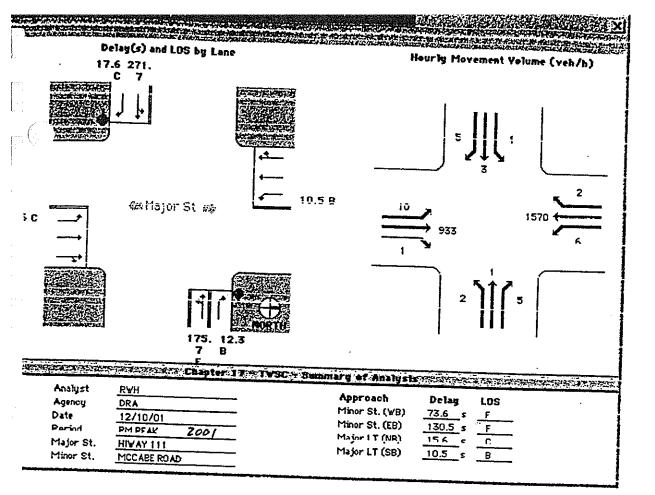


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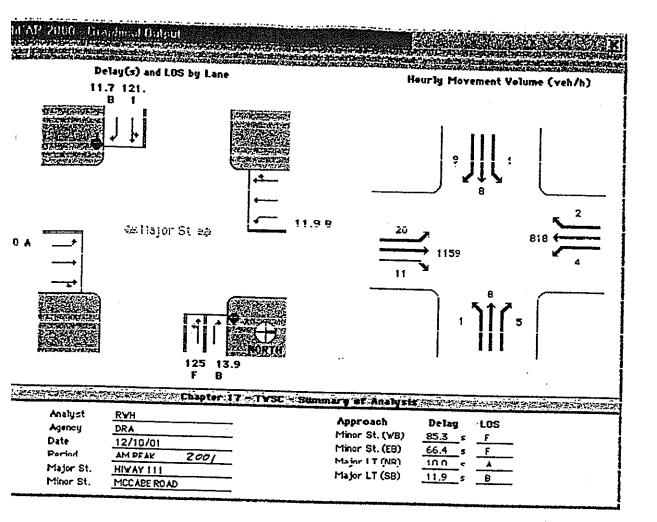
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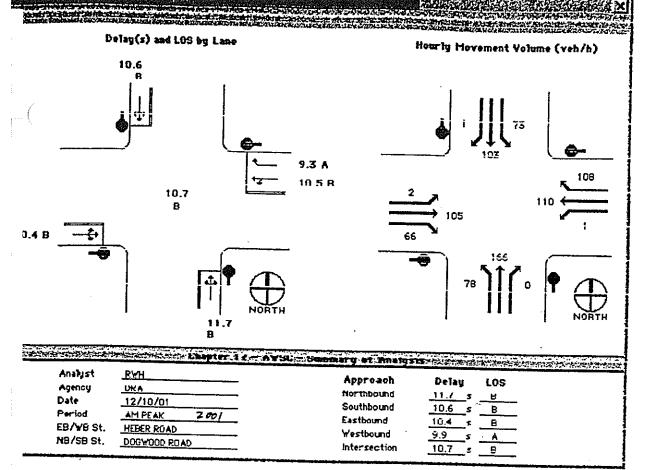
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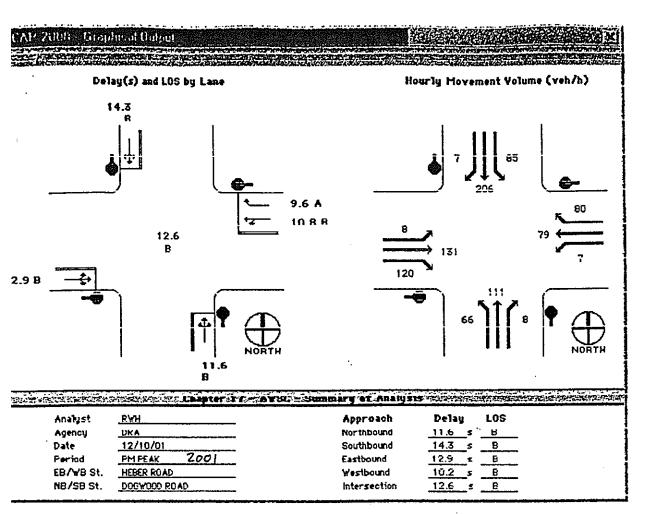


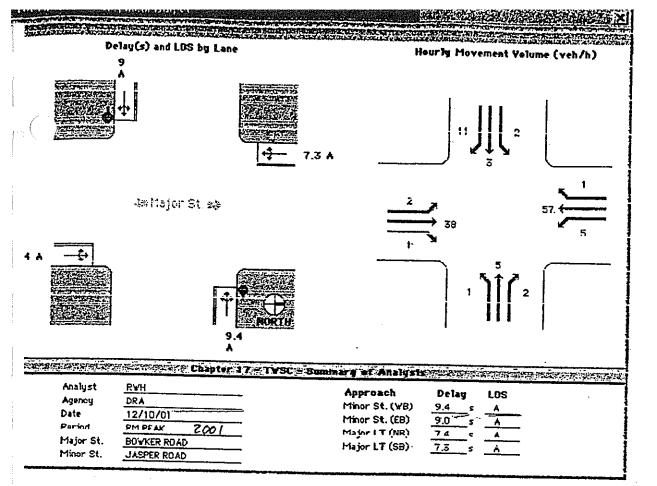


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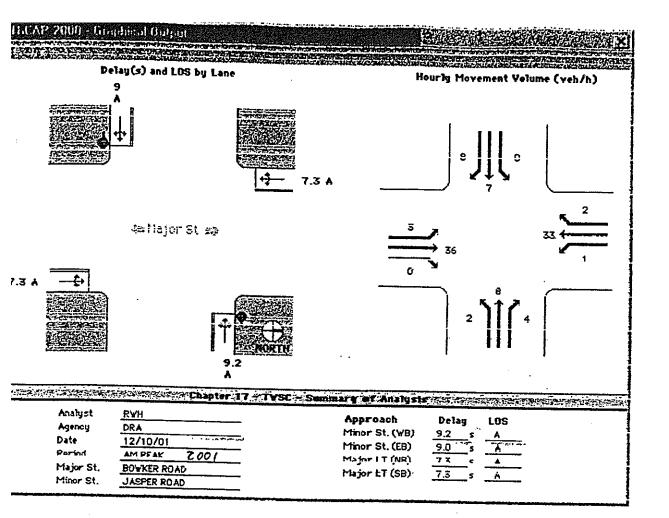


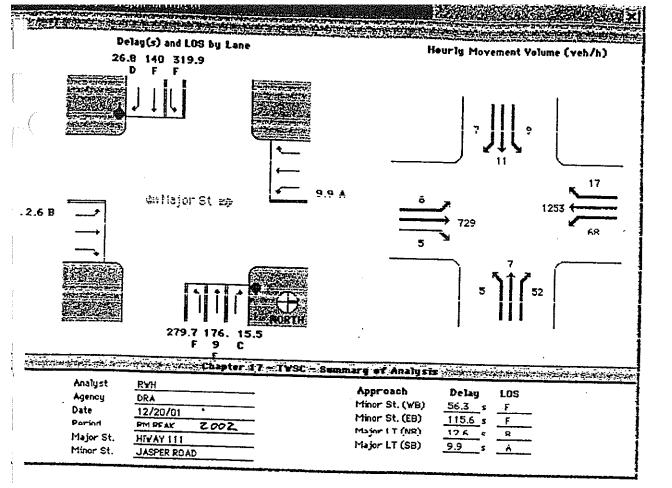


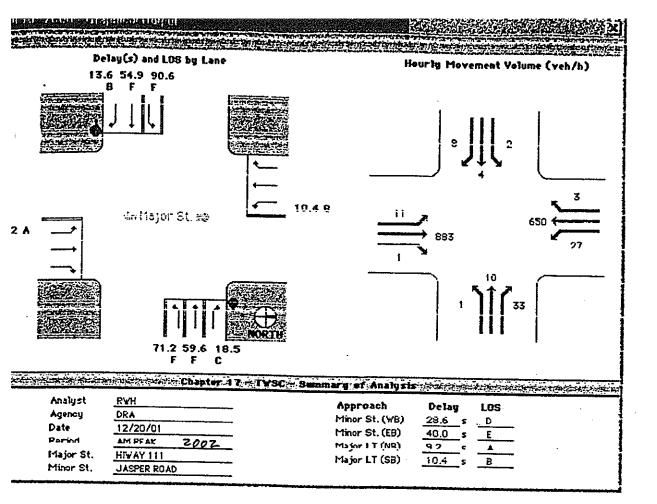


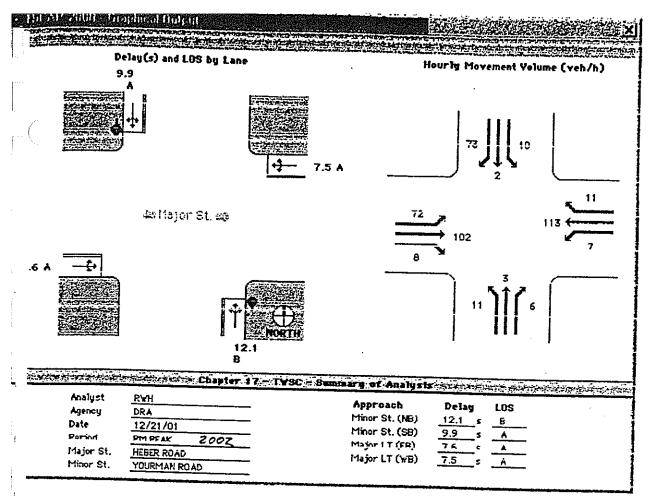


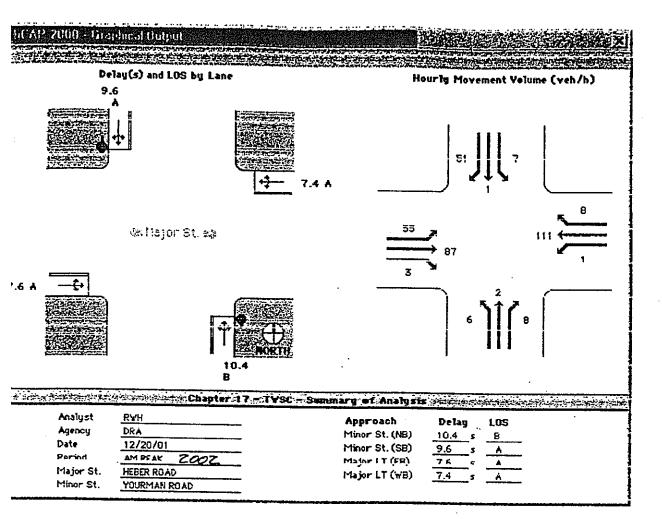
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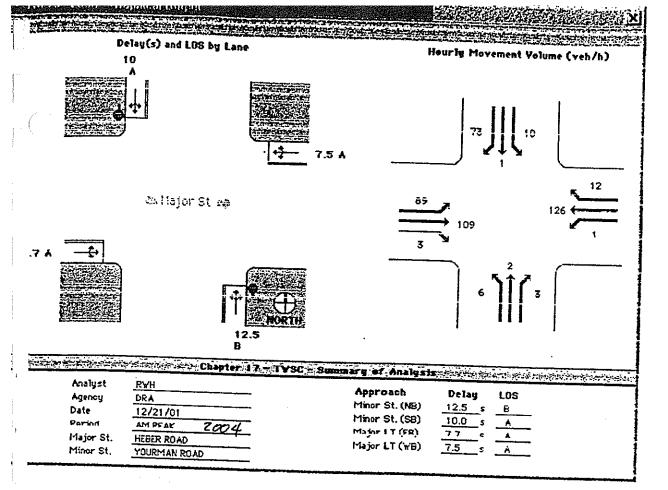


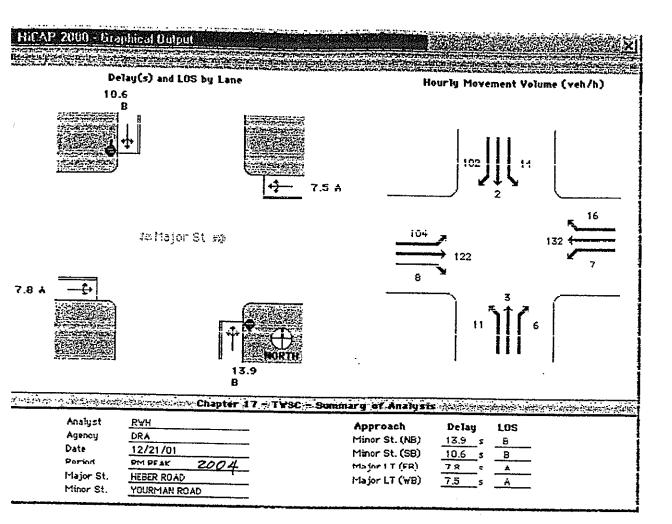


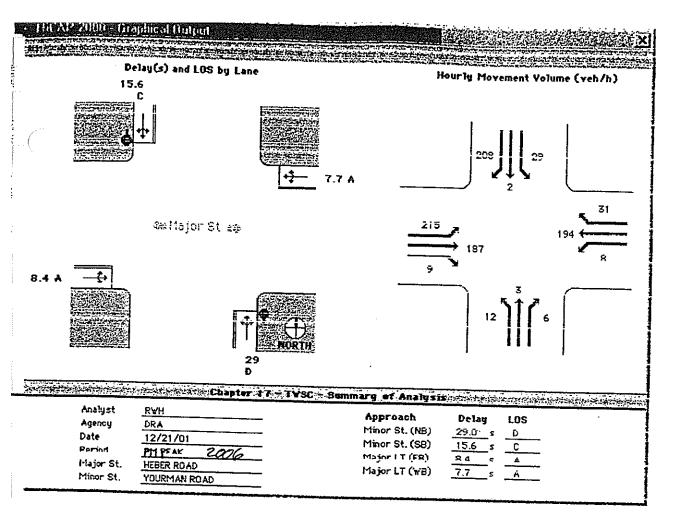


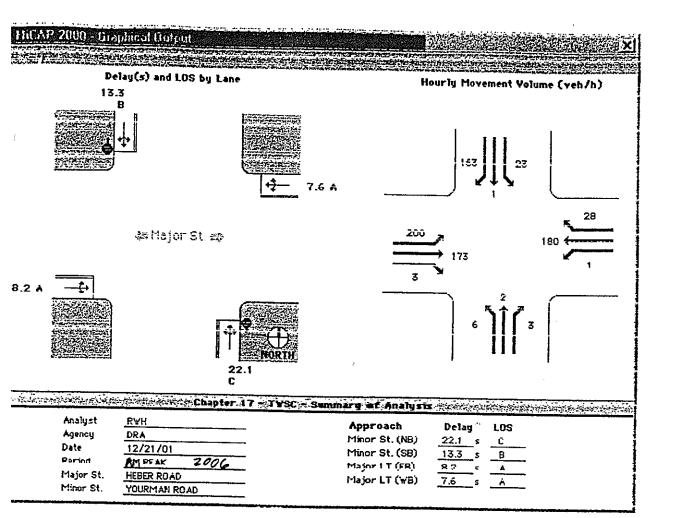


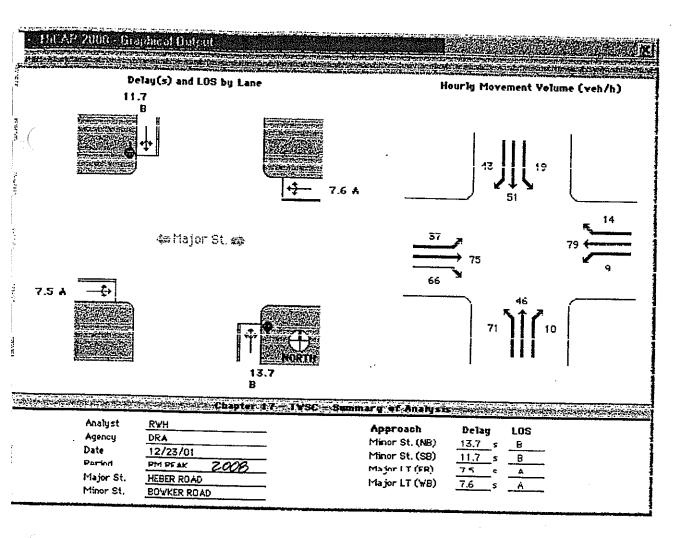


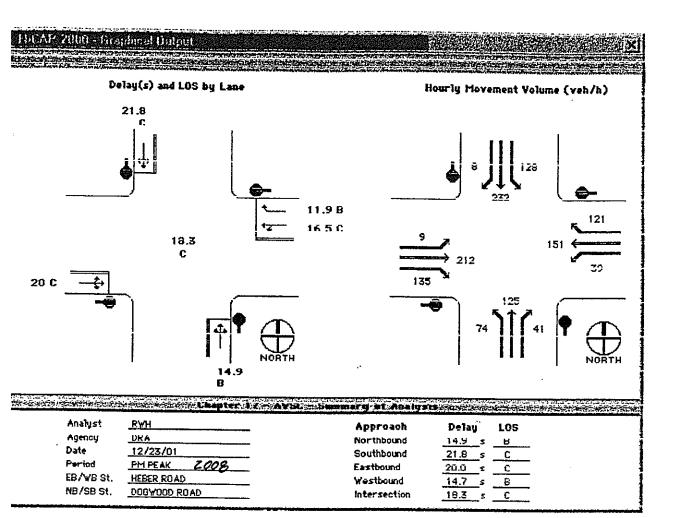


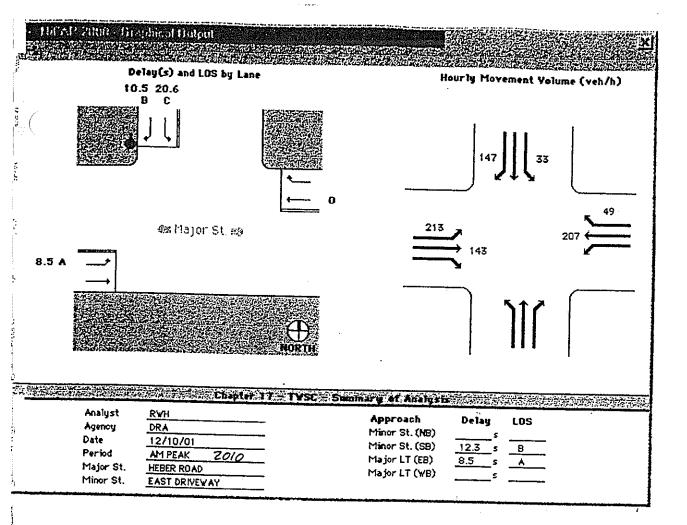


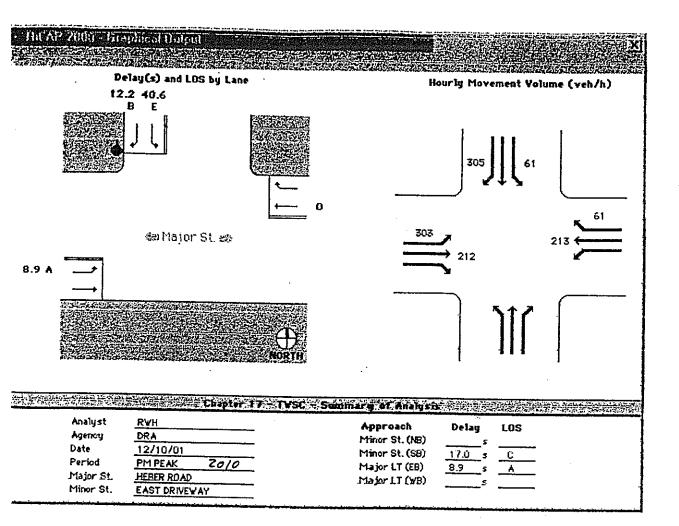








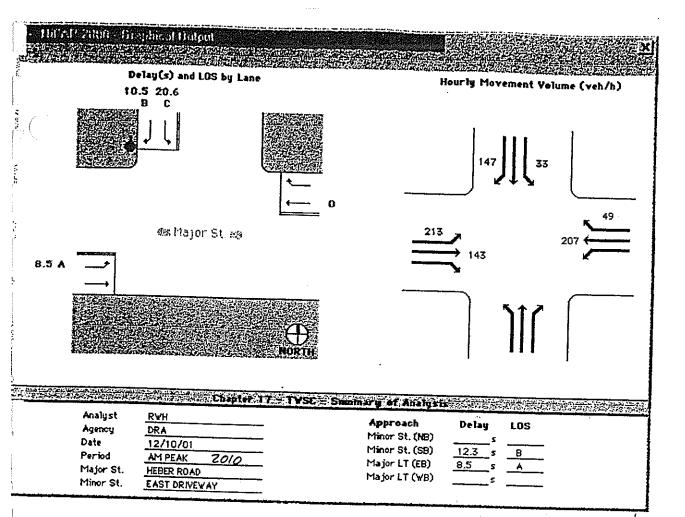


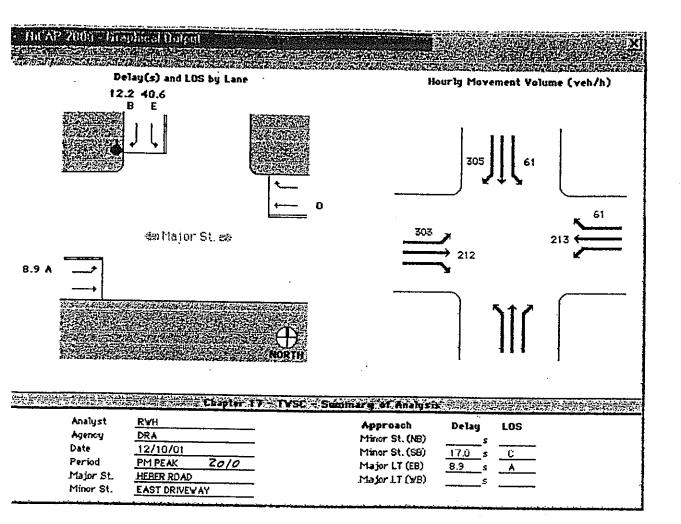


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General Information								
Description <u>EXISTING VOLUMES</u>								
East-West Phasing Plan	KOT ATOMOS ATOMOS	1-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				Part Charles	3-17 - 1-2-1-3 3-17 - 1-3-1-3	
Selected plan (Exhibit A10-8)	Pha	se No. 1	_ 	Ph	ase No.	2	DL.	
Movement codes		EWT					PII.	ase No. 3
Critical phase volume, CV (veh/h) Lost time/phase, t _i (s)		67						
		4						
North-South Phasing Plan								
Selected plan (Exhibit A10-8) 3a Movement codes		se No. 1			se No. 2	2	Pha	se No. 3
Critical phase volume, CV (veh/h)		NSL 35		1	NLT			TZV
Lost time/phase, t ₁ (s)		4			12 0			415
Intersection Status Computation						ا د هاد اید داد	ng galaktiya da	୍ ୟ ଅଧିକ୍ରୟ ଅଧିକ
Critical sum, CS (velvir) CS = ZCV	A State of the Artist States	<u> engarra</u>	N. Marijana			igan et		
Lost time/cycle, L (s) $L = \sum t_i$					529 12	**************************************		
Polarativa cum firm rate DS (ush/h)1				<u> </u>	573	···		
Cycle length, C (s) C = E								
$C_{\min} \le C \le C_{\max}$ $1 - \left[\frac{\min (CS, RS)}{RS}\right]$					60			
Critical v/c ratio, X _{cm} X _{cm} = CS				·				
Rs(1 - L)					.42			
ntersection status (Exhibit A10-9)	·		ITNE	DED (CAPA	OTTE		
Green Time Calculation	8시 : 최근(17	garan diri	OIN	DER	CAPA	CITY		
East-West Phasing	Phoe	No. 1	enger Dega		3 (C) (C)	100		<u>Selfolii si</u>
Green time, $g \cdot (s) \cdot g = (G - L) \cdot \left(\frac{CV}{CS}\right) + t_U$				Phas	e No. 2		Phas	e No. 3
Korth-South Phasing		0.1						
		No. 1	<u> </u>	Phas	e No. 2		Phas	e No. 3
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$	7	7.2		- 1	1.	- 1	4	1.7
ontroi Delay and LOS				Net 4. K				E ANTONIO
	EB		WB		T	NB		SB
ane group	LT	R	LT	R	L	TR	T	: :
ane group adjusted volume from lane volume					<u> </u>	IK	L	TR
rorksheet, -V-(veh/h)	29	62	29	60	48	916	36	633
men ratio, g/C	.101	.101	101	.101	.07	.646	.053	.628
ane group saturation flow rate, s (veh/h) = RS * number of lanes in lane group	1573	1573	1573	1573		3146		3146
cratin, X v V/s					<u> </u>		-	
one group capacity, c (veh/h) c = V	1.184	.388	.184	.374	.434	.451	.434	.32
, , , , , , , , , , , , , , , , , , ,	160	160	160	160	110	2032	83	1977
rogression adjustment factor, PF (Exhibit 16-12)	1	1	1	1	1	1 :	1	1
niform delay, d ₁ (s/veh) (Equation 16-11)	24.7		24.7		26.8	5.3	27.6	5.2
cremental delay, d ₂ (s/veh) (Equation 10-12) itial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)	2.5	$\frac{7}{2}$	2.5		11.9	.7	15.7	
12y d = d (PF) + d + d (c/mh)	0	0	0	0	0	0 ;	0	0
S by lane group	27.2 C		27.2				13.3	
day by approach, d _A (s/veh) Σ(d)(V)	30.6	 -	30.3	<u> </u>	D:		D:	
S by approach	C	_	30.3 C			7.7		7.6
ersection delay, d_1 (s/veh) $d_1 = \sum_{i=1}^{n} (d_i)(V_i)$	8.5	 -			T	A		A
	በገ	ı	Intersection	и 1772 (exhibit '	16-21	A	

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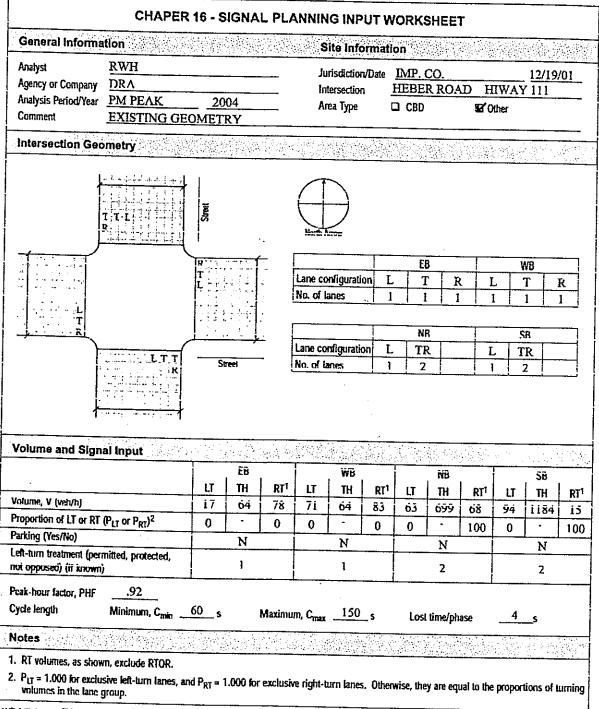
Analyst Agency or Company	DRA					risdiction tersection		IMP. (HEBE		AD F	IWA'	12/10 Y 111	0/01
Analysis Period/Year Comment	EXISTING VO		001 S		A.	еа Туре	1	CBD		EZ (Other		
Intersection Geo	metry												
	111	I R	Committee By Commi					EI				WB	
					No. of la	nliguratio mes	n	L'				LT 1	R 1
TT R							1	NF	3			SR	
}-	LTT		reel		Lane cor	aliguration	n L	TF	2	1		TR	_
/olume and Signs	al Input				2 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					(41		ener v	
			ĒB	<u>ાં કર્યું કરો તો</u>		₩B		1	ŇB		1	SB	
		LT	TH	RT1	ĹŢ	TH	RT1	LT	TH	RT1	LT	TH	F
ntume, V (veh/h) roportion of LT or RT (D D 12	ÎÓ	iż	75	ii	14	36	δĺ	696	ó	45	1157	┾
arking (Yes/No)	LTI OL L ^{KI}),	100	-	0	100		0	0	•	100	0	·	1
elt-turn treatment (perm	titted, omterted		N		<u> </u>	N			N			N	
oi opposed) (îř known)	[1			1			2			2	
cak-hour factor, PHF ycle length	92 Minimum, C _{min}	<u>60</u> 5	i	Maximu	m, C _{max}	150	s	Lost	time/ph	25e	4	5	
otes							in O	ંદું સહ		ing the set	ed or	egir Arteria	
RT volumes as shown	ı, exclude RTOR.		<u> </u>	* 100 1000	4 1 1 1	2 1 55 34 50		tiege iš		era jegang	3), 100		្រាញ

Description <u>EXISTING VOLUMES</u>								
East-West Phasing Plan								21 - 12 - 15 - 12 - 15 - 15
Selected plan (Exhibit A10-8)		se No. 1			se No. 2			se No. 3
Movement codes Critical phase volume, CV (veh/h)	I I	EWT						
Lost time/phase, t _L (s)		88 4						
North-South Phasing Plan	ration of			d Assign	ingeret.	o productiva se s	Cathoda e a consti	
Selected plan (Exhibit A10-8) 3a		se No. 1	211, 224, 33, 31		se No. 2			
Movement codes		NSL			SE MU. Z VLT	·		se No. 3 VST
Critical phase volume, CV (veh/h)		47			17			587
Lost time/phase, t _e (s)	tarina a tari	4	strania di esta to		0			4
Intersection Status Computation					Ç e.s			
Critical sum, CS (veivii) $CS = \sum CV$ Lost time/cycle, L (s) $L = \sum t_{ij}$					739			
Defending the Let DS (rep/h)1					12			
Cycle length, C (s)					573			
$ \begin{array}{ccc} \text{Cycle length, C (s)} & & \text{C = } & \frac{t}{1 - \left[\frac{\min{(CS, RS)}}{\tilde{\kappa}\tilde{s}}\right]} \\ \end{array} $					60			
Critical v/c ratio, $X_{cra} = \frac{CS}{RS(1-\frac{L}{C})}$				••	587			
Intersection status (Exhibit A10-9)		· · · · · · · · ·	IIN	DER (TADA	CITY		
Green Time Calculation	ig 6.4.4ji 6, 1861	સામાં કર્યું કર્યું	Mar manisis			1. 1. 12	S. 34. 12.	
East-West Phasing	Phase	• No. 1	1 72 3277		e No. 2	10 0 480 by	Dit	e No. 3
Green time; g (s) $g = (C-1) \left(\frac{CV}{CS}\right) + \frac{1}{V}$	C	2.7			E INL Z		Filas	e No. 3
North-South Phasing								
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + L$: No. 7 . i			e No. 2	<u> </u>		e No. 3
		.1			.1		4.	2.1
Control Delay and LOS	eliasijasija 	កម៉ែងនៅផ្ទ			\$ 10 m			$S_{i,\frac{1}{2},1},S_{i,\frac{1}{2},1}$
	EB .	: _	- WB	:		NB :		SB
Lane group	LT	R	LT	R	L	TR	L	TR
kane group adjusted volume from lane volume	13	82	15	39	66	757	49	1258
Green ratio, g/C	.095	.095	i	i	1	.653		1
Lane group saturation flow rate, s (veh/h)		1573			•			.635
s = RS * number of lanes in lane group v/c ratio, X yV/s			15/3	13/3	1573	3146	1573	3146
¨ α/C i	.087	.543	.102	.26	.606	.368	.606	.629
Lane group capacity, c (veh/h) c * V	150	150	150	150	109	2055		1998
Progression adjustment factor, PF (Exhibit 16-12)	J	1	1	1	1	1	1	1
Uniform delay, d ₁ (s/veh) (Equation 16-11)	24.8		24.8			4.7	27.9	6.7
nicremental delay, d ₂ (s/veh) (Equation 10-12) nitial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)		13.3		4.2	22.5		29.5	1.5
Polary d = d ₁ (PF) + d ₂ + d ₃ (s/vah)	25.0	0	0	0	0	0	0	0
OS by fane group	25.9 C		26.1			5.3		8.2
	37.4		28.4	<u> </u>	D :	8.8	E	10
Ociay by approach, d _A (s/vch) $\Sigma(0)(V)$	ď	- -	C			- K		
OS by approach	, , ,			1				A
	9.9		Intersection	OR LOS	Exhibit	16-21	A	

Analyst Agency or Company	RWH DRA					isdiction/E ersection	_	IMP. C		D HIV	VAY	12/19 111	/01
Analysis Period/Year Comment	EXISTING GEO	200 OMETE			Are	а Туре		CBD		EZ Oth	er 		
intersection Geo	ometry									ode Sagarage		, e	
	17 1	Street		٠.	Hand A								
**		W. T.						EB			W	В	
		LT		-		afiguration		LI			L	T	R
ĹT					No. of la	nes	<u> </u>	1	1		1	-	1
	_			<u>.</u>				NR			Si	₹	
}			eel	_	Lane cor	niguration	<u>L</u>	TR 2	1_	L	T	R	
olume and Sign	-tl	\$ 1 F, 1	····		11.		• • • • • • • • • • • • • • • • • • •			· .			
orania and Sign	ai input	<u> </u>	EB	<u>``-:\</u> `		₩B				T	1. 4	-	· ·
•		LT	TH	RT1	LT	TH T	RT ¹	LT	NB TH	RT ¹	LT	<u>28</u>	T .
nlume, V (veh/h)		ii	54	57	55		90 90	46	 ชิวีชิ	62	75	<u> 18</u> 591	F
roportion of LT or RT	(PLT or PRT)2	100	-	0	100	-	0	0	-	100	0	-	1
arking (Yes/No)		1	N	·	 	N	_	1	N	100		N	1
at-turn treatment (per xi opposed) (if known	mitted, protected,		1			1			2			2	
ak-hour factor, PHF rcle length	.92 Minimum, C _{min}	60_s		Maxim	ım, C _{max}	_150_	5	Lost	time/ph	ase	4	_s	
otes					ingenia Pytonia (1)		o gran	an in the second		in ingles	v .	V: 4	
	<u> </u>	estable d	garda il	130 G		(S. 1, 107)		Sq salt, ý	3500 A	geral (A. A.			. 3.3

Description	CHAPTER 16 - SIGNAL PLA General Information	kolenton, 12. Prinsippo ko						37 B 27	(15%-), (%-)
Phase No. 1									
Movement codes Section Code	East-West Phasing Plan								
Movement Codes Section Color	Selected plan (Exhibit A10-8) 1	Pha	se No. 1		Pha	sca No. 2	1	Dis	en No. 2
North-South Phasing Pian Selected plan (Enthith A10-8) 3b Phase No. 1 Phase No. 2 Phase No. 3 Phase No. 2 Phase No. 3 Phase	Movement codes			_	1 416	JE ITU E		Pik	DE NO. 3
North-South Phasing Plan	Critical phase volume, CV (vels/h)		106						
Selected plan (Exhibit A10-8) 3b			4					·····	
Phase No. 1 Phase No. 2 Phase No. 1 NSL SLT NST NST NST NST Critical phase volume, CV (velvh) 48 31 1 465 1 4 6 6 4 4 6 6 4 1 1 1 1 1 1 1 1 1 1 1	North-South Phasing Plan		Principles:)		
Moternation Status (Exhibit A10-9) Green time, g (a) $g = [C-1] \left(\frac{CV}{CS} \right) \cdot t_1$ There sime, g (b) $g = [C-1] \left(\frac{CV}{CS} \right) \cdot t_2$ Lane group Lane gr	Selected plan (Exhibit A10-8) 3b	Phas	se No. 1		Pha	se No. 2	<u> </u>		
Critical prace volume, CV (verbh)		1	NSL	İ			1		
Intersection Status Computation Critical sum, CS (veich)	Critical phase volume, CV (veh/h)					31			
Critical sum, CS (vertifit) $CS = \Sigma CV$	santa e e Maria de la composição de la c	. t • r • i twitu ti iu	. 4 :			0			4
Lost time/cycle, L (s) $L = \sum I_L$ Patherance sum flow role DS (web/not) Cycle length, C (s) $C = \frac{L}{1 - \left[\min{\frac{CS}{RS}}\right]}$ Crifical v/c ratio, $X_{cm} \times X_{cm} = \frac{CS}{ns}$ The Calculation East-West Phasing Phase No. 1 Phase No. 1 Phase No. 2 Phase No. 2 Phase No. 3 Shorth-South Phasing Phase No. 1 Phase No. 2 Phase No. 2 Phase No. 3 South-South Phasing Creen time, g (s) $g = \left[C - U\left(\frac{CV}{CS}\right) + L\right]$ T.6 Control Delay and LOS EB WB NB SB Lane group LT R LT R LT R LT R L TR And Control Delay and LOS The series of lanes in lane group Sines ratin, g/C Sines ratin, g/C Sines ratin, g/C Loss group capturation flow rate, s (veb/n) Loss group capturation flow rate, s (veb/n) Loss group capturation flow rate, s (veb/n) Loss group capture factor, PF (Extibit 16-12) Inform delay, d ₁ (s/veh) (Equation 16-12) Inform delay, d ₂ (s/veh) (Equation 16-12) Inform delay, d ₃ (s/veh) (Equation 16-12) Inform delay, d ₄ (s/veh) (Equation 16-12) SD by tapse group C C C C B Ansetting the series of the control of the con	ntersection Status Computation								
Enference cum flows rate PS (web/h) 1573 1573	Altical sum, CS (velvin) CS = ZCV				(55 0	<u> </u>	<u> </u>	<u> </u>
Cycle length, C (s) $C = \frac{1}{1 - \left[\min (CS, RS) \right]}$ 60 Critical v/c ratio, $X_{crit} \times X_{crit} = \frac{CS}{RS}$ 517 Intersection status (Enhibit A10-9) UNDER CAPACITY Green Time Calculation Exer. West Phasing Green time, g (s) $g = \left[(C - 1) \left(\frac{CV}{CS} \right) + t_1 \right]$ 11.8 Phase No. 1 Phase No. 2 Phase No. 3 Green time, g (s) $g = \left[(C - 1) \left(\frac{CV}{CS} \right) + t_1 \right]$ 7.6 2.3 38.4 Control Delay and Loss EB WB NB SB Lane group LT R LT R L TR L TR L TR L TR L TR L TR L TR L TR L TR L TR L TR See outstand, g/C The control Delay and Loss EB WB NB SB Lane group satisted volume from lane volume Loss outstanded, V (wh/h) The sen ratin, g/C The sen ratin, g/C The sen ratin, g/C The sen ratin, g/C The sen ratin g/C The sen ratin g/C The sen ratin g/C The sen ratin g/C The sen ratin group saturation flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) The ratio of lanes in lane group Loss outstand flow rate, s (wh/h) Loss outstand	ost time/cycle, $L(s) L = \sum t_{\parallel}$								
C max of C ∈ C max of C = C = C = C = C = C = C = C = C = C	Suda Landa M.P.S.				1	573			
Intersection status (Exhibit A10-9) UNDER CAPACITY	$min \le C \le C_{max}$ 1 $-\left[\frac{min (CS, RS)}{RS}\right]$				ı	60			
Intersection status (Exhibit A10-9)	nedi _ L				.:	517			
Phase No. 1 Phase No. 2 Phase No. 3				LINI	OED (TABAC	Trans &		
Phase No. 1				UNI	JERU	APAC	11 Y		
Second time, g (s) g = (C - L) (CV / CS) + t_L T1.8		Fi	N- 4		<u> </u>		1.11.11.11		
Green time, g (s) $g = [C - L] \left(\frac{CV}{CS}\right) + t_L$ 7.6 2.3 38.4 Control Delay and LOS EB WB NB SB Lane group LT R LT R L TR L TR Lane group adjusted volume from lane volume worksheet, V (wel/h). Green ratin, g/C .13 .13 .13 .13 .13 .106 .573 .097 .61 .578 .598 .50 .933 .62 .642 .599 .593 .62 .593 .62 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .599 .593 .62 .642 .642 .642 .642 .642 .642 .642	reen time; $g(s) = (C - L) \left(\frac{CV}{CS}\right) + i_L$				Phas	e No. 2		Phas	e No. 3
The first single C − C C C C C C C C C	orth-South Phasing	Phase	No. 7		Phas	e No. 2		Phas	e No. 3
EB		7	7.6		2			3	
Lane group Lane group adjusted volume from lane volume worksheet, V (veh/h) Green ratin, g/C Lane group saturation flow rate, s (veh/h) ERS* number of lanes in lane group 1573 1573 1573 1573 1573 3146 1573 3146 Increasin, X × V/s grC Lane group capacity, c (veh/h) c = V V 205 205 205 205 94 1802 153 1920 Progression adjustment factor, PF (Exhibit 16-12) Inform delay, d₁ (s/veh) (Equation 16-11) Lane group capacity, c (veh/h) c = V V 205 23.6 23.6 23.7 24.2 27.4 7.8 25.8 5.7 (Line) (L	ontroi Delay and LOS						2.33		Ar Sign High
Same group adjusted volume from lane volume S9 G2 70 98 50 933 82 642		<u>EB</u>		WB	,		NB		SB
See Composition Composi	ne group	LT	R	LT	R	Li	TR	I.	ITR :
Section Sec	ne group adjusted volume from lane volume		:	-					
ane group saturation flow rate, s (veh/h) = RS * number of lanes in lane group	orksheet, V (veh/h)	•	÷	•	•	50	933 📒	62	642
ane group saturation flow rate, s (veh/h) = RS * number of lanes in lane group		.13	.13	.13	.13	.06	.573	.097	.61
ane group capacity, c (veh/h) $_{c} = \frac{V}{X}$ 205 205 205 205 94 1802 153 1920 regression adjustment factor, PF (Exhibit 16-12) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RS * number of lanes in lane group		·	1573	1573	,			
ane group capacity, c (veh/h) $c = \frac{V}{X}$ 205 205 205 205 94 1802 153 1920 regression adjustment factor, PF (Exhibit 16-12) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	" a/C	.287	.302	.341	.477	.534	.518	.534	.335
Progression adjustment factor, PF (Exhibit 16-12)	ne group capacity, c (veh/h)	205	205	205	205	 -			
Inform delay, d_1 (s/veh) (Equation 16-11)	ogression adjustment factor, PF (Exhibit 16-12)								:
Companied delay, dg (siveti) (Equation 16-12) 3.5 3.8 4.5 7.8 20.1 1.1 12.7 .5	iform delay, d ₁ (s/veh) (Equation 16-11)					27 4			
itial queue delay, d_3 (s/veh) (Appendix F, Ch. 16) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	remental delay, d ₂ (siveli) (Equation 10-12)								
olay, $d = d_1(PF) + d_2 + d_3$ (check) 27.1 27.4 28.2 32 47.5 8.9 38.5 6.2 DS by lane group C C C C D A D A clay by approach, d_A (s/vch) $\frac{\Sigma(d)(V)}{\Sigma V}$ 27.2 30.4 10.8 9.8 DS by approach C C B A	ial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)						-		
25 by lane group : C C C D A D A Cay by approach, d_A (s/vch) $\frac{\Sigma(d)(V)}{\Sigma V}$ 27.2 30.4 10.8 9.8 27.5 by approach C C B A	ay, it = it (PF) + it + it (chart)								
clay by approach, d_A (s/vch) $\frac{\Sigma(d)(V)}{\Sigma V}$ 27.2 30.4 10.8 9.8 OS by approach C C B A									
OS by approach C C B A	ay by approach, d_A (s/veh) $\frac{\Sigma(d)(V)}{V}$							- ·	
tercerting dates of fathers A S(d)(Va)					- i			-i	
Est Land to a trainer to a	rsection delay, d_{1} (s/veit) $d_{1} = \frac{\sum (d_{1})(V_{1})}{\sum (d_{2})}$				n 1094	Exhibit 16		12	
otes de la companya de la companya de la companya de la companya de la companya de la companya de la companya d	·	an against an	<u> </u>	30. // 25/25/25	er and the	-AIDMI II			<u> </u>

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CHAPTER 16 - SIGNAL General Information	o de como						- LUS	(5.07%)	SONEE!	Jan Bara	7264 s
Description EXISTING GEOMETR	Y	<u> </u>	<u> </u>				Sain I				ler, t
East-West Phasing Plan							ang sa	et eller	54.Y0 L45.46	t giras s	***
Selected plan (Exhibit A10-8)	$\overline{}$	Dh	se No. 1	<u> </u>		D.		<u> Angles</u>	3 artifications		
Movement codes	-		EWT	<u> </u>		Pn	ase No. 1	2		Phase No.	3
Critical phase volume, CV (vet/h)	1		98		-i			·	 		
Lost time/phase, t _L (s)			4		1				 		
North-South Phasing Plan	147 15				13 4 1 4 1 4 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			er		Silvinger F	,15,
Selected plan (Exhibit A10-8)3b			se No. 1		1		se No. 2	,			(1 - 1)
Movement codes	i		NSL		İ		SE NO. 2 SLT	•]]	hase No. 3 NST	,
Critical phase volume, CV (veh/h)			66			`	33		-	568	
Lost time/phase, 4 (3)			4				0			4	
Intersection Status Computation											7 ()
Critical sum, CS (velvir) CS = ZCV							705	<u>altur juris</u>	and the state of the	riggio di gia ta c	1.7
Lost time/cycle, L (s) $L = \sum t_{\ell}$							12				
Paterence sum flow rate PS (ush/h)1						1	573				
Cycle length, C (s) $C = \frac{L}{1 - \left[\frac{\min (CS, RS)}{R3}\right]}$							60				
Critical v/c ratio, $X_{crn} = \frac{CS}{RS(1-\frac{L}{C})}$		-	<u>-</u> -				608				
Intersection status (Exhibit A10-9)	-				IDI	DED 4	7.5.	CYCT .		·	
Green Time Calculation	4				UN	DER	CAPA	CITY			
East-West Phasing	1	100 (E) 1		: .	14.6%		1				
Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + I_L \right]$			e Na. 1 O. I		 	Phas	e No. 2		Pi	iase No. 3	
North-South Phasing		Phase	e No. 1		-	Phas	e No. 2			N- 7	
Green time, g (s) $g = \left[(C - I) \left(\frac{CV}{CS} \right) + I_L \right]$			3.2				2		rı	39.7	
ontroi Delay and LOS	1,200		entre L					-14 7. 9			
		EB			WB		Γ	NB		SB	
ane group	L	Т	R	L	Т	R	L	TD		:	:
are group adjusted volume from lane volume	 	-	!		<u> </u>	-	L	TR	I	TR	:
orksheet, V (veh/h)	18	70	85	77	70	90	68	760	10	2 1287	-
reen ratio, g/C	0	.102	.102	0	.102	102	069	.594	f	4:.628	<u> </u>
ane group saturation flow rate, s (veh/h) = RS * number of lanes in lane group	Ţ		-	1				3146		3 3146	
cratin, X y V/s		.433	.528		.433	561	627	.406		21 651	<u> </u>
ne group capacity, c (velv/h) c = V	1	 	} -		•					7 .651	<u>:</u>
ogression adjustment factor, PF (Exhibit 16-12)	 	; 	161		-	161	109	1870	16	1977	
iform delay, d ₁ (s/veh) (Equation 16-11)	1	25.2	25.6	1	050	1	1	1	1	ı	
remember delay, or (Sever) (Constitut 10-12)	 	25.3			25.3		27.2		25.		
tial queue delay, d ₃ (s/veti) (Appendix F, Ch. 16)	0	0	11.9	0			24.3			1.7	
lay d = d.(PF) + d. + d. (c/mh)	U	33.6		<u> </u>	0 :	0	0	0 :	0	0	
S by lane group			D D		33.6 C				42.1		
lay by approach, d_A (s/vch) $\Sigma(0)(Y)$	1	35.7			36.7	D	D :		<u>D</u>	<u> </u>	
S by approach	 	D	 		D			10.8		11.2	·
ersection delay, $d_r(s/\text{weh}) = d_r = \frac{\sum (d_s)(V_s)}{r}$		12.6				- 100		B		<u>B</u>	
tes		17.0			ntersectio	on LUS (txhibit '	16-2)		<u>B</u>	
105 - 1710(F1H)(f _e), where f _e is area adjustment for	火烧点	M. 45							lense (1965)		1000

General Informa	454 (2015) SANSAN (2010) - 15					ite Inf	ormat	lon					
Analyst Agency or Company Analysis Period/Year Comment	RWH DRA AM PEAK EXISTING GE		006 RY		In	rrisdictio dersectio rea Type	n .	IMP. (HEBE C CBD			HWA!	12/19 Y 111	9/01
Intersection Geo			in de dis								V. 4	11 A.	in the
13		Steet		· ·	Lane co	onfigurati	ioni	EE L.		,		WB	D
			***	i	No. of			1				1	R 1
LT						-		NE					·
—			<u>_</u>	-	Lane co	rifiguration	on L			\dashv		ir T	
[.	LTT	St	reei	_	No. of L	<u> </u>	1	1 2	-			'R	
Volume and Signs	al Input						<u></u>		7. ¥ 3				
		1	EB			₩B			NB	<u> Sertin</u>	<u> </u>		
		LT	TH	RT1	LT	TH	RT1	LT	TH	RT ¹	LT	SB TH	ا ا
olume, V (veh/h)		iż	129	62	iiù	iiū	134	48	893	129	127	615	R
roportion of LT or RT (P _{LT} or P _{RT}) ²	100	-	0	100	-	0	0	•	100	0	•	10
arking (Yes/No)			N			N		1	N		<u> </u>	N	1
elt-turn treatment (pern vi opposeci) (ii iznown)	iitted, protected,		I	-		1			2			2	
cak-hour factor, PHF ycle length	92 Minimum, C _{min}	60_s	1	Maximu	m, C _{max}	150	 S	Lost	time/ph	ase	4		
otes				- 14 (2000)			in the second	 				 1, 177	
RT volumes, as shown	r. exclude PTOD	ল : ১৯৪%		24 (4. h.	(J. 46 W)							197	
P _{LT} = 1.000 for exclusivolumes in the lane gr	ive left-turn lanes, and	dP _{RT} ≖1	.000 for	exclusiv	re right-tu	ırıı lanes	. Othen	wise, they	zre eni	ızî to the) Droport	ione of I	hirmi

General Information								
Description EXISTING GEOMETRY					ve v it reja			12. ******
East-West Phasing Plan				· ,	600 C 25		ar ez viçay	
Selected plan (Exhibit A10-8)	Pha	se No. 1]	Dh	ase No. 2	· ·	DL.	
Movement codes		EWT			200 1404 1		FIL	se No. 3
Critical phase volume, CV (veh/h)		203		·		- i		
Lost time/phase, t _L (s)		4						·
North-South Phasing Plan								
Selected plan (Exhibit A10-8) 35	Phas	se No. 1			se No. 2			se No. 3
Movement codes	1	NSL			SLT			SE NO. 3 NST
Critical phase volume, CV (veti/h)		51			83			522
Lost time/phase, t _e (3)	الرائد المائد	in the State Control of the			Ç			4
Intersection Status Computation								
Critical sum, CS (velum)					859		·	errestrate hatel
Lost time/cycle, I. (s) L = $\sum t_{\parallel}$					12		· · · · · · · · · · · · · · · · · · ·	
Perforance sum flow rate PS (veh/h) ¹				1	573			··
Cycle length, C (S) $C = \frac{t}{1 - \left[\frac{\min (CS, RS)}{RS}\right]}$				·	60			
Critical v/c ratio, $X_{cm} = \frac{CS}{ns(1-\frac{L}{C})}$.,	683		· <u></u>	
ntersection status (Exhibit A10-9)			Inn	DEP 4	74.00	Olara c		
Freen Time Calculation	Signatur di		UN	DEK (CAPA	CITY		
ast-West Phasing								
		No. 1		Phas	e No. 2		Phas	e No. 3
incentime, g(s) $q = (C-1)\left(\frac{CV}{CS}\right) + I_{L}$	43	5.4-		•				
orth-South Phasing	Phase	No. 1		Phas	e No. 2		Phas	e No. 3
reen time, g (s) $g = (C - L) \left(\frac{CV}{CS} \right) + t_L$	6	5.8			.6	i i		3.2
ontroi Delay and LOS		Hayar Ya	og på trokkin		12014412/	27 s. y. 1945		
	EB	32.55	WB	पुन्य सम्ब	ትያቸኳ <u>።</u> T	NB	<u> </u>	
			:	: _	 	i i		SB :
ne group	LT	K	LT	R	Ł	TR.	Ł	TR
ne group adjusted volume from lane volume orksheet, V (vet/h)	140	67	120	146	52	971	120	668
een ratin, g/C	.189	•	-1	1	4	4		1 1
ne group saturation flow rate, s (veh/n)					,	.486	.124	.564
RS " number of lanes in lane group	1573	1573	1573	1573	1573	3146	1573	3146
ratio X × V/s	.471	.226	.403	.489	705	.635	705	200
ne group capacity, c (veh/h) c = V				~		-		.377
A	298		298	298	74	1530	196	1774
ogression adjustment factor, PF (Exhibit 16-12) iform delay, d ₁ (s/veh) (Equation 16-11)	1 1	1	1	l	1	1	ı	1
स्थानवाको वंदावर्ग, वर् (अवदा) (Equation 10-11)	:21.6		:21.3	_		11.5		7.3
ial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)	<i>5</i> .3		: 4 :	5.6	43.7		19.2	
ay, d = d ₂ (PF) + d ₂ + d ₃ (c/mh)	0	0	: 0	0	0	0	0	0
S by lane group	26.9 C		25.4			13.5		7.9
ay by approach, d _A (s/veh) Σ(d)(V)	25.4	<u> </u>	1 C	C	E	B:	D :	A :
S by approach			26.5			16.5		14.1
resection delay. d ₁ (s/veh) $d_1 = \frac{\sum (d_1)(V_A)}{\sum (d_2)(V_A)}$	<u>C</u>		C			<u>B</u>		В
2.9	16.9		Intersection	on LOS (Exhibit 1	16-2)	B	
tes to the second of the secon				10.00		in the second		A TANK ENDER

General Informa	tion				s	ite info	rmal	ion	andi. Atbij	(1) 数			
Analyst Agency or Company Analysis Period/Year Comment	RWH DRA PM PEAK EXISTING GE		06 PV		Int	risdiction ersection ea Type		IMP. (HEBE)		12 € 0	IWAY	12/19/ / 111	/01
Intersection Geo		OWET.		History	i Presi	# 6 4 B	A Calaba	Kiji (ilika)	Patrick of	// 194.A		unickien, de	1
	T T L 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	R LT		: 	Name co	nfiguratio	ani	EE L		,	- 1	WB	
i i i i i i i i i i i i i i i i i i i				a.	No. of la			l 1	1			T 1	R 1
	LTT	St	reet	_	Lane coo		on 1		-	I		PR 2	
olume and Signa	al Input									Sec. 12.		V 1543 V 3443	
•			ĒB			WB	<u></u>		NB			SB	
lume, V (veh/h)		LT 17	TH i Zū	RT ¹ 8 i	LT 135	TH 118	RT ¹ 133		TH	RT1	LT	TH	R
portion of LT or RT	(P _{LT} or P _{RT}) ²	100	-	0	100	-	133	0	728	135	147	ì233	1(
king (Yes/No)			N			N		-	N	100	U	N	11
t-tum treatment (perr opposed) (if known)	nitted, protected,		1	-		1			2			2	
ak-hour factor, PHF cle length	.92 Minimum, C _{min}	60 s		Maximu	m, C _{max}	150	_ S	Lost	time/ph	ase	4	s	
tes			<u> </u>								ŢŽV		
RT volumes, as show													

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1 of 4

General Information								
Description EXISTING GEOMETRY			·· ·			·		
East-West Phasing Plan		Sees is no Primary See		25.24				
Selected plan (Exhibit A10-8)	Phas	e Na. 1			se No. 2			se No. 3
Movement codes		WT						
Critical phase volume, CV (veh/h) Lost time/phase, t _L (s)		261						
North-South Phasing Plan	الراد والمعارفة الوالدي	4		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		7.75		
	<u> 164, 164</u>		Carly mile					
Selected plan (Exhibit A10-8) 35 Movement codes		e No. 1 VSL	ļ		se No. 2			se No. 3
Critical phase volume, CV (veh/h)		69			SLT 85			IST 540
Lost time/phase, & (s)		4			0			4
Intersection Status Computation	建筑外 型			. ya ya s				
Critical sum, CS (vervir) CS = \(\Sigma CV\)	<u>sant ar i ng mga</u>	- 12 July 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The state of the s	<u>e regad</u> Ç	/5ŭ	Sangaria (S	resport, egyptig	<u>ंकः अञ्चलकारी</u>
Lost time/cycle, L (s) $L = \sum t_L$					12			
Perference sum flow rate DS (unb/h)1				· <u>1</u>	573			
$ \begin{array}{cccc} \text{Cycle length, C (s)} & & \text{C =} & & \text{L} \\ \text{C}_{min} \leq \text{C} \leq \text{C}_{max} & & & 1 - \left[\frac{min\ (CS,RS)}{R3}\right] \end{array} $					60			
Critical v/c ratio, $X_{cm} = \frac{CS}{RS(1-\frac{L}{C})}$				•	76			
Intersection status (Exhibit A10-9)			UNI	DER C	APA	CITY		
Green Time Calculation	in the second second					<i>3</i>		
East-West Phasing		No. 1		Phas	e No. 2	<u> </u>		e No. 3
Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + L_L \right]$	17	7.1					7 143	e ML 3
North-South Phasing	Phase	No. 1		Phas	e No. 2		Phas	e No. 3
Green time, g (s) $g = \left(C - L\right) \left(\frac{CV}{CS}\right) + L$, -	.5			.3	.	3	1.1
Control Delay and LOS				7 ()	14		1.3	
	EB		WB		Γ	NB	<u> </u>	SB
Lane group	LT	R	LT	R	L	TR	Γ.	TR
Lane group adjusted volume from lane volume	- 						 	.
worksheet, V (veh/h)	130	• 1	129	i	72	792	160	1340
Green ratio, g/C	219	.219	.219	.219	.058	.452	.129	.523
Lane group saturation flow rate, s (veh/h) s = RS * number of lanes in lane group	1573	1573	1573	1573	1573	3146	1573	3146
de ratio, X <u>y Vis</u>	270	.256	.375	.42	704	.557		!!-
are group capacity, c (veh/h) c V	<u> </u>							.814
Progression adjustment factor, PF (Exhibit 16-12)		344	344			1422	204	1646
Uniform delay, d ₁ (s/veh) (Equation 16-11)	20	10.4	1 :	20.2	1	1 :	1	1
ncionantal delay, d ₂ (s/weh) (Equation 10-12)	3.2	19.4	3.1	20.2 3.7	27.9 47.9			11.9
nitial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)	0	0	0	0	0	0	0	4.5 0
lolay, d = d ₊ (PF) + d ₂ + d ₅ (clubh)	23.1		23.1					16.4
OS by lane group	C		C			B :	D	
clay by approach, d_A (s/vch) $\frac{\sum (d)(V)}{\sum V}$	22.4		23.5			18.8		20.1
OS by approact:	С		С			В		C
Resection delay. $d_1 (s/\text{veh}) = \frac{\sum (d_k)(V_k)}{\sum V_k}$	19.9		Intersection	on LOS	(Exhibit		B	·
oles	rigina, Samuel		1999 P. G. G.	20.00	S 53.55	A 14 3 14		great days of

General Informa	tion			新花翁	S	te info	ormat	ion					
Analyst	RWH				Ju	isdiction	ı/Date	IMP.	CO.			12/19)/01
Agency or Company	DRA					ersection		HEBE		AD F	IIWAY		
Analysis Period/Year		_ <u>20</u>			An	еа Туре		☐ CBD	-	E2 ′(Xher		
Comment	EXISTING GEO	OMET	RY	·				·					
Intersection Geo	metry												\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
	T.E.	Seaso		.					•				
		R	****	<u>.</u>] .		-	E				NB .	
					Lane co		on	L'			I		R
					No. of L	nes	1	1	1			1	1
LŢ				.,						-,	,		
		ــــــــــــــــــــــــــــــــــــــ		-	Lane co	dia	,,	NI				R	
Ţ	LTT	- Ch	reel		No. of la		on I		-			TR 2	
olume and Sign				మరార్జు	*****	n 150 (100 h		Water and	7/12/20				
orania arta oldir	ar m put	11 / 1669 	EB			WB				.66g) 1 mg	7 tt, 1	- 14 - 14
:		LT	TH	RT1	LT	TH	RT1	LT	NB TH	RT1	LT	ŠĒ L	1 .
olume, V (veh/h)		i2	iŝó	64	165	156	i 78		93Ū	196	iãū	TH 641	R
roportion of LT or RT	(P _{LT} or P _{RT}) ²	100	- '	0	100		0	0	-	100	0	-	10
arking (Yes/No)		i	N	<u>'</u>		N			N	100	-	N	110
at-tura treatment (peri ni opposeo) (ii known)	nitted, protected,		1			1			2			2	
ak-hour factor, PHF	.92	L			· · · ·			1			<u> </u>		
rde length		60_s		Maximu	m, C _{mex}	150	_ S	Lost	time/ph	ase	4	s	
otes				de de la			Zero.			e Weigh	es úsis	lar e	r e. Histori
RT volumes, as show	n, exclude RTOR.	<u> 5, 500 - 90</u>	ty men.		<u> 12. (14.4)</u> 1	<u> 3 4 54 F</u>		rwise, the	<u> 1, 5, 19.</u>	unig gir	nari, de		

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Description EXISTING GEOMETRY				
East-West Phasing Plan				
Selected plan (Exhibit A10-8) 1 Movement codes	Phase No.		Phase No. 2	Phase No. 3
Critical phase volume, CV (veh/h)	EWT 406			
Lost time/phase, \(\(\text{(s)} \)	400			
North-South Phasing Plan		THE STATE OF STREET	Erich William P. J.	Marke a consistencia
Selected plan (Exhibit A10-8) 3b	Phase No. 1			
Movement codes	NSL	'	Phase No. 2 SLT	Phase No. 3 NST
Critical phase volume, CV (veh/h) Lost time/phase, t ₁ (s)	53		137	580
最った かぶん きょうじ コルディ とうして カッチー・ステー・ファー・コンド	4 Sekalumanan una	35 - 15	0 Shiriyabatiya 20	4
Intersection Status Computation Citizal Sunt, C3 (veish) C3 = 2CV				
Lost time/cycle, L (s) $L = \sum_{i} t_i$			1175	
Deference sum flow rete DS (ueh/h)1			12	
Cycle length, C (s) CL			1573	
$C_{min} \le C \le C_{max}$ $1 - \left[\frac{min (CS, RS)}{RS}\right]$			60	
Critical v/c ratio, X _{cm} X _{cm} = CS			.934	
Intersection status (Exhibit A10-9)				
Green Time Calculation	An along the first of the second state of		CAPACITY	
East-West Phasing	Phase No. 1			
Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + t_L \right]$		P	nase No. 2	Phase No. 3
North-South Phasing	20.6			
	Phase No. 1	<u> </u>	iase No. 2	Phase No. 3
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$	6.1		5.6	27.7
Control Delay and LOS				
	EB	WB	NB	SB
Lane group	LT R	LT R	LTR	L TR
Lane group adjusted volume from lane volume	202 70	100 10		
worksheet, V (veh/h) Green ratio, q/C		170 19		196 697
Lane group saturation flow rate is (web/b)	.276 .276		6 .036 .395	.129 : .488
S = PS * number of lanes in lane group	1573 1573	1573 157	3 1573 3146	1573 3146
V/c ratio, X y V/s g/C	.465 .16	.393 .44	5 .964 .814	.964 .454
Lane group capacity, c (veh/h) c = V	434 434	434 43		
Progression adjustment factor, PF (Exhibit 16-12)	1 1	1 1 1	1 1	203 1536
Uniform delay, d ₁ (s/veh) (Equation 16-11)	18 16.4	17.6: 17.		26 10.1
Incremental delay, d ₂ (s/veh) (Equation 10-12) Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)	3.6 .8	2.7 : 3.3		54.6 1
niuai queue ueray, u ₃ (s/ven) (Appendix F, Ch. 16) Nolay, d = d ₂ (PF) + d ₂ + d ₃ (s/veh)	0 0	0 0		0 0
LOS by lane group	21.6 17.2 C B		2 138.9 22.1	80.6 11.1
Delay by approach, d _A (s/veh) \(\sum_{\text{cit}}(d)(V)\)	20.5	20.8	F : C : 28.1	F : B :
LOS by approach	C	C 20.6		26.3
intersection delay, d_1 (s/veh) $d_1 = \frac{\sum (d_1)(V_1)}{\sum V_1}$	26.3		C S (Exhibit 16-2)	C
Votes		enerzenta (A		<u> </u>

Analyst Agency or Company Analysis Period/Year Comment	PM PEAK ADD EB & WE		008 ANE		In	urisdiction/l ntersection rea Type		IMP. HEBE □ CBD	R RO		IIWA` Other	12/19 Y 111	9/0
Intersection Geo	metry											7 6 (2)	
	1.7 4	Street		:				E	В			WB	
		L -	- 1 - 1 - 1	- ·	No. of I	onliguration anes	L 1				L 1	T	R 1
- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1-				<i>:</i>					·	<u> </u>	<u> </u>	- 1	1_
- i - · · · · · · · · · · · · · · · · ·		<u> </u>		<u>:</u>	1		<u> </u>	Ni				SR.	
Ţ.	LTT	St	reel	_	No. of la	nfiguration	L	TI				7R 2	
/olume and Signs	al Input						VA. 1.					o francis	
			ĒĒ		99984 T	₩B		<u> </u>	NB		lainge a I		'1
,		LT	HT	RT ¹	LT	тн	RT ¹	LT	TH	RT1	LT	SB TH	1
Olume, V (veh/h)		i8	i76	84	i 99	 	84	69	758	202		1283	
roportion of LT or RT (arking (Yes/No)	P _{LT} or P _{RT}) ²	0	•	0	0	-	0	0	- .	100	0	-	1
arking (res/No) At-turn treatment (pern	itted made t		N			N			N	-		N	1
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numernaria delay, d ₂ (s/veh) (Equation 10-12) nitial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)		11.2					43.8	1.9	18.0		<u> </u>
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Selected plan (Exhibit A10-8) [Movement codes			se No. 1			Ph	se No. 2	2	Ph	ase No. 3	
Critical phase volume, CV (veh/h)]	EWT								
Lost time/phase, t _L (s)			243 4	·····							
North-South Phasing Plan	Hare(y		A Property			, , et ,	ari saja		1.15		
Selected plan (Exhibit A10-8) 3b	. 301 , 531.1		se No. 1				se No. 2	<u>i teletiy</u>			
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Cycle length, C (s) C - L	1						3/3				
$C_{\min} \le C \le C_{\max}$ $1 - \left[\frac{\min (CS, RS)}{RS}\right]$							60				
Critical v/c ratio, X _{crit} X _{con} = CS						٠.`	578				
Intersection status (Exhibit A10-9)											
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Green time, g (s) $g = \overline{(C-L)(\frac{CV}{CS})} + t_L$	+				 	Phas	e No. 2		Phas	e No. 3	
North-South Phasing			7.7								
	Phase No. 1				<u> </u>	Phas	e No. 2		Phase No. 3		
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$			7.1				4			1.2	
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	-	EB	7		WB			NB		SB	
Lane group	L	Т	R	L	Т	R	L	Т	L	TR	
Lane group adjusted volume from lane volume	14	264	73	207	105						
worksheet, V (veh/h) Green ratio, g/C		ı			195	ž.	•	1052	253	725	
Lane group saturation flow rate, s (veh/h)	•	.228						.454	.119	.521	
S = RS * number of lanes in lane group	1573	1573	1573	1573	1573	1573	1573	3146	3146	3146	
w/c ratio, X × V/s g/C		.737	.203		.543	.607	.7	.737	670	.442	_
Lane group capacity, c (velv/h) c = V	1	i	358		, 	358		1427		i - 	_
Progression adjustment factor, PF (Exhibit 16-12)	1	1	1	1	1	1	-01 l	1 1		1639	
Uniform delay, d ₁ (s/veh) (Equation 16-11)		21.5			20.4			13.5	253	8.9	
Incremental delay, d ₂ (s/veh) (Equation 10-12)		12.7	1.3		5.8			3.4	9.5		_
Initial queue delay, d_3 (s/veh) (Appendix F, Ch. 16) Relay, $d = d_2(PF) + d_2 + d_3$ (s/veh)	0	0	0	0	0	0	0	0 :	0	0 ;	
LOS by lane group		34.2		:	26.2		68.2			ò'8 :	_
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North-South Phasing Plan			多.	af Taka asak	e na stale e mant	1	1 1.4	5.5. F. 2.5. *.	
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Movement codes	Phase No. 1 NSL			·	Phase No. 2 SLT	Phase No. 3			
Critical phase volume, CV (veh/h)		7 5			143	NST 542			
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Intersection Status Computation									
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Cycle length, C (s) C = L	1				13/3				
Cycle length, C (s) $C = \frac{L}{1 - \left[\frac{\min (CS, RS)}{RS}\right]}$			•		60				
Critical v/c ratio, X _{cm} X _{cm} = CS					.945	, , , , , , , , , , , , , , , , , , , ,			
Intersection status (Exhibit A10-9)) III A D	C. D. C.				
Green Time Calculation			. 6. 2. 14		CAPACITY			* 1 2 4	
East-West Phasing		Phase No.				1	· ·		
Green time, g (s) $g = (C - L) \left(\frac{CV}{CS}\right) + t_L$		21.3		- P	hase No. 2		Phase	No. 3	
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Green time, g (s) $g = \left[(C - L) \left(\frac{CV}{CS} \right) + t_L \right]$	-	Phase No.	_1	! Р	hase No. 2	1		No. 3	
		7	*******		5.8		25	5.9	
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Lane group	L	TR	L	TR	LT	R	L	TR	
Lane group adjusted volume from lane volume worksheet, V (veh/h)	21	427	511	434	77 859	501	436	1.452	
Green ratio, g/C	0	.289	0	.289			i	ī	
Lane group saturation flow rate, s (veh/h)	i	3146		3146	.05 .365	, ,	•		
s = RS * number of lanes in lane group w/c ratio, X v _ V/s	1,3/3	3170	13/3	3140.	1573 3146		3146	3146.	
" nlC		.471		.478	.976 .748	.873	.945	1.001	
Lane group capacity, c (veh/h) c = V		908		908	79 1148	574	461	1451	
Progression adjustment factor, PF (Exhibit 16-12)	1	1	1	1 :	1 1	1	1	1	
Uniform delay, d ₁ (s/veh) (Equation 16-11) Incremental delay, d ₂ (s/veh) (Equation 16-12)		17.6		17.6	28.5; 16.6	17.8	25.4	16.2	
Initial queue delay, d ₃ (s/veh) (Appendix F, Ch. 16)		1.7	+	1.8	94.7 4.5	16.7	30.2	23.8	
Dolay $d = d_1(PF) + d_2 + d_3 (c) (c)$	0	19.3	0	0 ;	0:0:	0	0 :	0	
LOS by lane group		В :		19,4 ! B :	123.1 21.1 F C			10 : D	
Delay by approach, d _A (s/veh) Σ(d)(V)		19.3		19.4	31.3			43.6	
LOS by approach		В		В	C			D	
Intersection delay, d_{y} (s/veh) $d_{x} = \frac{\sum (d_{y})(V_{y})}{\sum V_{A}}$		31.4	In	tersection LC	IS (Exhibit 16-2)		C	<u> </u>	
		3.3% 5.3%	. Trivustosas tri	2667 TeSt No.	152 - 61, 63 2 ,23 (6)			t resistant	

APPENDIX C LEVEL OF SERVICE CRITERIA



LEVEL OF SERVICE CRITERIA LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level of service criteria is stated in terms of the average stopped delay per vehicle for a 15 minute analysis period. The criteria are given in the table below.

Level of Service	Stopped Delay per Vehicle (sec)
A	≤ 5.0
В	5.1 to 15.0
С	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	> 60.0

Delay is dependent on a number of variables, including the quality of progression, cycle length, the green ratio, and the volume to capacity ratio for the lane group or approach in question.

Level of Service A, describes operations with very low delay. Average delays are less than 5.0 seconds per vehicle and most vehicles do not stop at all. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Short cycle lengths may also contribute to low delay.

Level of Service B, describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This condition occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C, describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D, describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E, describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. The high delay values generally indicate poor progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences.

Level of Service F, describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation and high volume to capacity ratios. There are many individual cycle failures in this level. Poor progression and long cycle lengths may also be major contributing causes of the delays.

Source:

Highway Capacity Manual, Special Report No. 209, published by the Transportation Research Board, National Research Council, Washington, D.C., 1985, pages 9-4 and 9-5.

LEVEL OF SERVICE CRITERIA LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

It is not possible to directly compare an unsignalized intersection level of service with a signalized intersection level of service. Level of service criteria for unsignalized intersections is related to general delay ranges. The criteria are given in the table on the following below.

Level of Capacity Service	Average Total Delay(Sec/Veh)	Qualitative Description		
A	≤5	Little or no delays		
В	>5 and ≤10	Short traffic delays		
C	>10 and ≤20	Average traffic delays		
D	>20 and ≤30	Long traffic delays		
E	>30 and ≤45	Very long traffic delays		
F	>45	*		

* When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvements to the intersection.

Source:

Highway Capacity Manual, Special Report No. 209, published by the Transportation Research Board, National Research Council, Washington, D.C., 1994, Table 10-3, page 10-12.

APPENDIX D CORRESPONDENCE



Kevin A. Dahl, P.E., R.L.S. Christopher D. Robins, P.E. Juan N. Lomeli´, R.L.S. Douglas J. Nicholis, P.E.

DAHL, ROBINS & ASSOCIATES, INC.

CIVIL ENGINEERING ■ SURVEYING ■ TRAFFIC

1560 South 5th Avenue Yuma, Arizona 85364 Phone: (928) 819-0825 Fax: (928) 819-0826 E-mail: dra@dahlrobins.com

April 15, 2002

Development Design Engineering, LLC 1122 State Street, Suite D El Centro, CA 92243

Attention: Mr. Tom Dubose, Manager

Reference: Imperial Center Traffic Impact Study

Dear Mr. Dubose:

We have reviewed the comments to the Imperial Center Traffic Impact Study provided by Bill Figge of the California Department of Transportation. The following is our response to his comments:

• A 2020 Traffic Impact Study should be completed and include any future development planned in the area so that traffic impacts to the state system and surrounding facilities can be determined. The report currently shows projections through build out at 2010, and does not include any planned development in the area that may also impact SR-111 and State Route (SR-86). The analysis should also include future AM and PM peak period traffic and its impact to highway facilities.

Traffic volumes have been inflated to estimate 2020 conditions. Level Of Service analyses are attached for this time period (Tables 8 & 9). In talking with Imperial County officials, there is currently no planned development near this location. As a result, no attempt was made to assume what future uses might be in place near the Imperial Center in 2020. Any future traffic studies in this area will need to take into account the Imperial Center traffic and make the appropriate adjustments.

• The Traffic Study indicates that there are several phases (Phase I - Phase V) to this project. Each phase of the project needs to be outlined in detail, with impacts to SR-111 and SR-86 for each phase.

The estimated phasing and timing of the development was described in Section II.B.4 of the report. Beginning in 2002, it is anticipated that a new phase will be completed every two years. The first phase will consist of the truck stop and gas station/convenience mart, along with ancillary uses. The second phase, in 2004, will include a hotel. The third phase, estimated in 2006, would comprise half of the outlots on the property. Phase IV, in 2008, would be the other half of the outlots. Potential uses on the outlots would include banks, a video store, restaurants and strip center type uses. The final phase in 2010, would include the outlet mall and theater. The traffic generated by each phase is noted in Table 2. Table 5 shows the impacts on the surrounding roads. Blank columns indicate no significant changes between the previous phase.

- Heber Road and SR-111 As noted on page 30 and 31 of the report, any additional widening of Heber Road, southbound left turn lanes and northbound right turn lane will be required by build out. Mitigation and fair share must be included for these items.
- McCabe and SR-111 As noted on page 30 of the report, any additional improvements such as restriping or reconfiguration of the intersection to accommodate a left turn lane and combine through/right turn lane will require mitigation and a fair share contribution.

These are acknowledged.

 The circulation plans for truck delivery access should be included in the traffic study.

For the purposes of this study, it was assumed that most of the delivery truck traffic would use the easternmost access off of Heber Road. Some delivery traffic was also assigned to the driveway to the west of that. Additional delivery traffic would be expected to use Correll Road and the easternmost driveway from the project site.

 The Transportation Concept Report shows that SR-111 may be widened in the future. The developer should realize that this might require additional Right of Way in the vicinity of the developers proposed project.

This is acknowledged.

The comment letter also asked for additional detail regarding the transportation facilities that might serve the development, including Yourman Road, right-of-way lines and pedestrian traffic areas. DDE would need to provide details on these items.

There were also two additional comments regarding accident data. This data has been requested from CalTrans on multiple occasions and still has not been received. Once we

have obtained that data, we will process our response to those comments.

FOR RANDY HOCKING

Sincerely, DAHI, ROBINS & ASSOCIATES, INC.

Randy Hoskins

TABLE 8
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

		2020		
Intersection	Mvmt	AM	PM	
	NBLT	Α	В	
Yourman Rd	SBLT	А	В	
& Jasper Rd	EB	Α	Α	
	WB	Α	Α	
	NBLT	С	D	
Heber Rd &	SBLT	В	В	
Bowker Rd	£В	Α	Α	
	WB	Α "	Α	
	NB	В	В	
McCabe Rd &	SB	В	В	
Bowker Rd	EBLT	Α	Α	
	WBLT	Α	Α	
	NBLT	В	В	
Jasper Rd	SBLT	В	В	
&	EB	Α	Α	
Bowker Rd	WB	Α	Α	
Heber Rd &	SB	В	D	
∝ West Dr.	EBLT	Α	Α	
Heber Rd &	SB	В	С	
East Dr.	EBLT	Α	Α	

Kevin A. Dahl, P.E., R.L.S. Christopher D. Robins, P.E. Juan N. Lomeli', R.L.S. Douglas J. Nicholls, P.E.

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July 1, 2002

Development Design Engineering, LLC 1122 State Street, Suite D El Centro, CA 92243

Attention: Mr. Tom Dubose, Manager

Reference: Imperial Center Traffic Impact Study

Dear Mr. Dubose:

We have reviewed the comments on the Imperial Center Traffic Impact Study provided by Bill Figge of the California Department of Transportation dated May 29, 2002. The following are our replies to his comments:

The Traffic Study indicates that there are several phases (Phase I - Phase V) to this project. Each phase of the project needs to be outlined in detail, with impacts to State Route 111 (SR-111) and State Route 86 (SR-86) for each project. The response by Dahl Robins does not adequately answer this question. Section II.B.4 of the latest Preliminary Traffic Impact Study on pages 6 and 7 only outlines years that buildings will come online, it does not address "Impacts" to SR-111 and SR-86 by phase as requested. Impacts are changes in Traffic Volumes, mitigated changes to the state highway system etc. as a result of planned project.

The estimated phasing and timing of the development was described in Section II.B.4 of the report. The traffic generated by each phase is noted in Table 2, with Figures 6-10 showing resulting peak hour traffic volumes. Tables 5-7 show the impacts on the Level Of Service of surrounding roads for each phase of the project. Tables 8 & 9 show ultimate service levels in the year 2020. Any needed improvements for mitigating the intersections are outlined in Section VII.A, and it is noted at which phase the improvements will need to be completed.

 A review of collision history at all impacted locations with SR-111 should be completed and mitigation provided to any increase in collision history as a

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May 20	9:58am	Sent	17603526408	0:55	2	OK	

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occurring at this intersection is the rear end collision. In order to decrease the frequency of these types of accidents, it is recommended some form of advance flasher be installed notifying motorists when the light is expected to turn red for their approach. Since this intersection is already experiencing 5 of these types of crashes per year, this would be a good mitigation measure to implement immediately, independent of any development at this site.

At the Jasper Road and SR-111 intersection, there are currently about 4 accidents per year. Based on the increased volume, that number could be expected to increase to 7 per year by 2020. The number of accidents correctable by signal installation would be five. This was the only intersection that would warrant a signal based on accidents (in 2010). Since it also meets volume warrants, a signal was previously recommended for this location. The angle accidents are the primary type of crashes occurring, so no other mitigation is expected to be needed.

At the McCabe Road and SR-111 intersection, there are currently about 2 accidents per year. Based on the increased volume, that number could be expected to increase to 3 per year by 2020. The number of accidents correctable by signal installation would be three. The proposal to install a signal at this location when volume warrants are met should adequately mitigate the majority of the accidents occurring here.

At the Heber Road and Dogwood Road intersection, there is currently an average of 1 accident per year. Based on the increased volume, that number could be expected to increase to 2 per year by 2020. None of the accidents are correctable by signal installation. This minimal increase in the number of accidents does not suggest mitigation would be necessary.

Sincerely,

DAHL, ROBINS & ASSOCIATES, INC.

Randy Hoskins

Kevin A. Dahl, P.E., R.L.S. Christopher D. Robins, P.E. Juan N. Lomeli', R.L.S. Douglas J. Nicholls, P.E.

DAHL, ROBINS & ASSOCIATES, INC.

CIVIL ENGINEERING SURVEYING TRAFFIC

1560 South 5th Avenue Yuma, Arizona 85364 Phone: (928) 819-0825 Fax: (928) 819-0826 E-mail: dra@dahlrobins.com

May 20, 2002

Development Design Engineering, LLC 1122 State Street, Suite D El Centro, CA 92243

Attention: Mr. Tom Dubose, Manager

Reference: Imperial Center Traffic Impact Study

Dear Mr. Dubose:

We have received the accident data from the California Department of Transportation to provide a response to Bill Figge's comments on the Imperial Center Traffic Impact Study. The following are our replies to his comments:

- A review of collision history at all impacted locations with SR-111 should be included and mitigation provided to any increase in collision history as a result of increased volumes from this project. Impacted locations would include Jasper Road and SR-111, McCabe Road and SR-111, Heber Road and SR-111 and Dogwood Road and Heber/SR-86.
- All proposed signals on SR-111 or to be coordinated with SR-111 should be analyzed to meet not only volume warrants, but also collision history warrants, and mitigated as necessary.

The existing accident rate for each intersection was determined using the 1998-2001 data provided by CalTrans. By making the gross assumption this rate would stay constant as traffic volumes increased, the numbers of accidents were projected in to the future years.

At the Heber Road and SR-111 intersection, there are currently about 7 accidents per year. Based on the increased volume, that number could be expected to increase to 15 per year by 2020. The number of accidents correctable by signal installation would be four (realizing signals are already in place at this location). The primary type of accident

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TABLE 9
SIGNALIZED INTERSECTION LEVEL OF SERVICE IMPACT

Intersection	Mvmt	Jasper & Hwy 111	Heber & Yourman	McCabe & Hwy 111	Heber & Hwy 111	Heber & Dogwood
2020	SB	C/C	C/C	C/C	D/B	C/B
	WB	D/F	E/C	C/C	C/C	C/B
	NB	A/B	B/C	A/A	C/D	B/C
	EB	ĄD	B/C	A/C	B/C	C/D
	INT	A/C	C/C	A/B	C/C	C/C

result of increased volumes from this project. Impacted locations would include Jasper Road and SR-111, McCabe Road and SR-111, Heber Road and SR-111, and Dogwood Road and Heber/SR-86.

As outlined in section V.B of the report, the existing accident rate for each intersection was determined using the 1998-2001 data provided by CalTrans. By making the gross assumption this rate would stay constant as traffic volumes increased, the numbers of accidents were projected in to the future years.

At the Heber Road and SR-111 intersection, there are currently about 7 accidents per year. Based on the increased volume, that number could be expected to increase to 15 per year by 2020. The number of accidents correctable by signal installation would be four (realizing signals are already in place at this location). The primary type of accident occurring at this intersection is the rear end collision. In order to decrease the frequency of these types of accidents, it is recommended some form of advance flasher be installed notifying motorists when the light is expected to turn red for their approach. Since this intersection is already experiencing 5 of these types of crashes per year, this would be a good mitigation measure to implement immediately, independent of any development at this site.

At the Jasper Road and SR-111 intersection, there are currently about 4 accidents per year. Based on the increased volume, that number could be expected to increase to 7 per year by 2020. The number of accidents correctable by signal installation would be five. This was the only intersection that would warrant a signal based on accidents (in 2010). Since it also meets volume warrants, a signal was previously recommended for this location. The angle accidents are the primary type of crashes occurring, so no other mitigation is expected to be needed.

At the McCabe Road and SR-111 intersection, there are currently about 2 accidents per year. Based on the increased volume, that number could be expected to increase to 3 per year by 2020. The number of accidents correctable by signal installation would be three. The proposal to install a signal at this location when volume warrants are met should adequately mitigate the majority of the accidents occurring here.

At the Heber Road and Dogwood Road intersection, there is currently an average of 1 accident per year. Based on the increased volume, that number could be expected to increase to 2 per year by 2020. None of the accidents are correctable by signal installation. This minimal increase in the number of accidents does not suggest mitigation would be necessary.

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DAHL, ROBINS & ASSOCIATES, INC.

Randy Hoskins

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