

COUNTY OF ESSEX  
COUNTY ROAD 19  
CORRIDOR STUDY

F.R. Berry & Associates  
April, 2002



# COUNTY OF ESSEX COUNTY ROAD 19 CORRIDOR STUDY

## 1. INTRODUCTION AND BACKGROUND

County Road 19 (Manning Road) runs south from Riverside Drive in Tecumseh to County Road 8. For much of its length, County Road 19 functions as a rural arterial but north of County Road 22 it assumes urban characteristics. County Road 19 serves as a major link between Highway 401 and Tecumseh and the east end of Windsor. It also serves as the major access to growing industrial and commercial developments in the municipalities of Tecumseh and Lakeshore.

Because of the increasing traffic demand on County Road 19, the County of Essex retained F.R. Berry & Associates to assess traffic operation in the corridor and to make recommendations for future improvements to County Road 19. These recommendations take into account known future residential, commercial and industrial growth in the municipalities of Tecumseh and Lakeshore. The study area extended from Riverside Drive to Highway 3 (Figure 1).

Projections were made for five-year, ten-year and 20-year planning horizons. For each horizon, the study analyzed the estimated traffic demand and identified improvements which would be required to accommodate that demand at an acceptable level of service.

## 2. EXISTING CONDITIONS

County Road 19 is a two-lane arterial with posted speed limits ranging from 50 km/h north of Tecumseh Road to 80 km/h south of County Road 42. The major intersections are signalized and have auxiliary turning lanes.

For this study, turning movement counts were made at most of the key intersections in May and June, 2001. Traffic counts made at Highway 401 and Highway 3 in August and October 2000 were obtained from the Ministry of Transportation. In addition, Saturday peak period turning movement counts were made at the intersections with Tecumseh Road and County Road 22 in June, 2001.

Figure 2 shows average daily traffic derived from these counts. Figures 3 and 4 show morning and afternoon weekday peak hour turning movements while Figure 5 shows Saturday peak hour turning movements.



Based on these counts, level of service analyses were made for each intersection for each of the morning, afternoon and Saturday peak hours as applicable. The summaries of these level of service analyses are shown in Tables 1, 2 and 3. Analysis worksheets are contained in Appendix B. Level of service is a measure of how well an intersection or section of roadway operates under prevailing traffic and roadway conditions. It is measured in terms of average delay to vehicles passing through the intersection or section of roadway and is expressed on a scale of A to F where A is the highest level of service and F indicates unacceptable delay and congestion.

For urban conditions, levels of service D and E are considered acceptable for "design" purposes. In other words, when traffic operation fall below these levels, improvements to the street or intersection are generally warranted. The Windsor Area Long Range Transportation Study established level of service E as the standard for deficiencies in the Windsor street system. Level of service E is equivalent to about 90 percent of the actual capacity of the street or intersection.

For County Road 19, level of service E was used as the criterion for defining deficiencies in the urban areas of the corridor while level of service D was used for the rural areas. The level of service analyses identified a number of existing problem areas. These are as follows.

At the intersection with Tecumseh Road, peak hour volume to capacity ratios (v/c) range from 0.74 in the morning peak hour to 0.87 in the Saturday peak hour. This suggests that the intersection, while still operating at an acceptable level of service, is approaching the point where operational breakdowns could occur if the traffic demand on any of the approaches increases.

There are major problems at the intersection with County Road 22. In the afternoon weekday peak hours, the northbound and eastbound left turn movements exceed capacity. Adjustments to the signal phasing to allow more green time for these movements did not significantly improve their operation but did increase delay in other movements, particularly the northbound, southbound and westbound through movements.

If County Road 19 is widened to provide two through lanes in each direction, the level of service would improve to level D overall and to level E on the northbound and westbound approaches. The critical left turn movements would still be subject to long delays.



It is recommended that immediate consideration be given to widening County Road 19 to provide two through lanes in each direction through the intersection of County Road 22. Other measures, such as double left turn lanes on the northbound and eastbound approaches and a channelized right turn on the westbound approach, should be considered for future implementation.

Traffic signals were recently installed at the intersection of County Road 19 and Amy Croft Drive. A report prepared by F.R. Berry & Associates for the developer of the lands to the east<sup>1</sup> recommended that traffic signals be deferred until the lands to the west were developed. Because of the spacing of the intersections, there is some difficulty with coordination of the two signals. It is understood that northbound traffic has on occasion backed up from Amy Croft Drive to County Road 22. The continuation of widening of County Road 19 to the north of Amy Croft Drive will help to alleviate this problem.

In summary, County Road 19 should be widened as soon as possible to provide two through lanes in each direction from about 200 metres south of County Road 22 to about 100 metres north of Amy Croft Drive.

Immediately south of the intersection of County Roads 19 and 22, Desro Drive intersects County Road 19. Currently, full turns are permitted in and out of the intersection. Desro Drive is a cul-de-sac which provides access to a number of commercial uses, including a marine retail and storage operation and a bingo hall.

Access to and from Desro Drive is frequently impeded by northbound traffic waiting to make a left turn at County Road 22. In addition, the location of the intersection at the merge point of the channelized right turn lane from County Road 22 creates a hazardous situation for existing traffic. For these reasons, it is recommended that Desro Drive be restricted to right turns in and out by means of a barrier median on County Road 19. This work should be done in conjunction with the recommended widening of County Road 19 through the intersection of County Road 22.

Turning movement counts made at the intersection with County Road 22 in March, 1998 were compared with those made in June, 2001. The increase in peak hour traffic volumes over the three years is:

---

<sup>1</sup> Lakeshore Estates, Phase I, F.R. Berry & Associates, July 2000. (Plus follow-up letter of Jan. 31, 2001.





- north leg 4.2 percent
- south leg 13.7 percent
- east leg 47.6 percent
- west leg 25.1 percent
- overall 24.9 percent

The overall growth of traffic through the intersection is equivalent to an annual growth rate of over seven percent.

At County Road 46, the northbound left turn movement in the morning peak hour is heavy, resulting in a level of service D for this movement. While still an acceptable level of service, this movement should be monitored and signal timing adjusted if necessary.

At County Road 34, the southbound left turn movement shares a traffic lane with the through and right turn movement. The left turn demand is heavy enough (350 vph) to warrant a separate left turn lane. It is recommended that a left turn lane with a minimum storage length of 80 metres be constructed on the southbound approach as soon as possible.

### 3. FUTURE DEVELOPMENT

Major developments in the County Road 19 corridor within the next 20 years were identified by the planning staffs of Tecumseh and Lakeshore. Using the best available information at this time staff made estimates of the type and magnitude of the development and of the projected time frame for development.

Figure 6 shows a schematic representation of this development. In most cases, there will be direct access to County Road 19, some of which is already in place. In other cases, such as Maidstone Hamlet, access will be via other existing streets to County Road 19.

#### 3.1 Development Traffic

*Table 4* shows the estimated vehicle trip generation for each development. The table identifies the total trip generation for the development and then the portion of the trip generation assigned to County Road 19 north and south of the location of the development. *Table 4* also indicates the projected time frame for full development. Where the development extends over more than one time increment, it was assumed that the trip generation would be equally divided between the two increments.



Clearly, the assumptions made with respect to the size of each development and the time frame for it's completion, particularly those developments anticipated to occur more than five years in the future, are quite broadly based. It would be appropriate, therefore, to monitor the rate of development in the two municipalities at regular intervals and to adjust the recommendation of this study accordingly.

Development traffic, both average daily traffic and peak hour traffic, was assigned to County Road 19 and each of the intersecting streets as shown in **Figures 7, 8 and 9**. **Figure 7** reflects the development traffic expected to be generated in the next five years, **Figure 8** shows the total new development traffic by 2011 and **Figure 9** shows the total 20-year development vehicle trip generation. The assignment was based on existing traffic patterns and on the locations of major concentrations of employment, shopping and residential. A high degree of judgment was used in making the assignments. Nevertheless they are considered to be a good representation of traffic patterns in the corridor.

For the major commercial areas north of County Road 22, separate assignments were made for the Saturday peak hour. These assignments are shown in **Figures 10 and 11** for years 0 to 5 and 0 to 10 respectively. Since all commercial development in this area is expected to be complete by 2011, no additional traffic would be generated in the following ten years.

### 3.2 Background Traffic

In addition to traffic generated by the specific developments identified in **Figure 6** and **Table 4**, an allowance was made for general traffic growth. This growth would be generated by such factors as an increase in trip-making to and from existing uses, minor infill development and traffic passing through the study area.

For the purposes of this study, growth factors of 1.05, 1.10 and 1.15 were assumed for the 0 to 5, 0 to 10 and 0 to 20 year periods respectively. 2001 traffic volumes as shown in **Figures 2, 4 and 5** were multiplied by the appropriate factor to give projected background traffic for the horizon years 2006, 2011 and 2021. Morning peak hour volumes were not projected since vehicle trip generation was based on the afternoon peak hour only.

### 3.3 Total Traffic

**Figures 12, 13 and 14** show the projected total traffic for the horizon years 2006, 2011 and 2021. The total traffic volumes were obtained by adding the development traffic shown in **Figures 7, 8 and 9** to the factored background traffic. **Figures 15 and 16** show the total Saturday peak hour traffic for 2006 and 2011 obtained in the same way.



## 4. ANALYSIS

Each of the key intersections in the study area was analyzed for level of service and operating efficiency for each of the horizon years. Where the level of service dropped below an acceptable level, adjustments were made to bring the level of service back up. These adjustments included the addition of through lanes, the addition of turning lanes and changes to signal phasing and timing as appropriate. Appendix B contains the level of service worksheets.

Intersections generally determine the available capacity of a road or street. For street sections between intersections, the available capacity was determined using criteria established for the Windsor Area Long Term Transportation Study. This study used a design capacity of 900 vehicles per hour per lane for a Class 1 arterial and 800 vehicles per hour per lane for a Class 2 arterial. For the purposes of this study, the Class 1 designation was assumed to apply to County Road 19 north of County Road 22 and the Class 2 designation was assumed to apply to County Road 19 south of County Road 22.

### 4.1 Riverside Drive

No changes would be required to the intersection of County Road 19 with Riverside Drive before 2011. By that time, however, the northbound approach movement would be operating at level of service D. This suggests that in the period between 2011 and 2021, an additional northbound lane should be added to accommodate left turns.

### 4.2 Riverside Drive to St. Gregory's Road

By 2021, the peak hour one-way traffic volume on this section is estimated to approach 700 vph. This would not justify the widening of County Road 19 to a four-lane section.

### 4.3 St. Gregory's Road

Currently this signalized intersection operates at a good level of service. By 2006, however, both the northbound and southbound left turn movements will exceed 100 vehicles in the peak hour. A good level of service can be maintained by increasing the cycle length to 90 seconds and introducing a protected advance green phase for the northbound and southbound left turns.

By 2011, the total northbound peak hour approach volume will exceed 850. A separate right turn lane would significantly improve the operation of this approach.



**4.4 St. Gregory's Road to Tecumseh Road**

By 2011, the peak hour volumes on this section of County Road 19 will approach capacity. The turning movements at the entrances to the shopping centres on both sides of the road will require auxiliary turning lanes. It is recommended that this section of County Road 19 be widened to a five-lane cross-section. The curb lanes in each direction would function as combined through and right turn lanes while the centre lane would provide for left turns as appropriate.

**4.5 Tecumseh Road**

Currently this intersection operates at an acceptable level of service with volume to capacity ratios of 0.84 and 0.87 in the weekday and Saturday peak hours.

By 2006 however, the intersection level of service will deteriorate to unacceptable levels if no improvements are implemented. It is recommended that the five-lane section on County Road 19 be extended through the intersection with the curb lane in each direction functioning as a joint through and right turn lane. In addition, a right turn lane should be added on the eastbound approach.

With appropriate adjustments to signal timing, this configuration should provide sufficient capacity beyond 2011 for both weekday and Saturday peak hour demand.

By 2021, the level of service will again have deteriorated to the point where auxiliary right turn lanes will be required on each of the northbound and southbound approaches. There would then be a left turn lane, two through lanes and one right turn lane on each of these approaches.

**4.6 Tecumseh Road to County Road 22**

In terms of future development, this section of County Road 19 will be subject to the greatest impact. Currently weekday and Saturday peak hour volumes are approaching capacity. It is recommended that, as soon as possible, the section of County Road 19 from north of Amy Croft Drive to County Road 22 be widened to provide two lanes in each direction plus left turn lanes at County Road 22 and Amy Croft Drive. This widening will, in addition to providing additional capacity, provide for improved storage for northbound traffic stopped at the traffic signal at Amy Croft Drive.

By 2006, the four-lane widening should be completed to Tecumseh Road in conjunction with the improvements recommended for the intersection with Tecumseh Road. Consideration should also be given to signaling the intersection with Lanoue Street and the construction of a median barrier north of





Lanoue Street to limit turning movements to the commercial development on the west side to right turns only.

The distances between Lanoue Street, Amy Croft Drive and County Road 22 are less than ideal for signalization. However, with appropriate phasing and offsets, the intersections should function effectively. It would be appropriate to provide auxiliary right turn lanes at each of the intersections of Lanoue Street and Amy Croft Drive when County Road 19 is widened.

#### 4.7 County Road 22

This intersection is currently operating over capacity. It is recommended that, as soon as possible, County Road 19 be widened to provide two lanes in each direction through the intersection plus left turn lanes.

The two critical movements are the eastbound left turn and the northbound left turn. These movements will continue to increase and, by 2006, it will be necessary to consider double left turn lanes for each movement.

This study did not consider future growth in traffic on County Road 22. However, given the history of traffic growth on this road and the impact of development in the County Road 19 corridor, it appears likely that there will be a requirement to widen County Road 22 to provide three through lanes in each direction by 2011.

#### 4.8 County Road 22 to County Road 42

Existing intersections in this section are Desro Drive, Jamsyl Drive and Sylvestre Drive. In conjunction with the extension of the four-lane widening of County Road 19 through the intersection of County Road 22, it is recommended that turning movements at Desro Drive be restricted to right turns only by means of a median barrier.

By 2006, the four-lane section should be extended south to County Road 42. This is somewhat contingent on the development of the residential areas west of County Road 19. If these are delayed beyond the projected time frame, the widening of County Road 19 could also be wholly or partially delayed.

Studies done for the projected industrial area east of County Road 19 suggest that the primary access to this area would be at Jamsyl Drive. Consideration should be given to the future signalization of this intersection. The requirements for other intersections, including Sylvestre Drive and the accesses to future residential development, will be contingent on site specific studies for developments served by these intersections.





**4.9 County Road 42**

Currently on the eastbound and westbound approaches to this intersection, the left turn and through movements share a single lane, while the right turn movements have exclusive lanes. By 2006, it is recommended that the lane configuration be adjusted to provide separate left turn, through and right turn lanes on the eastbound approach and separate left turn and combined through and right turn lanes on the westbound approach. In conjunction with these changes, it would be appropriate to change the signal phasing to provide for a protected advance green indication for eastbound and westbound left turns.

By 2011, the intersection should be reconstructed to provide two lanes plus a left turn lane on each of the northbound and southbound approaches. In each case, the curb lane would be shared by the through and right turn movements. By 2021, it would be appropriate to add an exclusive southbound right turn lane.

**4.10 County Road 42 to Highway 401**

Until 2006 the existing two-lane rural configuration of this section of County Road 19 should provide adequate capacity. Within the period of 2006 to 2011, it is expected that a major transportation related development will occur on the west side of County Road 19 near Highway 401. This development and the increase in traffic between Highway 401 and new developments to the north, will warrant the widening of County Road 19 to four lanes.

**4.11 Highway 401 Interchange**

The Ministry of Transportation is currently conducting a study of Highway 401 in Essex County to determine what improvements are required over the next 20 years. The configuration of existing interchanges will be examined.

As through traffic on County Road 19 increases, delays to traffic making a left turn from both ramps to County Road 19 will increase. By 2011, separate left and right turn lanes should be provided on both ramp approaches.

The movement from southbound County Road 19 to westbound Highway 401 currently makes a left turn at the north ramp terminal. Construction of a direct north to west on-ramp will eliminate this movement and significantly improve the operation of the north ramp terminal intersection.

At the south ramp terminal the northbound to eastbound movement is minor and would not justify the construction of a direct south to east on-ramp by 2021. In any event, removal of this left turn movement from County Road 19 would only marginally improve the operation of the intersection.



The south ramp terminal is a four-way intersection, with the east leg providing access to the district OPP headquarters. A preliminary signal warrant analysis of 2011 approach volumes suggests that traffic signals would be justified by then or at least shortly thereafter. The Ministry of Transportation should be requested to consider this in their study of Highway 401 improvements. A northbound left turn lane should be constructed at the south ramp terminal in conjunction with signalization.

By 2021, through traffic volumes on County Road 19 will exceed the capacity of the existing two-lane structure over Highway 401. Consideration should be given to widening or twinning the structure.

**4.12 Highway 401 to County Road 46**

By 2021, two-way traffic volumes on this section will exceed the capacity of the existing two-lane configuration, primarily due to the development configuration, primarily due to the development of Maidstone Hamlet. If development plans for hamlet proceed on or ahead of the schedule assumed for this study, provision should be made for the widening of County Road 19 in conjunction with the development.

**4.13 County Road 46**

Other than adjustments to signal phasing and timing no changes would be required at this intersection until the end of the planning period. Again, however, any changes would be to a large degree contingent on the development of Maidstone Hamlet. As development of the hamlet proceeds, changes in traffic patterns in the area should be monitored and appropriate improvements planned for the adjacent County road system.

**4.14 County Road 46 to County Road 34**

Traffic counts indicate a heavy peak hour flow on this section of County Road 19. In the morning peak hour, the predominant movement is a right turn from County Road 34, north on County Road 19 and a left turn to County Road 46. In the afternoon peak hour the movement is reversed. A significant portion of the turning traffic to and from County Road 46 enters and leaves County Road 19 at North Talbot Road which provides an alternative route to the Town of Essex. 2001 counts suggest that peak hour traffic demand on the section of County Road 19 between County Road 46 and North Talbot Street already exceeds capacity.



Malden Road intersects County Road 19 approximately 170 metres south of County Road 46. The North Talbot Road intersection is approximately 50 metres further south. Currently, the taper for the northbound left turn lane overlaps both intersections.

The proximity of the three intersections, in conjunction with the turning movements described above, creates a potential operational and safety problem. As traffic generation from Maidstone Hamlet increases major problems are likely to develop in this area.

A number of alternative concepts were examined with the objective of improving traffic operation in this area. These were:

- close Malden Road east of County Road 19;
- realign Malden Road west of County Road 19 to intersect County Road 19 opposite North Talbot Road;
- realign Malden Road west of County Road 19 to intersect County Road 46 approximately 260 metres west of County Road 19 (existing intersection).

Figure 17 shows a schematic arrangement of these alternatives with the first option common to both.

It is recommended that the necessary steps be taken to implement the closure of Malden Road east of County Road 19 as soon as possible. The evaluation of the options for realignment of Malden Road west of County Road 19 should be done in conjunction with the planning for Maidstone Hamlet.

#### 4.15 County Road 34

As noted above there is a heavy peak hour movement between County Road 19 and County Road 34 east. In the afternoon peak hour, the current southbound left turn movement of 350 vehicles, greater than the through volume, warrants the immediate construction of a separate left turn lane. The required storage length is 80 metres.

With construction of this turning lane, no further improvements would be required during the planning period.

#### 4.16 Highway 3

No changes are required at this intersection.

The Ministry of Transportation is currently undertaking a study of Highway 3 between Windsor and Leamington. The study's preliminary conclusions also indicate that no improvements are required at this intersection.



## 5. CONCLUSIONS

The following summarizes the major recommendation of this study. A detailed breakdown is given in *Table 5* while *Figures 18, 19 and 20* shown the recommended lane configurations for each of the horizon years.

### Immediate

- Widen County Road 19 to provide two through lanes in each direction from north of Amy Croft Drive to south of Desro Drive.
- In conjunction with this widening restrict Desro Drive to right turns in and out only (median on County Road 19).
- Construct a southbound left turn lane with a minimum storage length of 80 metres at the intersection with County Road 34.

### By 2006

- Widen County Road 19 to provide two through lanes in each direction from St. Gregory's Road to north of Amy Croft Drive and from south of Desro Drive to Sylvestre Drive.
- Signalize Jamsyl Drive intersection.
- Widen County Road 19 to provide two through lanes in each direction from County Road 46 to County Road 34.

### By 2011

- Widen County Road 22 to provide three through lanes in each direction at County Road 19.
- Widen County Road 19 from Sylvestre Drive to Highway 401.
- Add direct N-W on ramp at Highway 401 and signalize south ramp terminal intersection.
- Realign Malden Road west of County Road 19.

### By 2021

- Widen County Road 19 to provide two through lanes in each direction from Highway 401 to County Road 46.
- Widen Highway 401 overpass to four lanes.

As noted earlier, traffic projections and hence the schedule of recommended improvements are based on the best information available at this time on development in the County Road 19 corridor. As development plans are confirmed or adjusted, the recommendations of this study should be adjusted accordingly.



No account has been taken of other transportation developments in the County. For example, the Windsor Area Long Range Transportation Study suggested further study for a Highway 401 East connector. One possible route would be an extension of the Lauzon Parkway to a new interchange with Highway 401. If this concept is implemented it would have a significant effect on future use of the Manning Road corridor.

It is understood that the County is proposing to undertake a comprehensive County-wide transportation study in 2002. This study will serve to define the role of County Road 19 in the wider transportation system and to confirm or adjust the findings of this study.





Intersection	Eastbound		Westbound		Northbound		Southbound		Intersection	
	Del	L of S	Del	L of S	Del	L of S	Del	L of S	v/c	L of S
Riverside	-	-	3.0	A(l)	8.0	B	-	-	-	A
St. Gregory's	12.3	B	13.2	B	5.5	B	5.5	B	0.39	B
Tecumseh	20.2	C	19.6	C	13.4	B	17.3	C	0.74	C
Co. Rd. 22	18.2	C	23.9	C	29.6	D	21.0	C	0.85	C
Co. Rd. 42	12.1	B	14.4	B	11.7	B	13.3	B	0.75	B
Hwy. 401 N	-	-	5.4	B	-	-	3.4	A(l)	-	A
Hwy. 401 S	7.8	B	6.0	B	3.0	A(l)	3.1	A(l)	-	A
Co. Rd. 46	12.5	B	11.5	B	18.6	C	15.1	C	0.73	C
Co. Rd. 34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hwy. 3	4.3	A	9.6	B	7.2	B	8.1	B	0.64	B

**Table 1**

Note: L of S - level of service

Del - average delay (secs)

(l) - left turn movement

v/c - volume to capacity ratio

**Level of Service**

**Morning Peak Hour (2001)**

Intersection	Eastbound		Westbound		Northbound		Southbound		Intersection	
	Del	L of S	Del	L of S	Del	L of S	Del	L of S	v/c	L of S
Riverside	-	-	3.7	A(l)	11.1	C	-	-	-	A
St. Gregory's	12.5	B	12.6	B	6.2	B	5.9	B	0.42	B
Tecumseh	21.6	C	19.2	C	14.1	B	24.3	C	0.84	C
Co. Rd. 22	*	F	53.6	E	*	F	33.6	D	1.0+	F
Co. Rd. 42	11.6	B	10.3	B	11.2	B	14.8	B	0.73	B
Hwy. 401 N	-	-	5.8	B	-	-	3.4	A(l)	-	A
Hwy. 401 S	10.2	C	5.9	B	4.0	A(l)	3.0	A(l)	-	A
Co. Rd. 46	13.4	B	8.8	B	10.5	B	13.9	B	0.76	B
Co. Rd. 34	14.8	B	15.7	C	2.9	A	28.8	D	0.84	C
Hwy. 3	9.4	B	4.3	A	7.2	B	10.1	B	0.74	B

**Table 2**

Note: L of S - level of service

Del - average delay (secs)

(l) - left turn movement

\* - over 100 seconds

v/c - volume to capacity ratio

**Level of Service**

**Afternoon Peak Hour (2001)**

Intersection	Eastbound		Westbound		Northbound		Southbound		Intersection	
	Del	L of S	Del	L of S	Del	L of S	Del	L of S	v/c	L of S
Tecumseh	23.3	C	19.9	C	15.8	C	25.6	D	0.87	C
Co. Rd. 22	19.2	C	20.9	C	23.4	C	21.4	C	0.71	C

**Table 3**

**Level of Service**

**Saturday Peak Hour (2001)**

Note: L of S - level of service

Del - average delay (secs)

(l) - left turn movement

v/c - volume to capacity ratio

Location	Land Use	Veh. Trip Generation		Assigned to Co. Rd. 19				Time Frame
		ADT	Pk. Hr.	North		South		
				ADT	Pk. Hr.	ADT	Pk Hr.	
N. of Riverside	100+/- apts	620	65	-	-	300	30	0-5 years
R'side - St. G.	176 apts	1000	100	200	20	800	80	0-5 years
Tec. - Co. Rd. 22	150 000 sf comm'l 171 ac comm'l/res	9100 23000	850 2300	3670 4600	340 460	1830 4200	170 420	0-5 years 0-10 years
Tec. - Co. Rd. 22	150 000 sf comm'l (Saturday) 171 ac comm'l/res (Saturday)	11800 27600	1150 2700	4720 5520	460 550	2360 5000	230 500	0-5 years 0-10 years
Co. Rd. 22 - CP Rail	125 ac ind. park* 350 SF res. 100 ac ind. park	3300 3300 5400	470 335 800	1800 1200 1100	260 120 160	1500 800 1000	210 80 150	0-10 years 0-5 years 10-20 years
CP Rail - Co. Rd. 42	150 SF res.	1500	155	800	80	700	75	0-10 years
Co. Rd. 42 - Hwy. 401	100 ac transp.	3000	285	820	80	2180	200	5-10 years
Maidstone Hamlet	2500+/- pop.	8600	860	2800	280	700	70	5-20 years

Note: \* assumed 50% complete

**Table 4**

## Future Development

Location	Immediate	by 2006	by 2011	by 2021
Riverside Dr. St. Gregory's Rd.		Add northbound right turn lane. Provide n'bound and s'bound advance green signal.		Add northbound left turn lane.
St. Gregory's Rd. to Tecumseh Rd. Tecumseh Rd.		Widen to five lanes.		
Tecumseh Rd. to Co. Rd. 22	Widen to five lanes from north of Amy Craft Dr. to Co. Rd. 22	Widen n'bound, s'bound and e'bound approaches to three lanes.	Adjust signal timing.	Add n'bound and s'bound right turn lanes.
Tecumseh Rd. to Co. Rd. 22	Widen to five lanes from north of Amy Craft Dr. to Co. Rd. 22	Widen to five lanes from north of Amy Craft Dr. to Tecumseh. Signalize intersection of Lanoue Street. Add right turn lanes at Lanoue St. and Amy Craft Dr.		
County Road 22	Widen n'bound and s'bound approaches to three lanes.	Provide double left turn lanes on e'bound and n'bound approaches.	Widen e'bound and w'bound approaches to provide three through lanes.	
Co. Road 22 to Co. Rd. 42	Widen to five lanes from Co. Rd. 22 to south of Desro Dr. Construct barrier median from Co. Rd. 22 to south of Desro Dr.	Widen to four lanes plus turning lanes from south of Desro Dr. to Sylvestre Dr. Signalize intersection of Jamsyl Drive.	Widen to four lanes plus turning lanes from Sylvestre Dr. to Co. Rd. 42.	
County Road 42		Reconfigure to provide exclusive left turn lanes on e'bound and w'bound approaches. Add e'bound right turn lane. Provide advance green signal for e'bound and w'bound left turns.	Widen s'bound and n'bound approaches to three lanes.	Add s'bound right turn lane.
County Road 42 to Highway 401 Highway 401			Widen to four lanes plus turning lanes. Add left turn lanes to both ramps at Co. Rd. 19. Add direct N-W on-ramp. Channelize north ramp terminal. Signalize south ramp terminal. Add n'bound left turn lane at south ramp terminal.	Widen overpass to four lanes.
Highway 401 to Co. Rd. 46 County Road 46			Adjust signal timing.	Widen to four lanes plus turning lanes. Adjust signal timing.
County Road 46 to Co. Rd. 34 County Road 34	Close Malden Rd. east of Co. Rd. 19. Add s'bound left turn lane.	Widen to four lanes plus turning lanes.	Realign Malden Rd. west of Co. Rd. 19.	

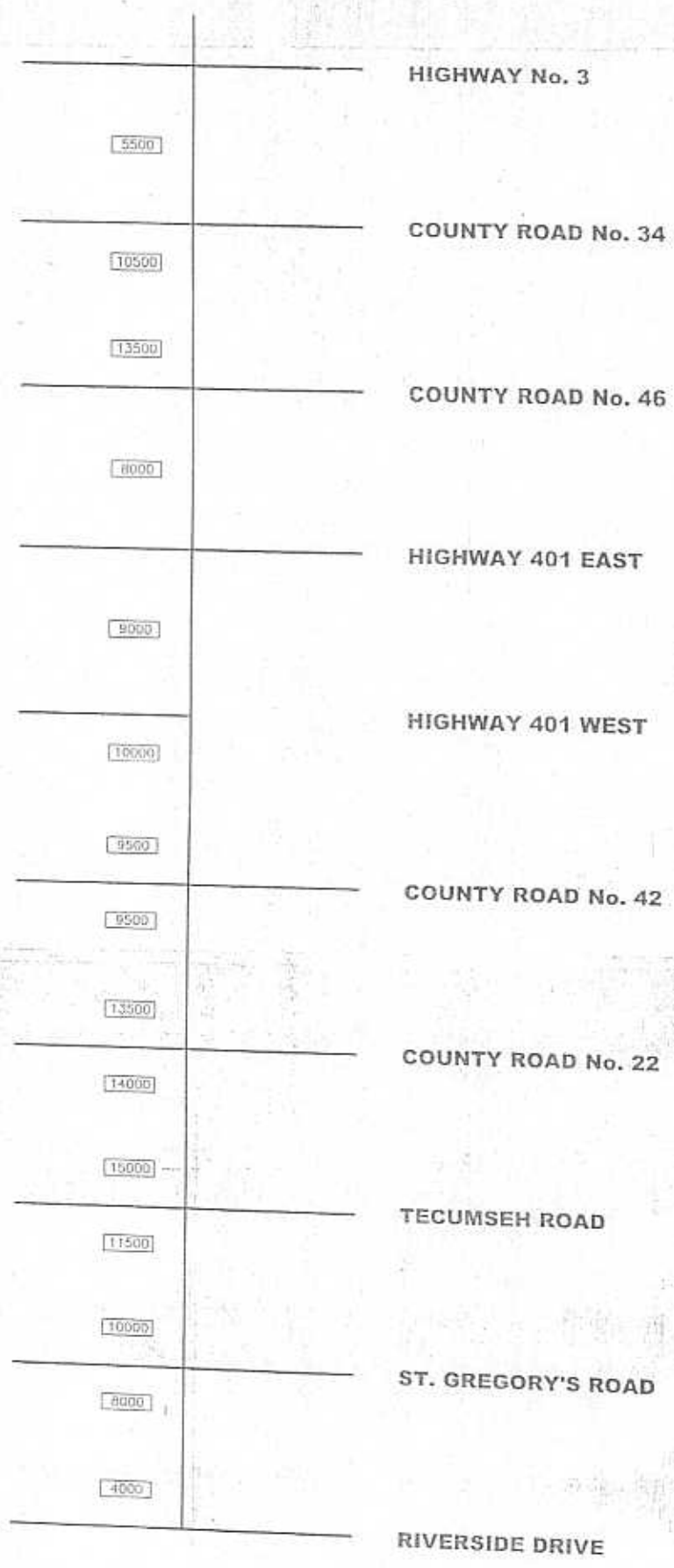
Table 5  
Proposed Schedule of Improvements

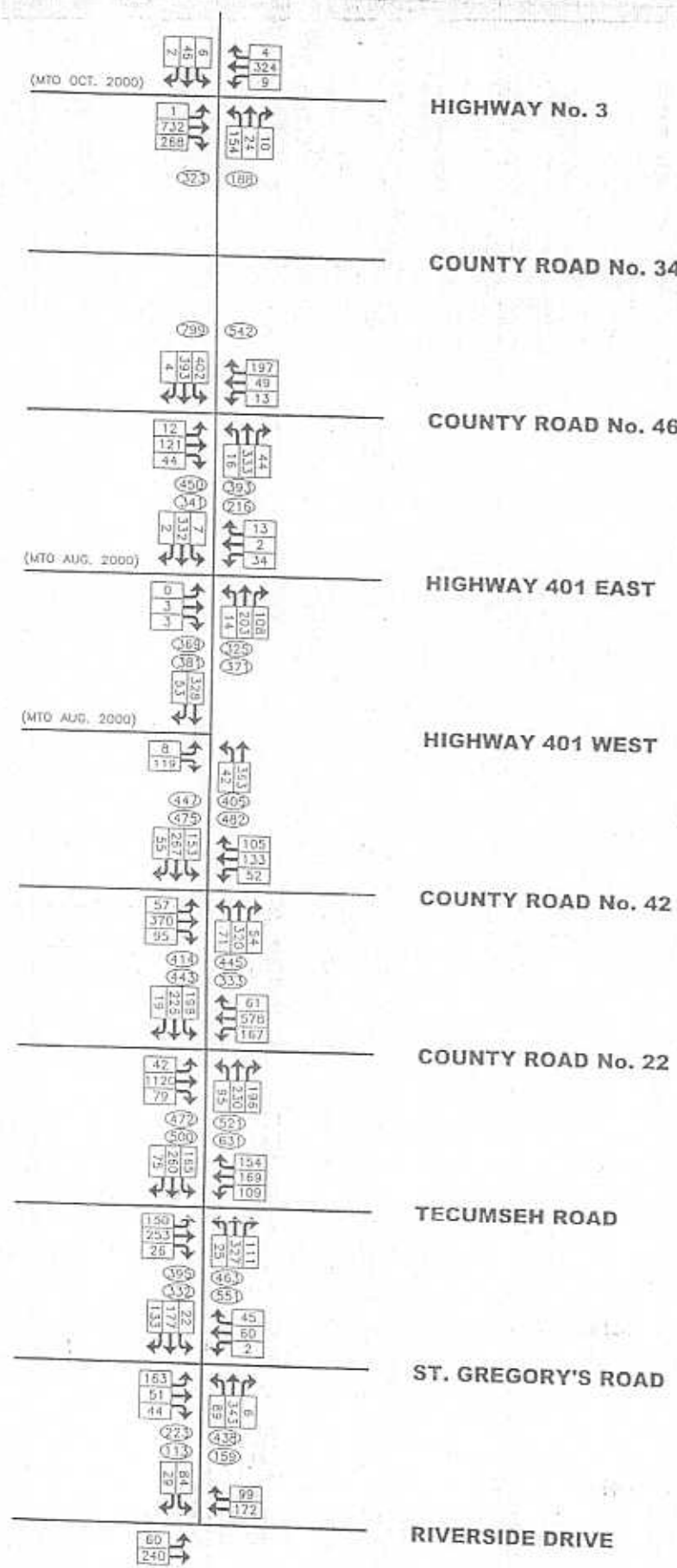




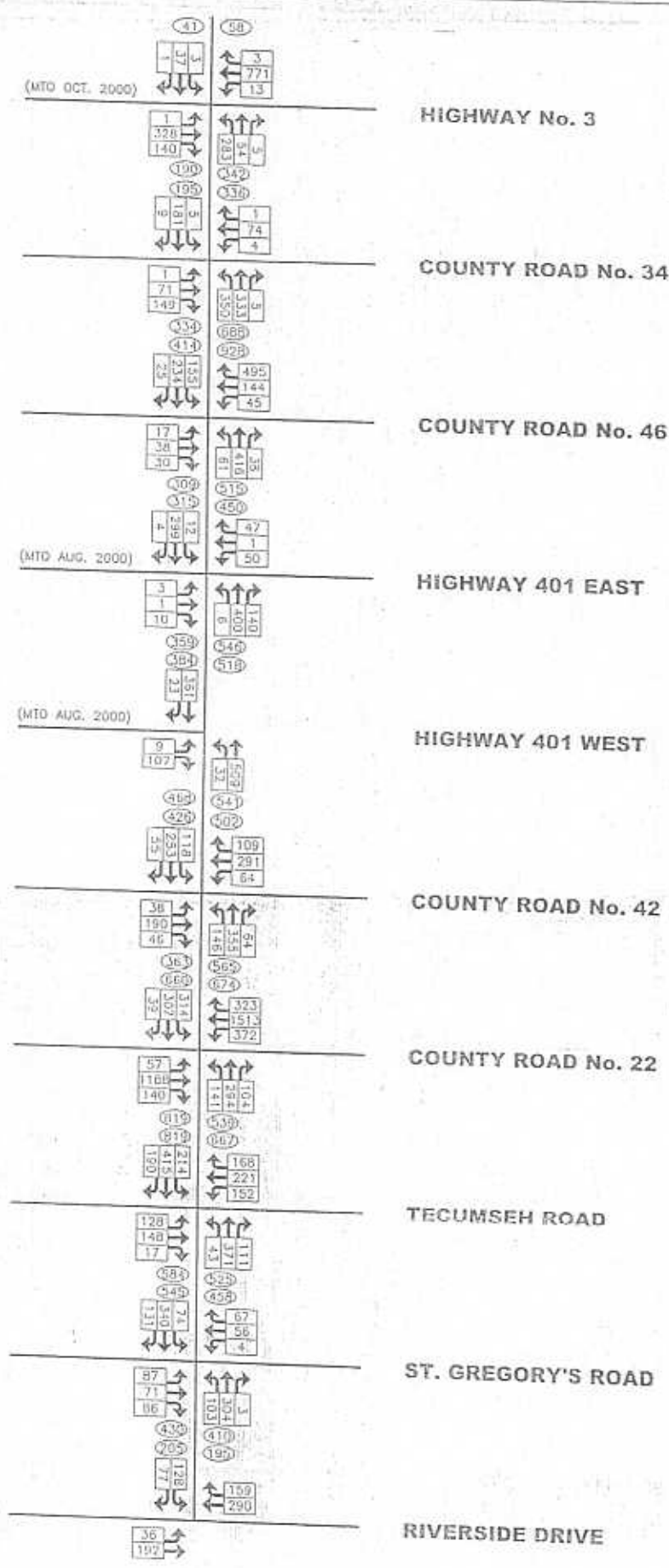
**FIGURE 1**  
Area Plan

**FIGURE 2**  
Average Daily Traffic  
2001





**FIGURE 3**  
AM Peak Hour  
2001



**FIGURE 4**  
PM Peak Hour  
2001

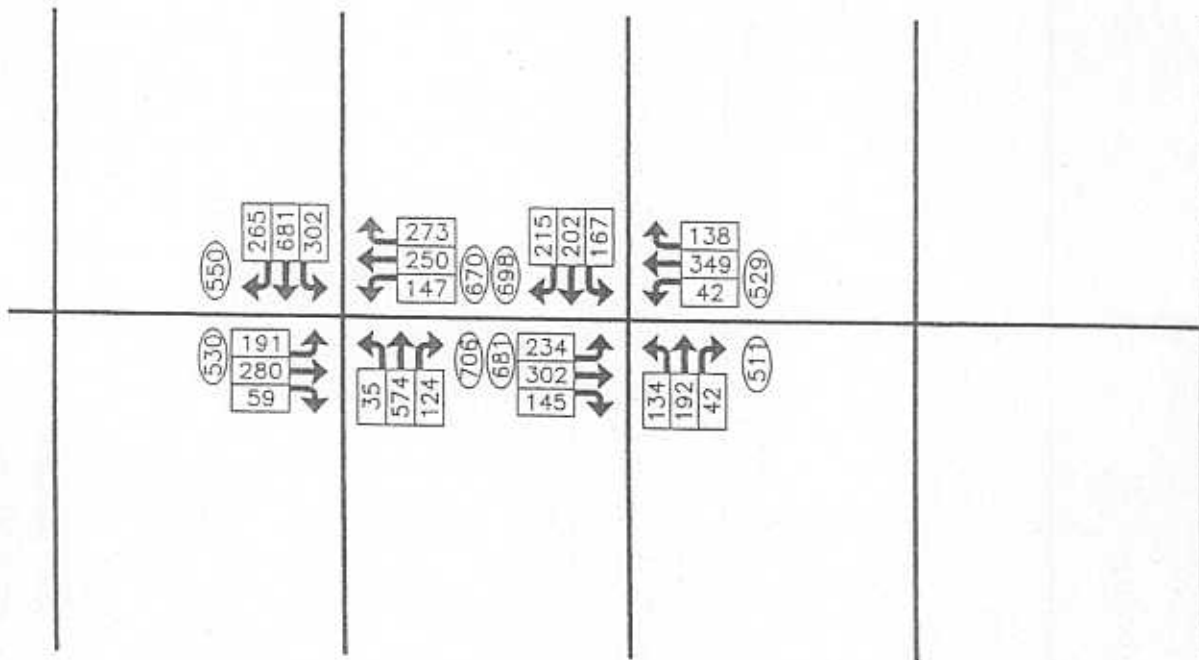
COUNTY ROAD No. 42

COUNTY ROAD No. 22

TECUMSEH ROAD

ST. GREGORY'S ROAD

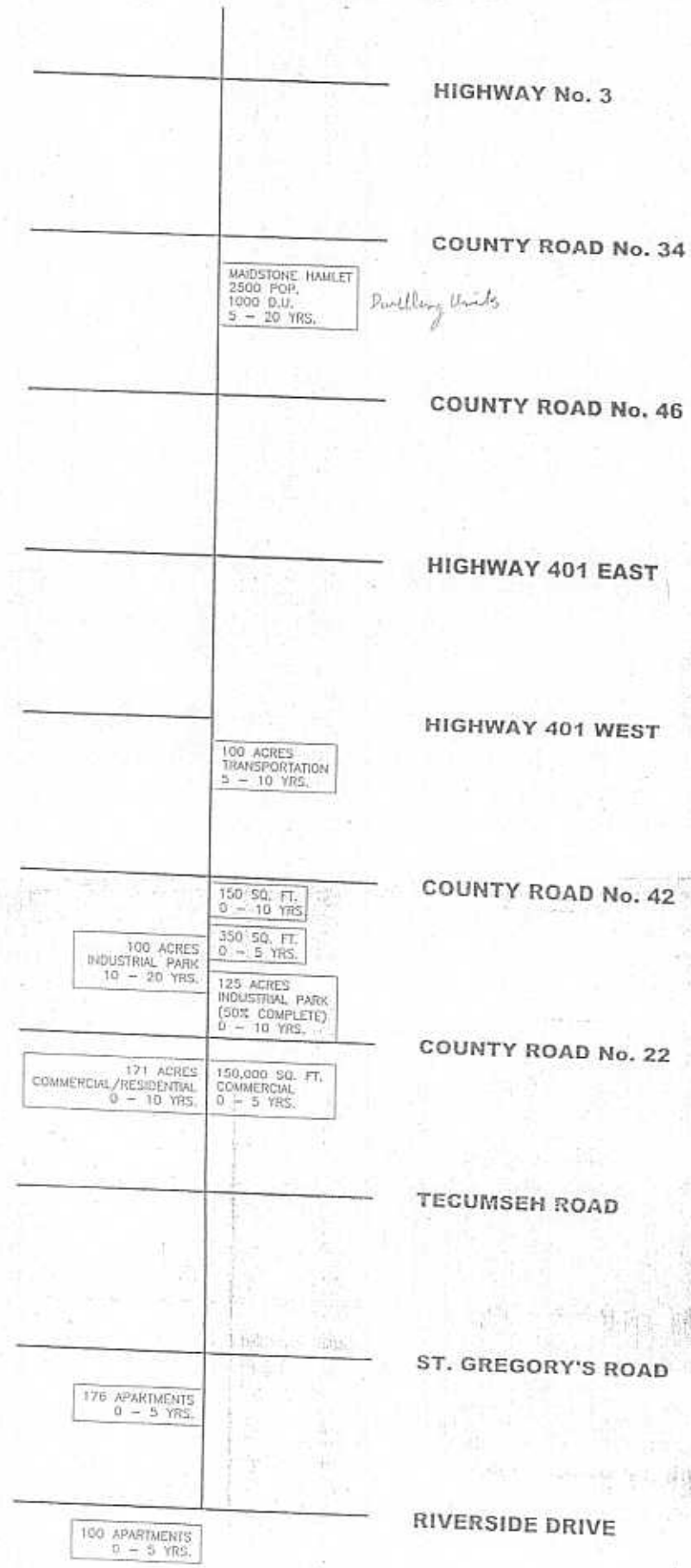
RIVERSIDE DRIVE



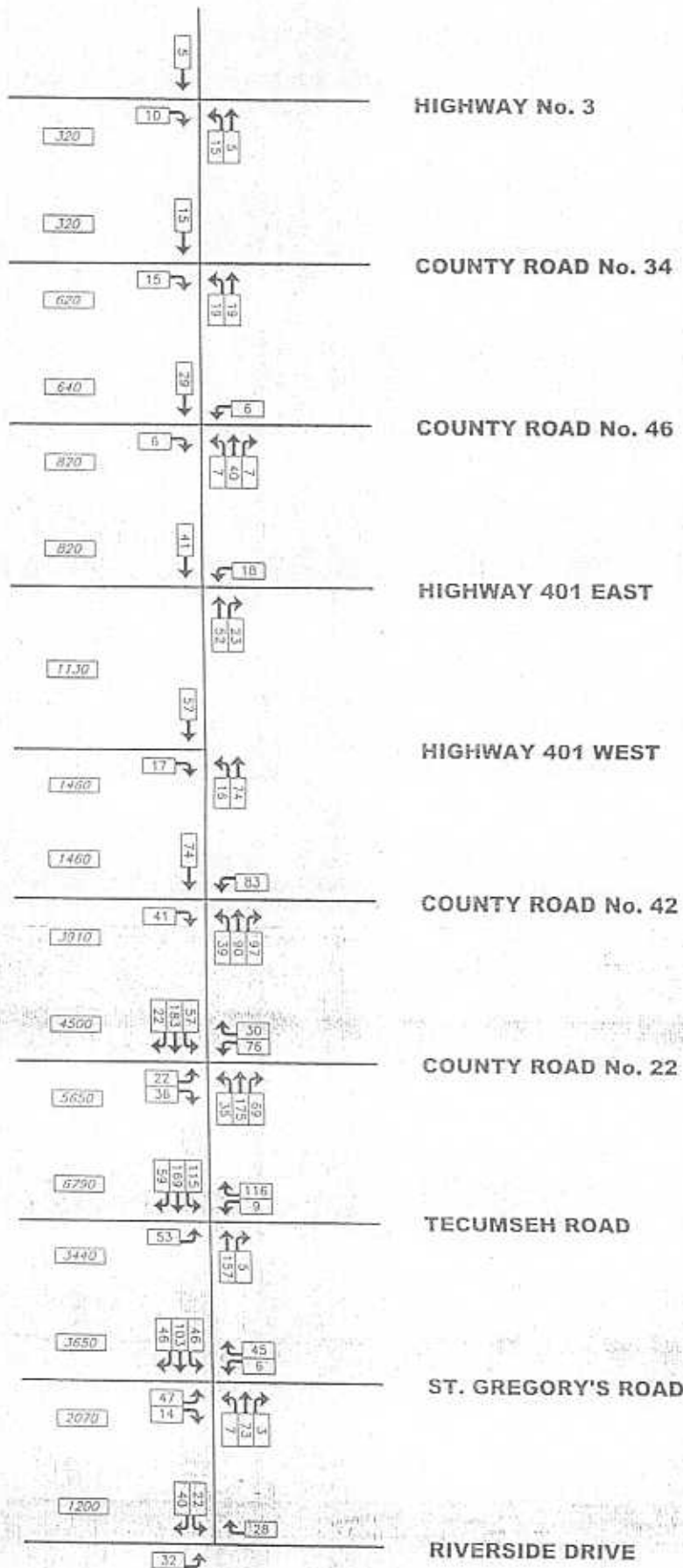
**FIGURE 5**  
Saturday Peak Hour  
2001



**FIGURE 6**  
Future Development





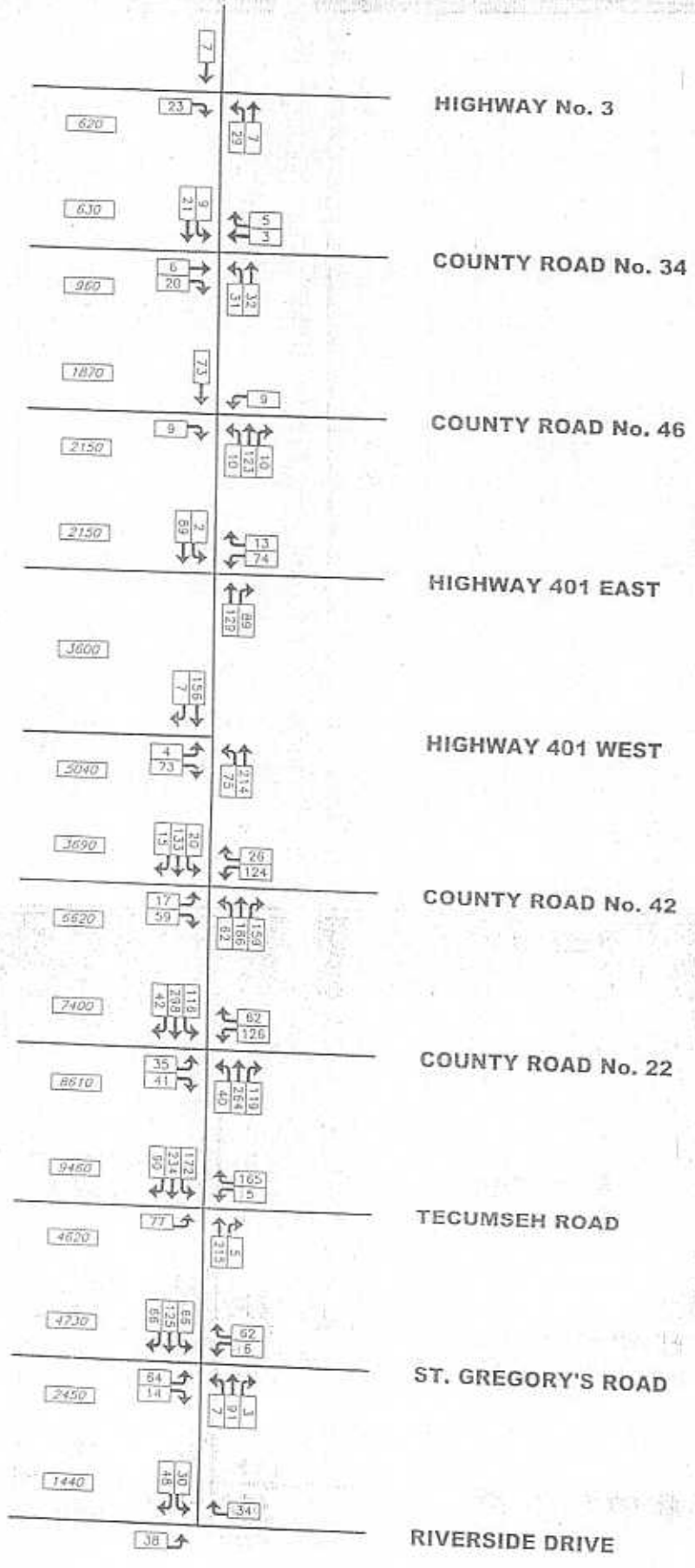
**LEGEND:**  
 AVERAGE DAILY TRAFFIC  
 P.M. PEAK HOUR



**FIGURE 7**  
 Development Traffic  
 2001 to 2006

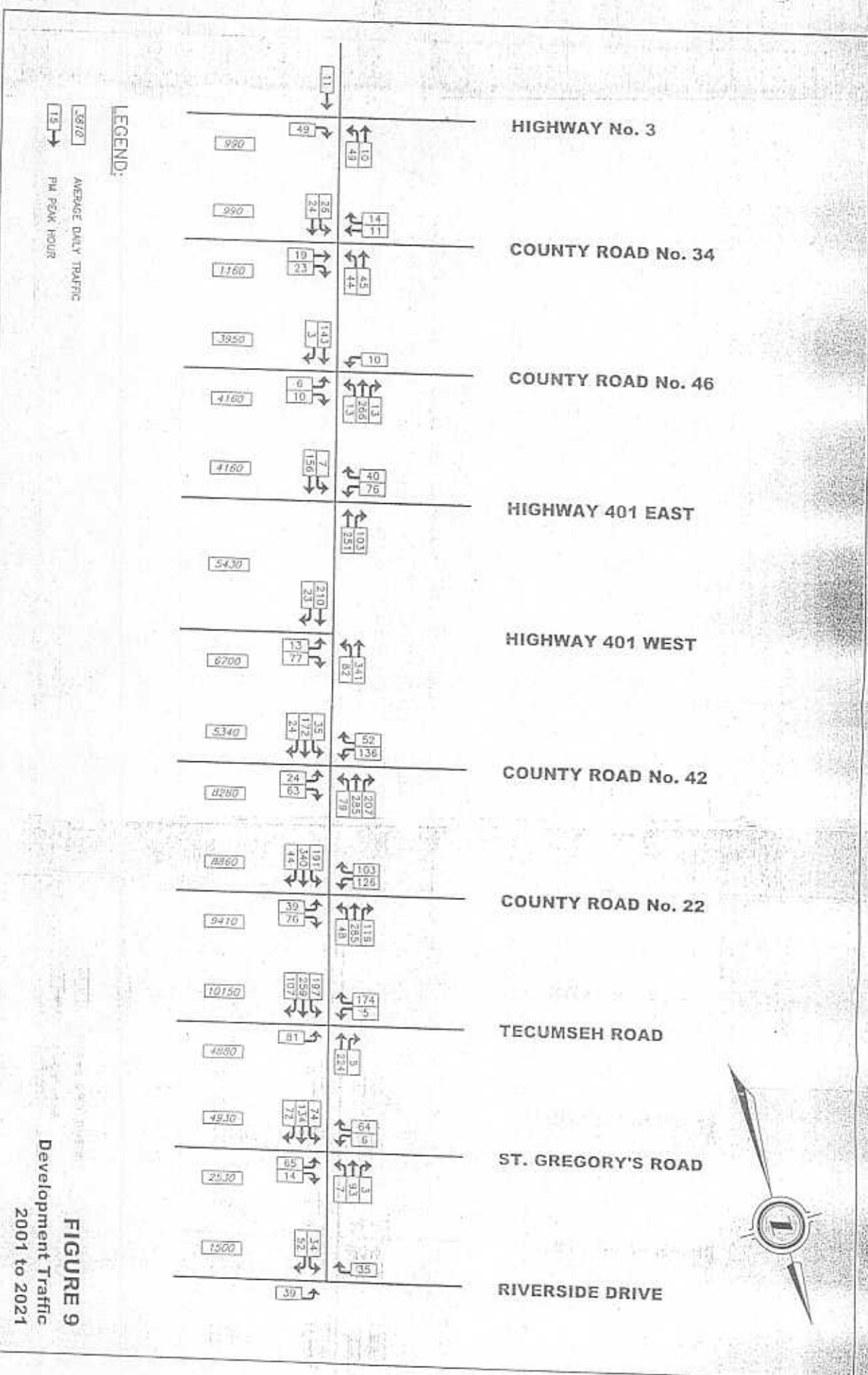


**LEGEND:**  
 AVERAGE DAILY TRAFFIC  
 PM PEAK HOUR



**FIGURE 8**  
 Development Traffic  
 2001 to 2011





**FIGURE 9**  
 Development Traffic  
 2001 to 2021



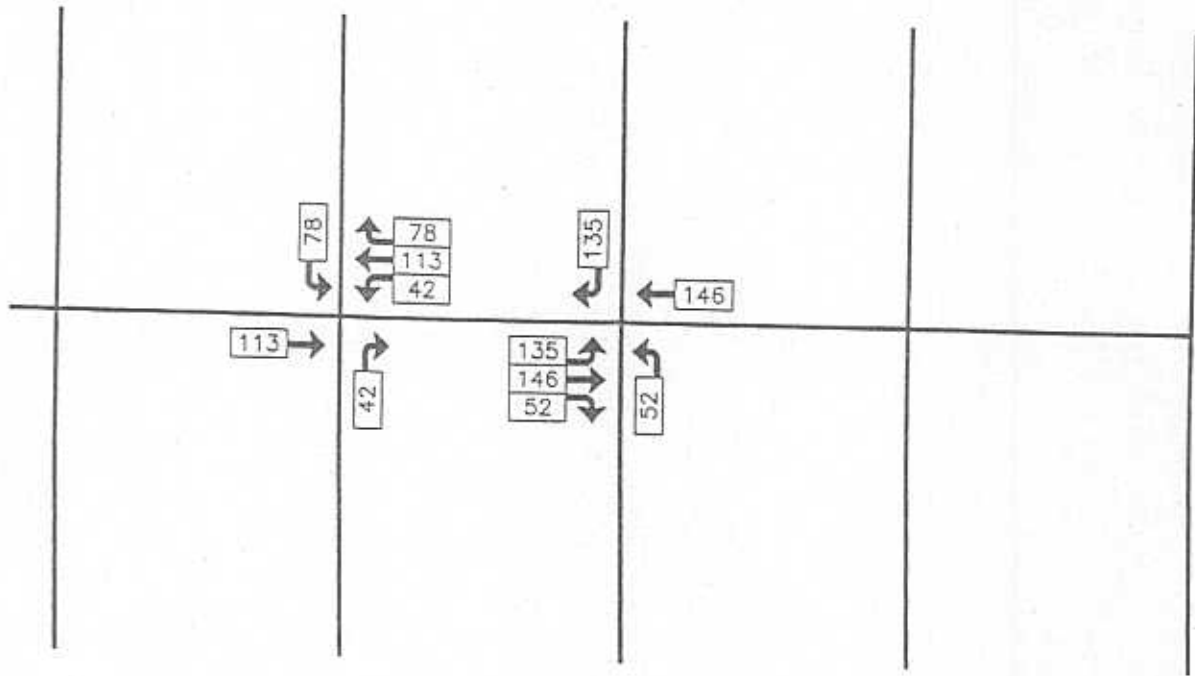
COUNTY ROAD No. 42

COUNTY ROAD No. 22

TECUMSEH ROAD

ST. GREGORY'S ROAD

RIVERSIDE DRIVE



**FIGURE 10**  
Development Traffic  
Saturday Peak Hour  
2001 to 2006



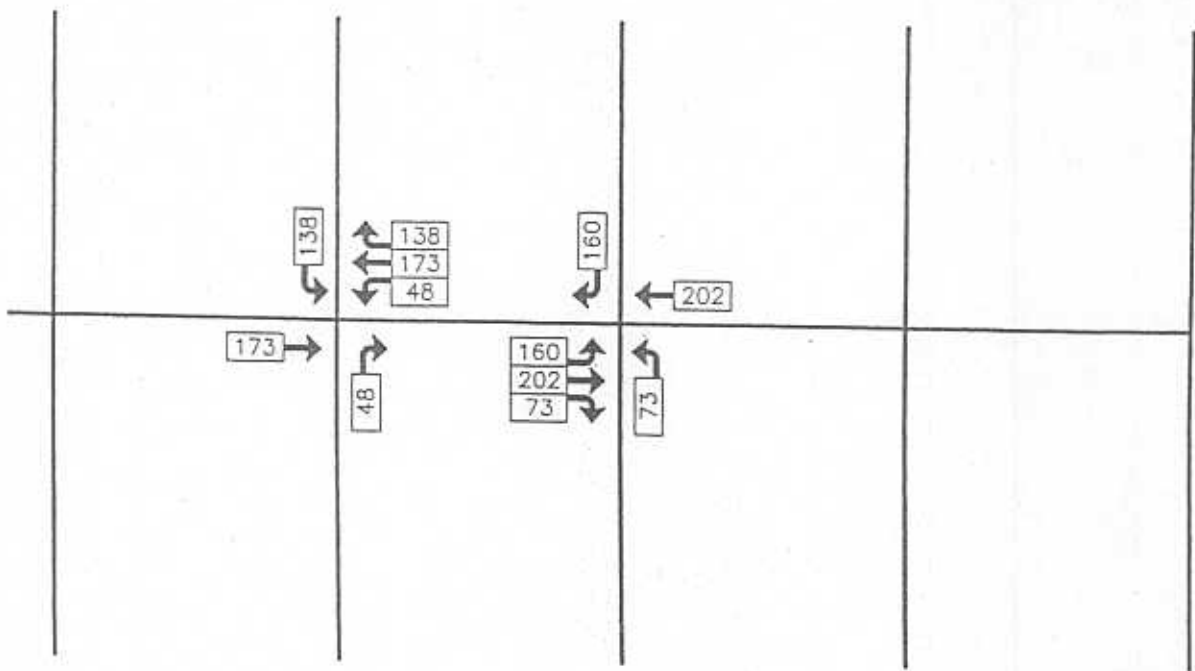
COUNTY ROAD No. 42

COUNTY ROAD No. 22

TECUMSEH ROAD

ST. GREGORY'S ROAD

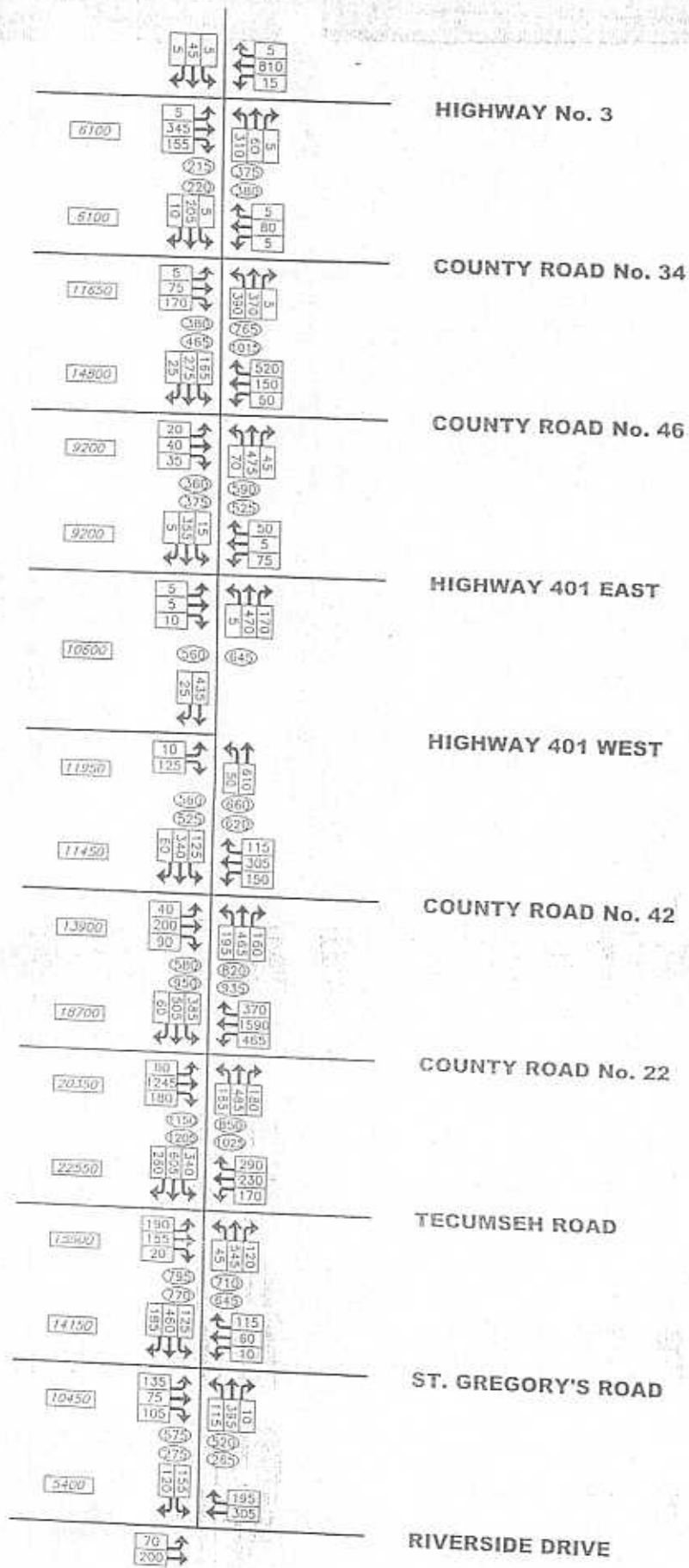
RIVERSIDE DRIVE



**FIGURE 11**  
Development Traffic  
Saturday Peak Hour  
2001 to 2011

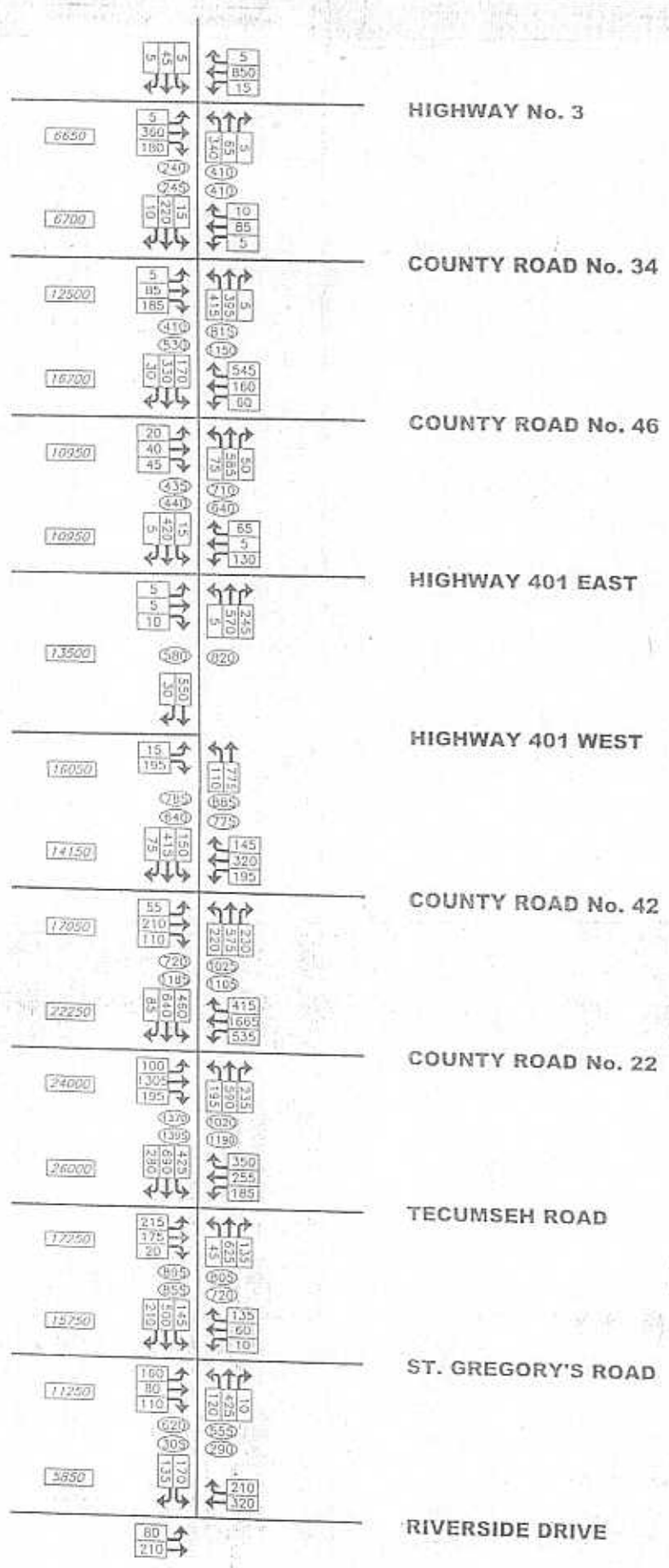
AVERAGE DAILY TRAFFIC
   
 PM PEAK HOUR

LEGEND:



**FIGURE 12**  
 Total Traffic  
 2006

LEGEND:  
 [3970] AVERAGE DAILY TRAFFIC  
 [15] → PM PEAK HOUR



**FIGURE 13**  
 Total Traffic  
 2011

LEGEND:  
 [3610] AVERAGE DAILY TRAFFIC  
 [15] PM PEAK HOUR

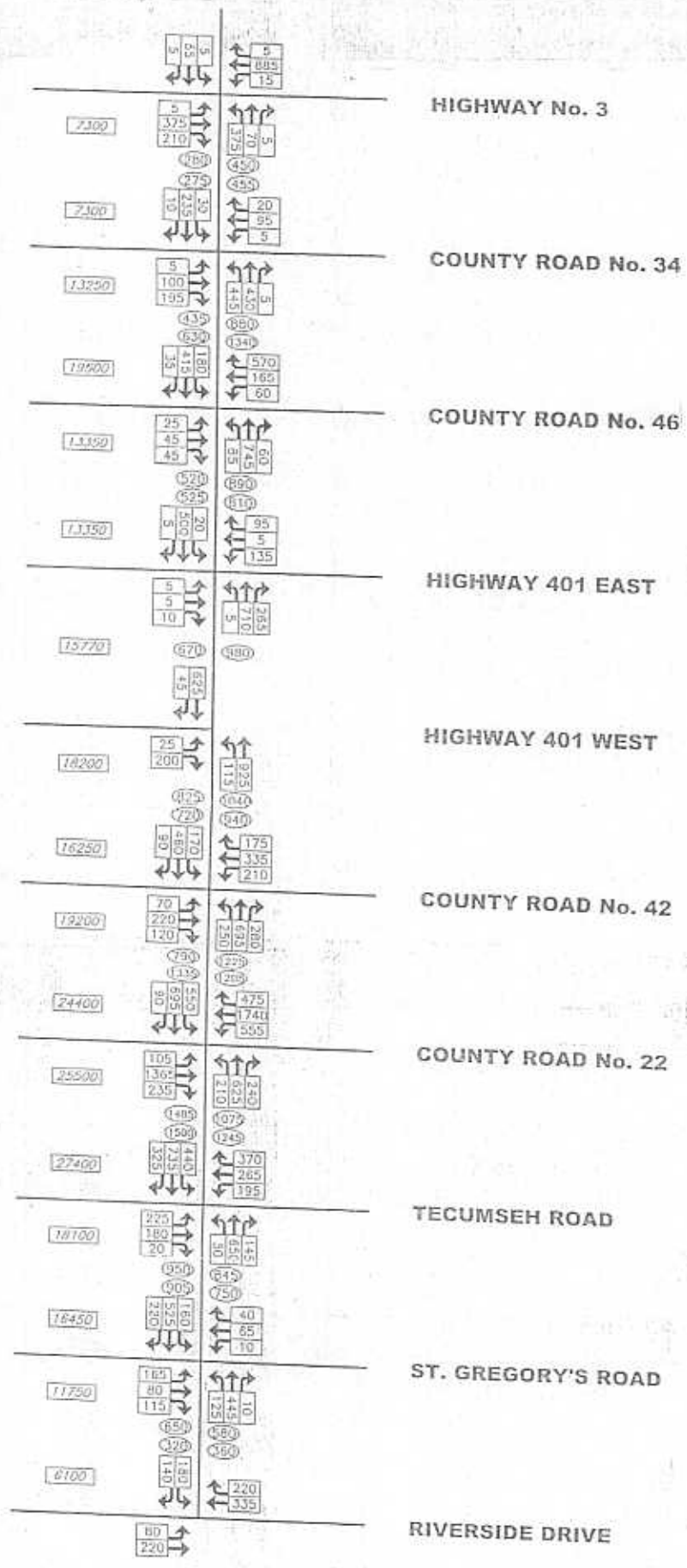


FIGURE 14  
 Total Traffic  
 2021

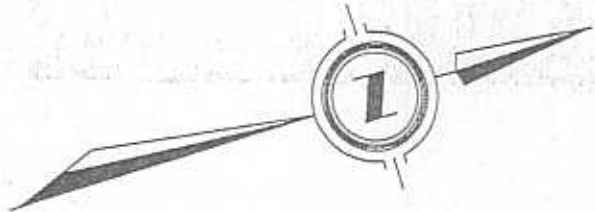
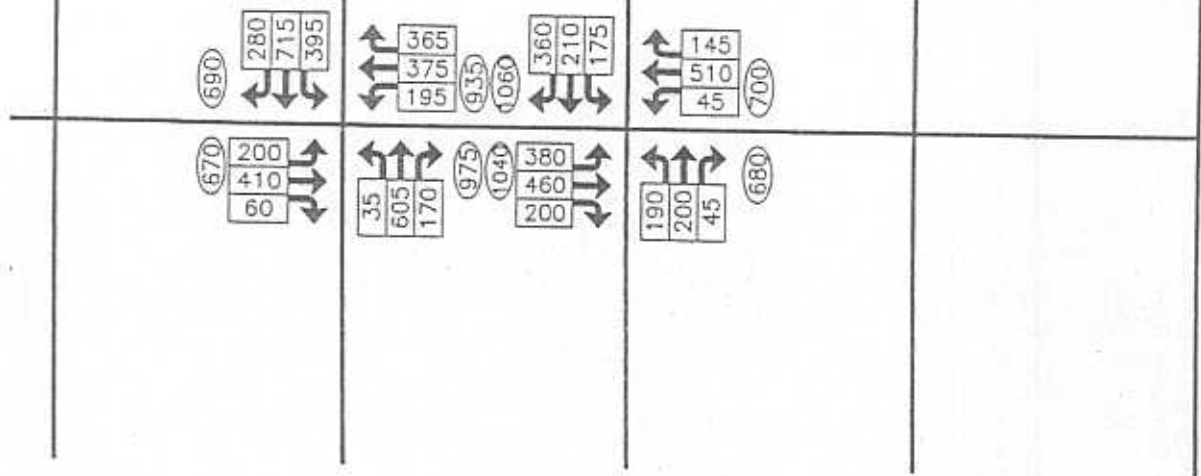
COUNTY ROAD No. 42

COUNTY ROAD No. 22

TECUMSEH ROAD

ST. GREGORY'S ROAD

RIVERSIDE DRIVE



**FIGURE 15**  
Total Traffic  
Saturday Peak Hour  
2006



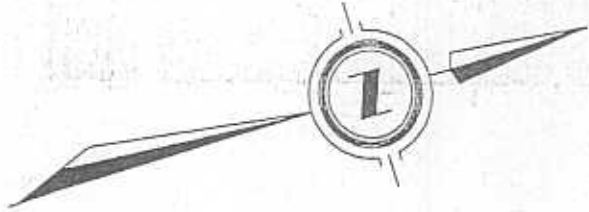
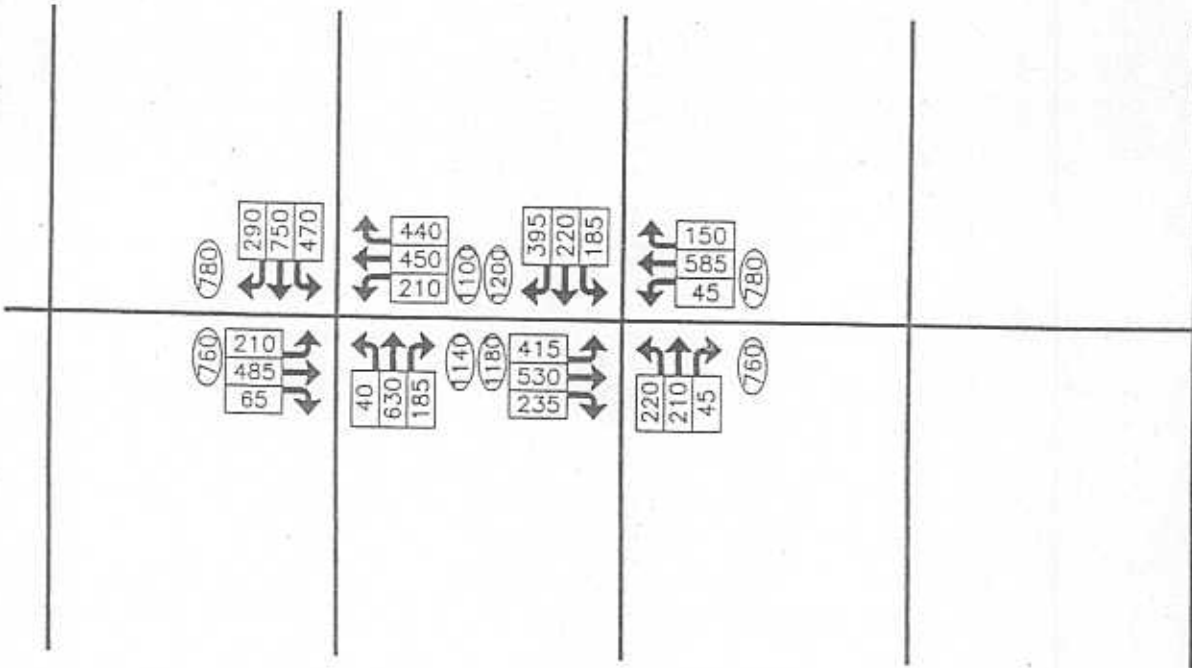
COUNTY ROAD No. 42

COUNTY ROAD No. 22

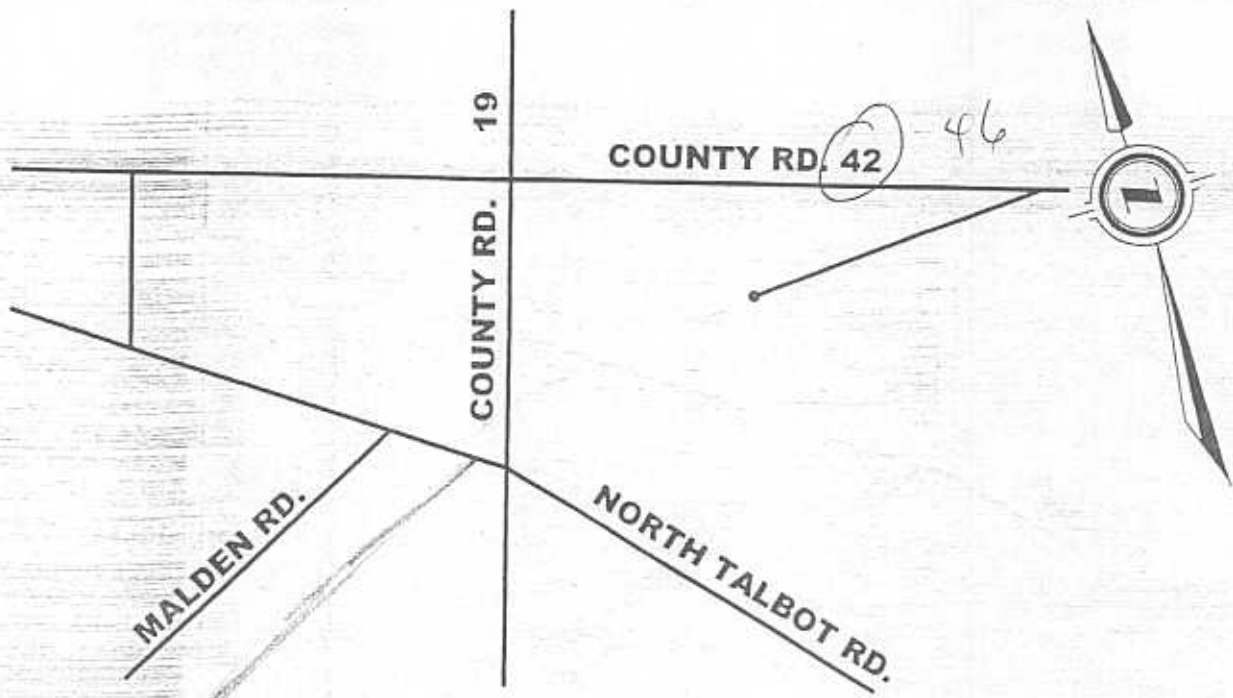
TECUMSEH ROAD

ST. GREGORY'S ROAD

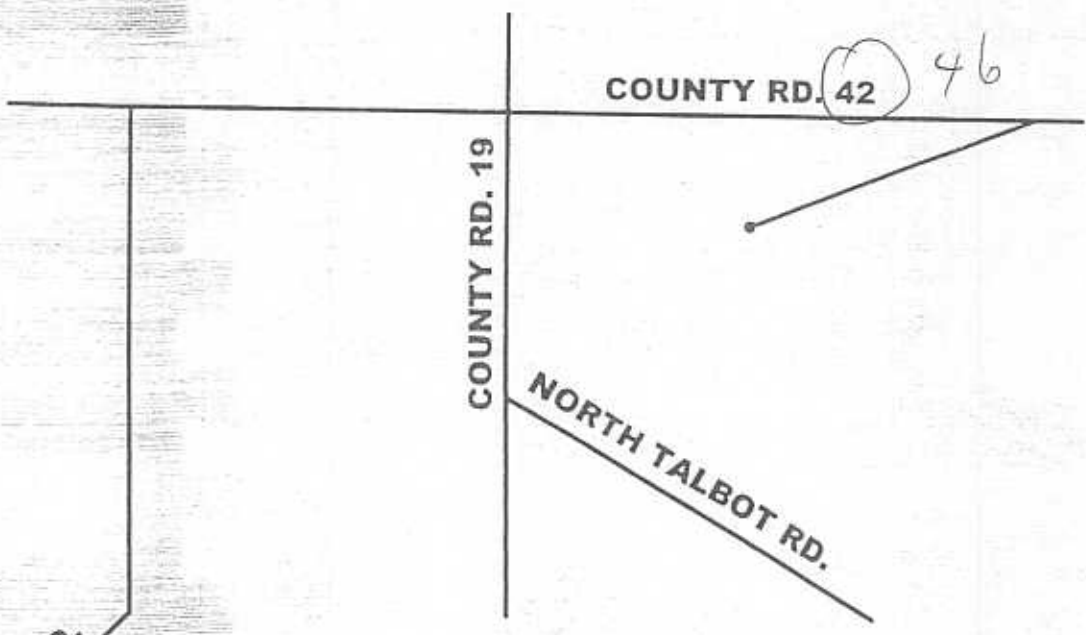
RIVERSIDE DRIVE



**FIGURE 16**  
Total Traffic  
Saturday Peak Hour  
2011



**ALTERNATIVE 1**



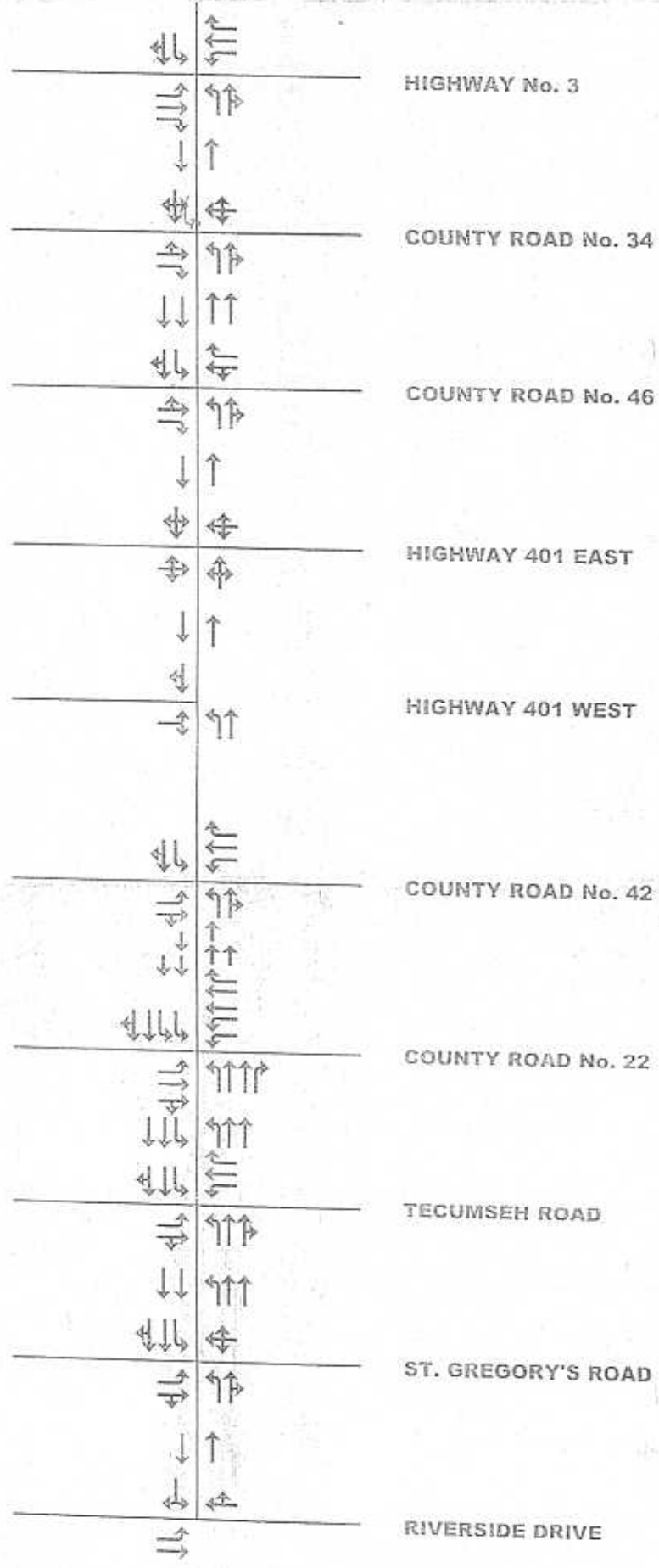
**ALTERNATIVE 2**

**FIGURE 17**

**Alternative Intersection Treatments  
County Road 19 at North Talbot Road**

 EXCLUSIVE TURN LANE  
 THROUGH LANE  
 COMBINED THROUGH AND TURNING LANE

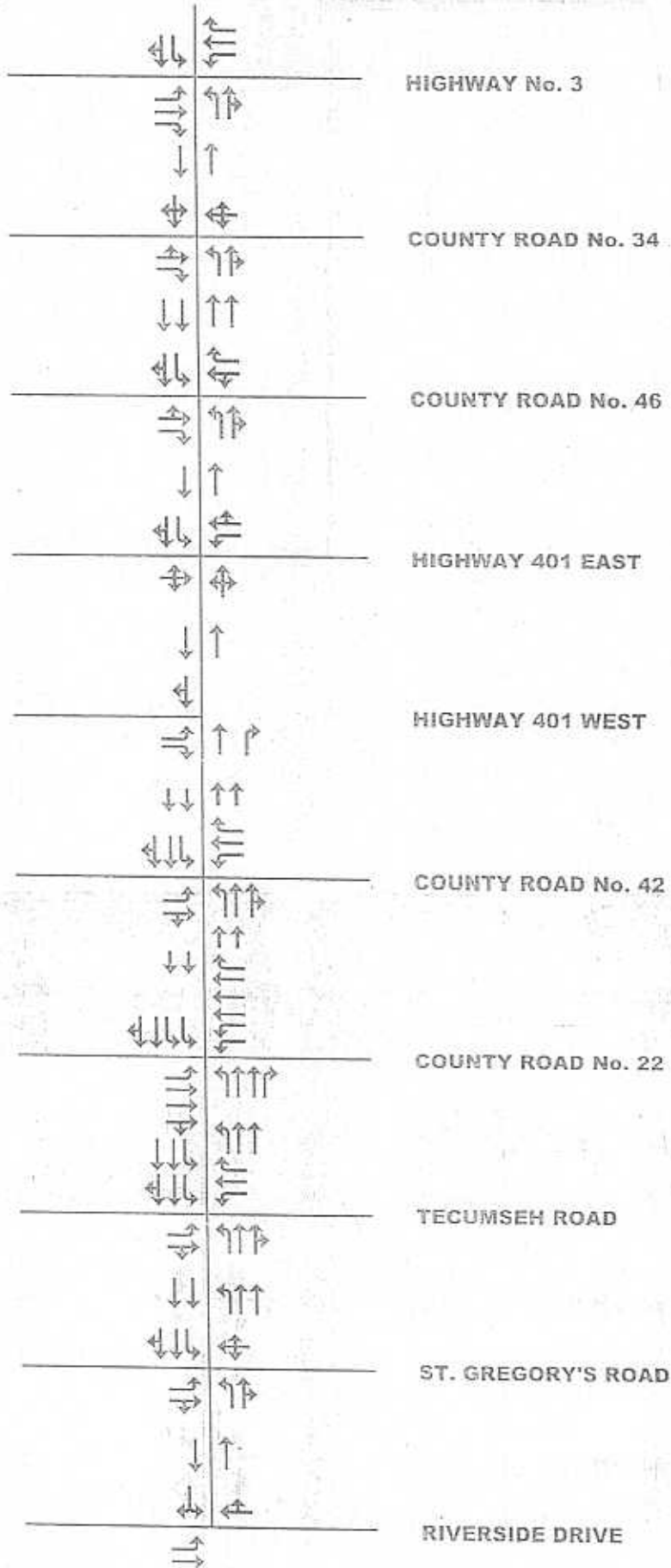
LEGEND:






**FIGURE 18**  
 Proposed Lane Configuration  
 2006

**LEGEND:**

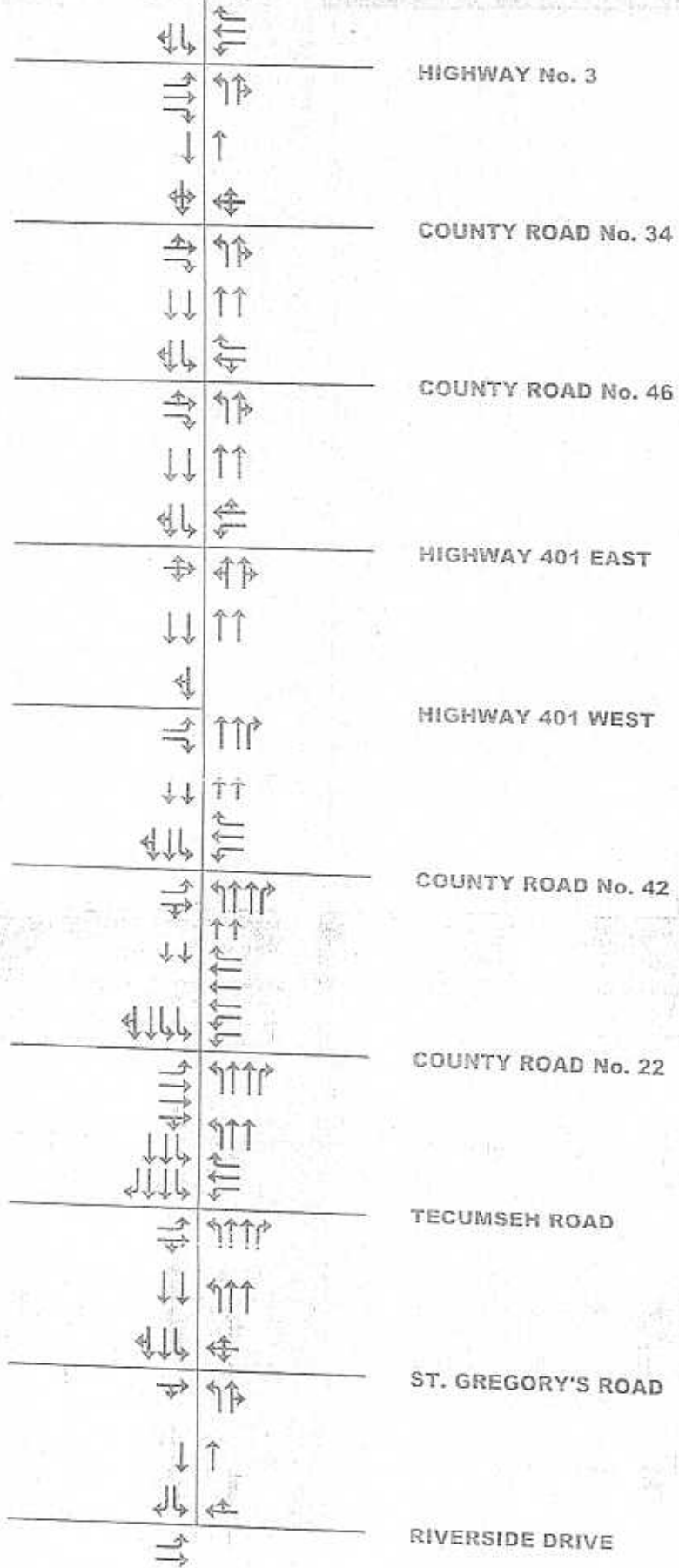
- ↔ EXCLUSIVE TURN LANE
- THROUGH LANE
- ↔ COVERED THROUGH AND TURNING LANE



**FIGURE 19**  
Proposed Lane Configuration  
2011

 EXCLUSIVE TURN LANE  
 THROUGH LANE  
 COMBINED THROUGH AND TURNING LANE

**LEGEND:**



**FIGURE 20**  
 Proposed Lane Configuration  
 2021



APPENDIX A

BACKGROUND REPORTS

## BACKGROUND REPORTS

1. Tecumseh Village Estates, Highway 2 at Manning Road, Traffic Impact Study, DS-Lea Associates, June 1996.
2. Reconstruction of Riverside Drive and Manning Road Intersection, A.A.Boscariol & Associates, May 1997.
3. Transportation Super Mall, Manning Road and Highway 401, Traffic Impact Study, F.R.Berry & Associates, August 1997.
4. Proposed Commercial Development, Manning Road and Lanoue Street, Traffic Impact Study, F.R.Berry & Associates, September 1997.
5. Traffic and Signal Timing Study, Intersections of County Road 22 with Banwell Road, Lesperance Road and Manning Road, F.R.Berry & Associates, June 1998.
6. Lakeshore Town Centre, Traffic Access Study, F.R.Berry & Associates, July 1998.
7. Kenney Plaza Access to Manning Road, F.R.Berry & Associates, April 1999.
8. Access to Jamsyl Business Park from County Road 22, F.R.Berry & Associates, August 1999.
9. Lakewood Golf Club Access, F.R. Berry & Associates, September 1999.
10. Proposed Commercial Development, County Road 19 and County Road 42 (southwest corner) F.R.Berry & Associates, September 1999.
11. Proposed Commercial Development, County Road 19 and County Road 42 (northwest corner), F.R.Berry & Associates, January 2000.
12. Lakewood Condominiums Access, F.R.Berry & Associates, March 2000.
13. Petrovec Development, County Road 22 and County Road 19, Traffic Access Study, F.R.Berry & Associates, August 2000.
14. Lakeshore Estates Phase 1 Traffic Access, F.R.Berry & Associates, January 2001.
15. Maidstone Hamlet Secondary Plan, Town of Tecumseh, (on-going).

APPENDIX B  
LEVEL OF SERVICE

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Riverside Drive  
 Major Street Direction.... EW  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... AM Peak Hour June 5, 2001  
 Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	1	1	0	1	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		172	99	54	232		84		29			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				10			5		0			
CV's (%)				0			0		0			
PCE's				1.05			1.03		1.00			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street			NB	SB
Conflicting Flows: (vph)		233		
Potential Capacity: (pcph)		1055		
Movement Capacity: (pcph)		1055		
Prob. of Queue-Free State:		0.97		
Step 2: LT from Major Street			WB	EB
Conflicting Flows: (vph)		285		
Potential Capacity: (pcph)		1254		
Movement Capacity: (pcph)		1254		
Prob. of Queue-Free State:		0.95		
Step 4: LT from Minor Street			NB	SB
Conflicting Flows: (vph)		534		
Potential Capacity: (pcph)		520		
Major LT, Minor TH				
Impedance Factor:		0.95		
Adjusted Impedance Factor:		0.95		
Capacity Adjustment Factor				
due to Impeding Movements		0.95		
Movement Capacity: (pcph)		495		

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	90	495					
NB R	31	1055	573	8.0	0.9	B	8.0
WB L	60	1254		3.0	0.0	A	0.6

Intersection Delay = 1.6 sec/veh



Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Riverside Drive  
 Major Street Direction.... EW  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM Peak Hour June 4, 2001  
 Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	1	1	0	1	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		290	159	36	192		128		77			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				11			1		3			
CV's (%)				0			0		0			
PCE's				1.06			1.01		1.02			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street			NB	SB
Conflicting Flows: (vph)			388	
Potential Capacity: (pcph)			881	
Movement Capacity: (pcph)			881	
Prob. of Queue-Free State:			0.91	
Step 2: LT from Major Street			WB	EB
Conflicting Flows: (vph)			472	
Potential Capacity: (pcph)			1021	
Movement Capacity: (pcph)			1021	
Prob. of Queue-Free State:			0.96	
Step 4: LT from Minor Street			NB	SB
Conflicting Flows: (vph)			628	
Potential Capacity: (pcph)			458	
Major LT, Minor TH				
Impedance Factor:			0.96	
Adjusted Impedance Factor:			0.96	
Capacity Adjustment Factor				
due to Impeding Movements			0.96	
Movement Capacity: (pcph)			440	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	136	440	>				
NB R	82	881	>	11.1	2.2	C	11.1
WB L	40	1021		3.7	0.0	A	0.6

Intersection Delay = 2.7 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Riverside Drive  
 Major Street Direction.... EW  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM Peak Hour 2006  
 Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	1	1	0	1	0	0	0	0	0
Stop/Yield			N			N						
Volumes		305	195	70	200		155		120			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				4			1		3			
CV's (%)				0			0		0			
PCE's				1.02			1.00		1.01			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street			NB	SB
Conflicting Flows: (vph)			424	
Potential Capacity: (pcph)			844	
Movement Capacity: (pcph)			844	
Prob. of Queue-Free State:			0.85	
Step 2: LT from Major Street			WB	EB
Conflicting Flows: (vph)			526	
Potential Capacity: (pcph)			963	
Movement Capacity: (pcph)			963	
Prob. of Queue-Free State:			0.92	
Step 4: LT from Minor Street			NB	SB
Conflicting Flows: (vph)			708	
Potential Capacity: (pcph)			412	
Major LT, Minor TH				
Impedance Factor:			0.92	
Adjusted Impedance Factor:			0.92	
Capacity Adjustment Factor				
due to Impeding Movements			0.92	
Movement Capacity: (pcph)			380	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LDS	Approach Delay (sec/veh)
NB L	163	380 >					
NB R	127	844 >	500	17.0	4.2	C	17.0
WB L	75	963		4.1	0.2	A	1.1

Intersection Delay = 4.7 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2088  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Riverside Drive  
 Major Street Direction... EW  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM Peak Hour 2011  
 Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	1	1	0	1	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		320	210	80	210		170		135			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				4			1		3			
CV's (%)				0			0		0			
PCE's				1.02			1.00		1.01			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40



Worksheet for TWSC Intersection

-----		
Step 1: RT from Minor Street	NB	SB
-----		
Conflicting Flows: (vph)	448	
Potential Capacity: (pcph)	821	
Movement Capacity: (pcph)	821	
Prob. of Queue-Free State:	0.83	
-----		
Step 2: LT from Major Street	WB	EB
-----		
Conflicting Flows: (vph)	558	
Potential Capacity: (pcph)	929	
Movement Capacity: (pcph)	929	
Prob. of Queue-Free State:	0.91	
-----		
Step 4: LT from Minor Street	NB	SB
-----		
Conflicting Flows: (vph)	752	
Potential Capacity: (pcph)	388	
Major LT, Minor TH		
Impedance Factor:	0.91	
Adjusted Impedance Factor:	0.91	
Capacity Adjustment Factor		
due to Impeding Movements	0.91	
Movement Capacity: (pcph)	352	
-----		

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
-----							
NB L	179	352 >					
NB R	143	821 >	472	23.6	6.1	D	23.6
WB L	66	929		4.3	0.3	A	1.2

Intersection Delay = 6.7 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Riverside Drive  
 Major Street Direction.... EW  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM Peak Hour 2021  
 Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	1	1	0	1	0	1	0	0	0
Stop/Yield												
Volumes		335	220	80	220		180		140			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MD's (%)				0			0		0			
SU/RV's (%)				4			1		3			
CV's (%)				0			0		0			
PCE's				1.02			1.00		1.01			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	469	
Potential Capacity: (pcph)	801	
Movement Capacity: (pcph)	801	
Prob. of Queue-Free State:	0.82	
Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	585	
Potential Capacity: (pcph)	902	
Movement Capacity: (pcph)	902	
Prob. of Queue-Free State:	0.90	
Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	785	
Potential Capacity: (pcph)	372	
Major LT, Minor TH		
Impedance Factor:	0.90	
Adjusted Impedance Factor:	0.90	
Capacity Adjustment Factor due to Impeding Movements	0.90	
Movement Capacity: (pcph)	337	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	189	337		24.1	3.8	D	16.0
NB R	148	801		5.5	0.8	B	
WB L	86	902		4.4	0.3	A	1.2

Intersection Delay = 4.6 sec/veh

Streets: (E-W) St. Gregory's Road (N-S) County Road 19  
 Analyst: Frb File Name: 01158GAX.HC9  
 Area Type: Other S-27-1 60min  
 Comment: AM Peak Hour June 5, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		1	1	<	1	1	<	1	1	<
Volumes	2	60	45	163	51	44	22	177	133	89	343	6
Lane W (ft)	11.0			10.0 11.0			10.0 11.0			10.0 11.0		
RTOR Vols	0			0			0			0		
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*				NB Left	*		
EB Thru	*				NB Thru	*		
EB Right	*				NB Right	*		
EB Peds	*				NB Peds	*		
WB Left	*				SB Left	*		
WB Thru	*				SB Thru	*		
WB Right	*				SB Right	*		
WB Peds	*				SB Peds	*		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0A				45.0A			
Yellow/AR	5.0				5.0			
Cycle Length:	80 secs Phase combination order: #1 #5							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LTR	499	1479	0.224	0.338	12.3	B	12.3	B
WB	L	391	1159	0.440	0.338	13.8	B	13.2	B
	TR	539	1596	0.186	0.338	12.1	B		
NB	L	330	561	0.070	0.587	4.6	A	5.5	B
	TR	951	1619	0.343	0.587	5.6	B		
SB	L	409	697	0.230	0.587	5.1	B	5.5	B
	TR	1035	1762	0.355	0.587	5.6	B		

Intersection Delay = 7.9 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.386

Streets: (E-W) St. Gregory's Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115SGPX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: PM Peak Hour June 4, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		1	1	<	1	1	<	1	1	<
Volumes	4	56	67	87	71	86	74	340	131	103	304	3
Lane W (ft)	11.0			10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols	0			0			0			0		
Lost Time	13.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*				NB Left	*		
Right	*				Thru	*		
Peds	*				Right	*		
WB Left	*				Peds	*		
Thru	*				SB Left	*		
Right	*				Thru	*		
Peds	*				Right	*		
NB Right					Peds	*		
SB Right					EB Right			
Green	25.0A				WB Right			
Yellow/AR	5.0				Green	45.0A		
Cycle Length:	80 secs				Yellow/AR	5.0		

Phase combination order: #1 #5

Intersection Performance Summary										
Approach:	Lane Group:	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Delay	LOS
WB	L	383		1136	0.240	0.338	12.4	B	12.6	B
	TR	568		1683	0.292	0.338	12.7	B		
NB	L	417		709	0.187	0.587	5.0	A	6.2	B
	TR	1023		1741	0.485	0.587	6.4	B		
SB	L	230		392	0.469	0.587	7.2	B	5.9	B
	TR	1067		1816	0.303	0.587	5.4	B		

Intersection Delay = 7.9 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.415



Streets: (E-W) St. Gregory's Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115SGP6.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		1	1	<	1	1	<	1	1	<
Volumes	10	60	115	135	75	105	125	460	185	115	395	10
Lane W (ft)		11.0		10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*							
Right	*							
Peds	*							
WB Left	*							
Thru	*							
Right	*							
Peds	*							
NB Right								
SB Right								
Green	25.0A				13.0A	40.0A		
Yellow/AR	5.0				2.0	5.0		
Cycle Length:	90 secs Phase combination order: #1 #5 #6							

Intersection Performance Summary

Lane	Group:	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LDS	Approach:	Delay	LDS
EB	LTR	432		1441	0.451	0.300	17.0	C		17.0	C
WB	L	250		832	0.569	0.300	19.4	C		17.6	C
	TR	502		1673	0.379	0.300	16.3	C			
NB	L	370		1668	0.357	0.633	5.6	B		16.8	C
	TR	812		1739	0.837	0.467	18.9	C			
SB	L	305		1685	0.397	0.633	8.8	B		10.7	B
	TR	845		1811	0.505	0.467	11.2	B			

Intersection Delay = 15.2 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.711

Streets: (E-W) St. Gregory's Road (N-S) County Road 19  
 Analyst: Frb File Name: 01156SP1.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		1	1	<	1	1	<	1	1	<
Volumes	10	60	135	160	80	110	145	500	210	120	425	10
Lane W (ft)		11.0		10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations								
	1	2	3	4	5	6	7	8	
EB Left	*								
EB Thru	*				NB Left	*	*		
EB Right	*				Thru		*		
EB Peds	*				Right		*		
WB Left	*				Peds		*		
WB Thru	*				SB Left	*	*		
WB Right	*				Thru		*		
WB Peds	*				Right		*		
NB Right					Peds		*		
SB Right					EB Right				
Green	25.0A				WB Right				
Yellow/AR	5.0				Green	13.0A	40.0A		
Cycle Length:	90 secs	Phase combination order: #1 #5 #6							
					Yellow/AR	2.0	5.0		

Intersection Performance Summary										
Lane	Group:	Mvmts	Cap	Adj Sat	Flow	v/c	g/C	Ratio	Delay	Approach:
EB	LTR		430		1433	0.502	0.300		17.6	C
WB	L		226		752	0.745	0.300		26.8	D
	TR		502		1674	0.398	0.300		16.5	C
NB	L		341		1668	0.449	0.633		6.6	B
	TR		811		1737	0.922	0.467		25.9	D
SB	L		305		1685	0.413	0.633		9.9	B
	TR		846		1812	0.542	0.467		11.6	B

Intersection Delay = 18.6 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.828

Streets: (E-W) St. Gregory's Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115SGP2.HCS  
 Area Type: Other 3-19-2 50min  
 Comment: PM Peak Hour 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		1	1	<	1	1	<	1	1	<
Volumes	10	65	140	165	80	115	160	525	220	125	445	10
Lane W (ft)	11.0			10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols	0			0			0			0		
Lost Time	13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	3.00

		Signal Operations								
Phase Combination		1	2	3	4	5	6	7	8	
EB	Left	*								
	Thru	*								
	Right	*								
	Peds	*								
WB	Left	*								
	Thru	*								
	Right	*								
	Peds	*								
NB	Right									
SB	Right									
Green		25.0A								
Yellow/AR		5.0								
Cycle Length:		90 secs	Phase combination order: #1 #5 #6							

Intersection Performance Summary									
Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LTR	431	1435	0.525	0.300	17.9	C	17.9	C
WB	L	215	715	0.811	0.300	32.6	D	23.9	C
	TR	501	1671	0.409	0.300	16.6	C		
NB	L	325	1668	0.517	0.633	7.7	B	28.5	D
	TR	811	1737	0.968	0.467	33.0	D		
SB	L	305	1685	0.433	0.633	10.7	B	11.6	B
	TR	846	1812	0.566	0.467	11.9	E		

Intersection Delay = 21.9 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.884

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 08-30-1981  
 Center For Microcomputers In Transportation

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115TEAX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: AM Peak Hour, June 6, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	<	1	1	<	1	1	<	1	1	<
Volumes	109	169	154	150	253	26	165	260	75	25	327	111
Lane W (ft)	10.0	11.0		10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			30			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*						
Thru		*						
Right		*						
Peds		*						
WB Left	*	*						
Thru		*						
Right		*						
Peds		*						
NB Right								
SB Right								
Green	8.0A	29.0A						
Yellow/AR	2.0	5.0						

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	L	245	1560	0.469	0.410	13.9	B	20.2	C
	TR	494	1592	0.689	0.310	22.3	C		
WB	L	223	1636	0.709	0.410	20.3	C	19.6	C
	TR	545	1758	0.538	0.310	19.3	C		
NB	L	224	1574	0.777	0.530	21.3	C	13.4	B
	TR	850	1603	0.378	0.530	9.1	B		
SB	L	232	565	0.112	0.410	11.8	B	17.3	C
	TR	676	1650	0.681	0.410	17.6	C		

Intersection Delay = 17.5 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.743

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 011STEPX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: PM Peak Hour, June 6, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	<	1	1	<	1	1	<	1	1	<
Volumes	152	221	168	128	148	17	214	415	190	43	371	111
Lane W (ft)	10.0	11.0		10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			90			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*	*						
Thru		*			NB Left	*	*	
Right		*			Thru	*	*	
Peds		*			Right	*	*	
WB Left	*	*			Peds	*	*	
Thru		*			SB Left	*	*	
Right		*			Thru	*	*	
Peds		*			Right	*	*	
NB Right					Peds	*	*	
SB Right					EB Right			
Green	8.0A	29.0A			WB Right			
Yellow/AR	2.0	5.0			Green	15.0A	34.0A	
Cycle Length: 100 secs	Phase combination order: #1 #2 #5 #6				Yellow/AR	2.0	5.0	

Intersection Performance Summary									
Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:		
							Flow	Ratio	Delay
EB	L	395	0.405	0.410	13.0	B	21.6	C	
	TR	532	0.771	0.310	24.9	C			
WB	L	190	0.711	0.410	21.8	C	19.2	C	
	TR	555	0.314	0.310	17.1	C			
NB	L	301	0.748	0.530	21.5	C	14.1	B	
	TR	935	0.579	0.530	11.0	B			
SB	L	92	0.490	0.360	19.3	C	24.3	C	
	TR	620	0.820	0.360	24.8	C			

Intersection Delay = 19.3 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.843



Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115TEP6.H09  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	<	1	1	1	1	1	1
Volumes	170	230	290	190	155	20	340	605	260	45	545	120
Lane W (ft)	10.0	11.0	12.0	10.0	11.0		10.0	11.0	12.0	10.0	11.0	12.0
RTOR Vols			0			0			90			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*	*						
EB Thru		*						
EB Right		*						
EB Peds		*						
WB Left	*	*						
WB Thru		*						
WB Right		*						
WB Peds		*						
NB Right								
SB Right								
Green	11.0A	30.0A			23.0A	42.0A		
Yellow/AR	2.0	5.0			2.0	5.0		
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Lane	Group:	Intersection Performance Summary							Approach:	
		Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Delay	LOS
EB	L	352		1685	0.509	0.375	18.3	C	25.2	D
	T	490		1837	0.494	0.267	24.7	C		
	R	425		1595	0.717	0.267	29.7	D		
WB	L	289		1685	0.692	0.375	22.6	C	23.1	C
	TR	477		1787	0.386	0.267	23.5	C		
NB	L	360		1636	0.994	0.575	59.7	E	25.7	D
	T	1045		1818	0.609	0.575	11.5	B		
	R	917		1595	0.195	0.575	7.9	B		
SB	L	78		212	0.605	0.367	28.5	D	29.3	D
	T	654		1783	0.878	0.367	32.1	D		
	R	579		1579	0.218	0.367	16.9	C		
Intersection Delay = 26.1 sec/veh Intersection LOS = D										
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.921										

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115TEPS.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	<	1	2	<	1	2	<
Volumes	170	230	290	190	155	20	340	605	260	45	545	120
Lane W (ft)	10.0	11.0	12.0	10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			90			0
Lost Time	13.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*	*	
Thru		*			Thru	*	*	
Right		*			Right	*	*	
Peds		*			Peds		*	
WB Left	*	*			SB Left		*	
Thru		*			Thru		*	
Right		*			Right		*	
Peds		*			Peds		*	
NB Right					EB Right			
SB Right					WB Right			
Green	11.0A	30.0A			Green	23.0A	42.0A	
Yellow/AR	2.0	5.0			Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Intersection Performance Summary

	Lane	Group:	Adj Sat		v/c	g/C	Delay	LOS	Approach:		
			Mynts	Cap					Flow	Ratio	Delay
EB	L		352		1685	0.509	0.375	18.3	C	25.2	D
	T		490		1837	0.494	0.267	24.7	C		
	R		425		1595	0.717	0.267	29.7	D		
WB	L		289		1685	0.692	0.375	22.6	C	23.1	C
	TR		477		1787	0.386	0.267	23.5	C		
NB	L		377		1636	0.950	0.575	45.2	E	19.9	C
	TR		2022		3516	0.424	0.575	9.3	B		
SB	L		97		265	0.484	0.367	21.8	C	20.3	C
	TR		1272		3469	0.578	0.367	20.2	C		

Intersection Delay = 21.6 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.815

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115STEP1.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volumes	185	255	350	215	175	20	425	690	280	45	625	135
Lane W (ft)	10.0	11.0	11.0	10.0	11.0		10.0	11.0	11.0	10.0	11.0	11.0
RTOR Vols			60			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination		Signal Operations											
		1	2	3	4	5	6	7	8				
EB	Left	*	*										
	Thru		*										
	Right		*										
	Peds		*										
WB	Left	*	*										
	Thru		*										
	Right		*										
	Peds		*										
NB	Right		*										
SB	Right												
Green		10.0A	26.0A										
Yellow/AR		2.0	5.0										
Cycle Length: 120 secs		Phase combination order: #1 #2 #5 #6											

Intersection Performance Summary										
Lane	Group:	Mvmts	Cap	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
									Flow	Ratio
EB	L		281	1685	0.694	0.333	25.8	D		
	T		429	1837	0.625	0.233	28.7	D	32.5	D
	R		350	1541	0.848	0.233	40.2	E		
WB	L		222	1685	1.018	0.333	75.5	F	52.2	E
	TR		418	1790	0.491	0.233	26.5	D		
NB	L		442	1636	1.011	0.617	60.5	F	25.7	D
	T		1121	1818	0.648	0.617	10.4	B		
	R		950	1541	0.244	0.617	6.7	B		
SB	L		75	212	0.619	0.358	30.0	D	51.5	E
	T		639	1783	1.030	0.358	60.3	F		
	R		547	1526	0.260	0.358	17.7	C		

Intersection Delay = 36.9 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 1.066

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 011STEP1.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	<	1	2	<	1	2	<
Volumes	185	255	350	215	175	20	425	690	280	45	625	135
Lane W (ft)	10.0	11.0	11.0	10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			60			0			60			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*						
EB Thru		*						
EB Right		*						
EB Peds		*						
WB Left		*						
WB Thru		*						
WB Right		*						
WB Peds		*						
NB Right								
SB Right								
Green	13.0A	25.0A			32.0A	35.0A		
Yellow/AR	2.0	5.0			2.0	5.0		
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Intersection Performance Summary

	Lane	Group:	Adj Sat			Delay	LOS	Approach:			
			Mvmts	Cap	Flow			v/c	Ratio	Delay	LOS
EB	L		323		1685	0.604	0.358	20.8	C	31.3	D
	T		429		1837	0.625	0.233	28.7	D		
	R		360		1541	0.848	0.233	40.2	E		
WB	L		264		1685	0.856	0.358	35.3	D	31.1	D
	TR		418		1790	0.491	0.233	26.5	D		
NB	L		483		1636	0.925	0.592	39.3	D	18.5	C
	TR		2073		3503	0.485	0.592	9.2	B		
SB	L		65		212	0.719	0.308	43.9	E	28.1	D
	TR		1070		3470	0.785	0.308	27.2	D		

Intersection Delay = 25.2 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.887

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 011STEP2.HC9  
 Area Type: Other 3-19-2 50min  
 Comment: PM Peak Hour, 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	195	265	370	225	180	20	440	735	325	50	650	145
Lane W (ft)	10.0	11.0	11.0	10.0	11.0		10.0	11.0	11.0	10.0	11.0	11.0
RTOR Vols			60			0			60			0
Lost Time	13.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination		Signal Operations							
		1	2	3	4	5	6	7	8
EB	Left	*	*						
	Thru		*			NB Left	*	*	
	Right		*			Thru	*	*	
	Peds		*			Right	*	*	
WB	Left	*	*			Peds		*	
	Thru		*			SB Left		*	
	Right		*			Thru		*	
	Peds		*			Right		*	
NB	Right		*			Peds		*	
SB	Right					EB Right			
Green		14.0A	26.0A			WB Right			
Yellow/AR		2.0	5.0			Green	33.0A	31.0A	
Cycle Length:		120	secs	Phase combination order: #1 #2 #5 #6					

Intersection Performance Summary									
	Lane	Group:	Adj Sat	v/c	g/c	Delay	LOS	Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS
EB	L	349	1685	0.587	0.383	19.1	C	29.8	D
	T	459	1937	0.608	0.250	27.4	D		
	R	385	1541	0.846	0.250	38.6	D		
WB	L	284	1685	0.835	0.383	31.2	D	28.4	D
	TR	448	1791	0.469	0.250	25.3	D		
NB	L	496	1636	0.933	0.567	39.8	D	18.4	C
	T	2061	3637	0.394	0.567	9.4	B		
	R	873	1541	0.320	0.567	9.0	B		
SB	L	79	287	0.672	0.275	37.9	D	27.3	D
	T	981	3566	0.732	0.275	27.5	D		
	R	420	1526	0.365	0.275	22.9	C		
Intersection Delay = 24.3 sec/veh Intersection LOS = C									
Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.876									



Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 011STESX.HC9  
 Area Type: Other B-27-1 60min  
 Comment: Sat. Peak Hour, May 26, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	<	1	1	<	1	1	<	1	1	<
Volumes	167	202	215	134	192	42	234	302	145	42	349	138
Lane W (ft)	10.0	11.0		10.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			40			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination		Signal Operations											
		1	2	3	4	5	6	7	8				
EB	Left	*	*			NB	Left	*	*				
	Thru		*				Thru	*	*				
	Right		*				Right	*	*				
	Peds		*				Peds	*	*				
WB	Left	*	*			SB	Left		*				
	Thru		*				Thru		*				
	Right		*				Right		*				
	Peds		*				Peds		*				
NB	Right					EB	Right						
SB	Right					WB	Right						
Green		8.0A	30.0A			Green		15.0A	33.0A				
Yellow/AR		2.0	5.0			Yellow/AR		2.0	5.0				
Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6													

Intersection Performance Summary										
	Lane	Group:	Adj Sat		v/c		Delay	LOS	Approach:	
			Cap	Flow	Ratio	Ratio			Delay	LOS
EB	L		315	1668	0.559	0.420	14.3	B	23.3	C
	TR		536	1676	0.819	0.320	27.0	D		
WB	L		189	1668	0.746	0.420	23.9	C	19.9	C
	TR		572	1787	0.430	0.320	17.7	C		
NB	L		306	1668	0.804	0.520	25.5	D	15.8	C
	TR		908	1747	0.472	0.520	10.2	B		
SB	L		155	442	0.284	0.350	15.4	C	25.6	D
	TR		609	1740	0.841	0.350	26.5	D		
Intersection Delay = 21.0 sec/veh Intersection LOS = C										
Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.871										

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115TES6.H09  
 Area Type: Other 3-20-2 60min  
 Comment: Saturday Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volumes	175	210	360	190	200	45	380	460	200	45	510	145
Lane W (ft)	10.0	11.0	12.0	10.0	11.0		10.0	11.0	12.0	10.0	11.0	12.0
RTDR Vols			60			0			60			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*	*	
Thru		*			Thru	*	*	
Right		*			Right	*	*	
Peds		*			Peds	*	*	
WB Left	*	*			SB Left	*	*	
Thru		*			Thru	*	*	
Right		*			Right	*	*	
Peds		*			Peds	*	*	
NB Right					EB Right			
SB Right					WB Right			
Green	9.0A	30.0A			Green	27.0A	40.0A	
Yellow/AR	2.0	5.0			Yellow/AR	2.0	5.0	

Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane	Group:	Adj Sat				Delay	LOS	Approach:		
			Mvmts	Cap	Flow	v/c			Ratio	Ratio	Delay
EB	L		246		1685	0.748	0.358	28.0	D	28.0	D
	T		490		1837	0.451	0.267	24.2	C		
	R		425		1595	0.743	0.267	30.7	D		
WB	L		284		1685	0.704	0.358	25.5	D	25.5	D
	TR		471		1768	0.547	0.267	25.4	D		
NB	L		414		1636	0.966	0.592	50.1	E	24.7	C
	T		1076		1818	0.450	0.592	9.0	B		
	R		944		1595	0.157	0.592	7.1	B		
SB	L		113		324	0.414	0.350	20.6	C	28.2	D
	T		624		1783	0.861	0.350	31.7	D		
	R		553		1579	0.277	0.350	18.2	C		

Intersection Delay = 26.5 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.869

Streets: (E-W) Tecumseh Road (N-S) County Road 19  
 Analyst: Frb File Name: 0115TES1.HCS  
 Area Type: Other S-20-2 50min  
 Comment: Saturday Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volumes	185	220	395	220	210	45	415	530	235	45	585	150
Lane W (ft)	10.0	11.0	11.0	10.0	11.0		10.0	11.0	11.0	10.0	11.0	11.0
RTOR Vols			60			0			60			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

		Signal Operations							
Phase Combination		1	2	3	4	5	6	7	8
EB	Left	*	*						
	Thru		*						
	Right		*						
	Peds		*						
WB	Left	*	*						
	Thru		*						
	Right		*						
	Peds		*						
NB	Right								
SB	Right								
Green		10.0A	26.0A						
Yellow/AR		2.0	5.0						
Cycle Length: 120 secs		Phase combination order: #1 #2 #5 #8							

Intersection Performance Summary									
	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS
EB	L	222	1685	0.878	0.333	42.9	E	46.6	E
	T	429	1837	0.541	0.233	27.2	D		
	R	360	1541	0.982	0.233	61.5	F		
WB	L	252	1685	0.921	0.333	49.0	E	38.5	D
	TR	413	1770	0.649	0.233	29.3	D		
NB	L	442	1636	0.989	0.617	54.5	E	25.2	D
	T	1121	1818	0.498	0.617	8.5	B		
	R	950	1541	0.194	0.617	6.5	B		
SB	L	87	242	0.542	0.358	24.8	C	38.1	D
	T	639	1783	0.964	0.358	44.3	E		
	R	547	1526	0.289	0.358	17.9	C		

Intersection Delay = 35.5 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.977

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522AX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: AM Peak Hour, June 6, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2		1	2	<	1	1	<	1	1	
Volumes	167	578		42	1120	79	198	226	191	95	230	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			01			01			01			0
Lost Time	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

		Signal Operations							
Phase Combination		1	2	3	4	5	6	7	8
EB	Left	*	*						
	Thru		*						
	Right		*						
	Peds		*						
WB	Left	*	*						
	Thru		*						
	Right		*						
	Peds		*						
NB	Right								
SB	Right								
Green		14.0A	49.0A			10.0A	33.0A		
Yellow/AR		2.0	5.0			2.0	5.0		
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6									

Intersection Performance Summary									
	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach:	
								Delay	LOS
EB	L	240	1662	0.733	0.558	26.8	D	18.2	C
	T	1496	3519	0.427	0.425	15.8	C		
WB	L	288	1491	0.153	0.558	8.5	B	23.9	C
	TR	1523	3583	0.870	0.425	24.4	C		
NB	L	245	1381	0.849	0.392	36.2	D	29.6	D
	TR	468	1606	0.551	0.292	24.2	C		
SB	L	267	1589	0.375	0.392	16.4	C	21.0	C
	T	525	1801	0.461	0.292	22.9	C		

Intersection Delay = 22.9 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.847

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522PX.HCS  
 Area Type: Other B-27-1 60min  
 Comment: PM Peak Hour, June 5, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2		1	2	3	1	1	3	1	1	
Volumes	372	1513		57	1188	140	314	307	39	141	294	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			30			10			0
Lost Time	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*	*						
EB Thru	*	*			NB Left	*	*	
EB Right	*	*			NB Thru		*	
EB Peds		*			NB Right		*	
WB Left		*			SB Left	*	*	
WB Thru		*			SB Thru		*	
WB Right		*			SB Right		*	
WB Peds		*			SB Peds		*	
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A	45.0A			Green	18.0A	23.0A	
Yellow/AR	2.0	5.0			Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Lane	Group:	Intersection Performance Summary					Approach:	
		Mvmts	Adj Sat	v/c	g/C	Delay	LOS	Delay
	Cap	Flow	Ratio	Ratio				
EB L	331	1711	1.184	0.575	*	*	*	*
EB T	2081	3619	0.804	0.575	14.7	B		
WB L	60	129	1.000	0.392	112.9	F	53.6	E
NB TR	1386	3540	1.034	0.392	51.1	E		
SB L	277	1532	1.195	0.375	*	*	*	*
SB TR	363	1744	0.972	0.208	59.9	E		
EB L	287	1604	0.516	0.375	19.6	C	33.6	D
EB T	368	1766	0.840	0.208	40.3	E		

Intersection Delay = \* (sec/veh) Intersection LOS = \*  
 (g/C)\*(V/c) is greater than one. Calculation of D1 is infeasible.







Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: Q11522P6.HC9  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	2		1	2	<	2	2	<	1	2	
Volumes	455	1590		80	1245	180	385	505	60	185	485	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			40			10			0
Lost Time	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*	*					
Thru		*	*		NB Left	*	*	
Right		*	*		Thru	*	*	
Peds		*	*		Right	*	*	
WB Left		*			Peds	*	*	
Thru					SB Left	*	*	
Right			*		Thru	*	*	
Peds			*		Right	*	*	
NB Right					Peds	*	*	
SB Right					EB Right			
Green	12.0A	8.0A	50.0P		WB Right			
Yellow/AR	2.0	2.0	5.0		Green	13.0A	21.0A	
Cycle Length: 120 secs	Phase combination order: #1 #2 #3 #5 #6				Yellow/AR	2.0	5.0	

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS	
EB	L	719	3421	0.701	0.633	23.7	C	24.7	C
	T	1870	3619	0.940	0.517	24.9	C		
WB	L	192	1442	0.635	0.092	40.5	E	39.8	D
	TR	1530	3531	1.001	0.433	39.8	D		
NB	L	563	3063	0.741	0.317	26.0	D	36.4	D
	TR	668	3485	0.918	0.192	43.4	E		
SB	L	220	1604	0.886	0.317	44.3	E	37.0	D
	T	677	3532	0.793	0.192	34.4	D		

Intersection Delay = 32.7 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.952

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522P1.HC9  
 Area Type: Other 3-19-2 50min  
 Comment: PM Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	3		1	3	<	2	2	<	1	2	
Volumes	535	1665		100	1305	195	460	640	85	195	590	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			40			10			0
Lost Time	13.00	3.00		13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*	*		NB Left	*	*	
EB Thru		*	*		NB Thru		*	
EB Right		*	*		NB Right		*	
EB Peds			*		NB Peds		*	
WB Left	*				SB Left	*	*	
WB Thru			*		SB Thru		*	
WB Right			*		SB Right		*	
WB Peds			*		SB Peds		*	
NB Right					EB Right			
SB Right					WB Right			
Green	14.0A	8.0A	38.0P		Green	16.0A	28.0A	
Yellow/AR	2.0	2.0	5.0		Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1, #2, #3, #5, #6								

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS	
EB	L	776	3421	0.747	0.550	23.3	C	23.0	C
	T	2262	5429	0.852	0.417	22.9	C		
WB	L	156	1442	0.672	0.108	40.4	E	35.3	D
	TR	1764	5232	0.959	0.333	35.0	D		
NB	L	657	3063	0.760	0.400	21.6	C	31.5	D
	TR	869	3477	0.909	0.250	37.8	D		
SB	L	260	1604	0.788	0.400	28.3	D	28.9	D
	T	883	3532	0.738	0.250	29.0	D		

Intersection Delay = 28.9 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.935

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522P2.HCS  
 Area Type: Other 3-19-2 60min  
 Comment: PM Peak Hour, 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	3		1	3	<	2	2	<	1	2	
Volumes	555	1740		105	1365	235	550	695	90	210	625	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			40			10			0
Lost Time	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*	*					
Thru		*	*		NB Left	*	*	
Right		*	*		Thru	*	*	
Peds		*	*		Right	*	*	
WB Left	*		*		Peds	*	*	
Thru			*		SB Left	*	*	
Right			*		Thru	*	*	
Peds			*		Right	*	*	
NB Right			*		Peds	*	*	
SB Right					EB Right			
Green	14.0A	5.0A	41.0P		WB Right			
Yellow/AR	2.0	2.0	5.0		Green	15.0A	29.0A	
Cycle Length: 120 secs	Phase combination order: #1 #2 #3 #5 #6							
					Yellow/AR	2.0	5.0	

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	L	690	3421	0.872	0.550	31.2	D	26.0	D
	T	2262	5429	0.891	0.417	24.5	C		
WB	L	156	1442	0.711	0.108	42.7	E	33.6	D
	TR	1891	5277	0.955	0.358	33.0	D		
NB	L	644	3063	0.925	0.400	34.9	D	39.6	D
	TR	898	3478	0.954	0.258	42.8	E		
SB	L	247	1604	0.895	0.400	42.1	E	32.2	D
	T	912	3532	0.757	0.258	29.1	D		

Intersection Delay = 31.8 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.969

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522SX.HC9  
 Area Type: Other B-27-1 60min  
 Comment: Sat. Peak Hour, May 26, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2		1	2	<	1	1	<	1	1	
Volumes	302	681		35	574	124	191	280	59	147	250	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			30			15			0
Lost Time	13.00	3.00		13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*	*	
Thru	*	*			Thru	*	*	
Right	*	*			Right	*	*	
Peds		*			Peds	*	*	
WB Left		*			SB Left	*	*	
Thru		*			Thru	*	*	
Right		*			Right	*	*	
Peds		*			Peds	*	*	
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A	40.0A			Green	12.0A	34.0A	
Yellow/AR	2.0	5.0			Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	L	350	1745	0.909	0.533	39.3	D	19.2	C
	T	1987	3725	0.379	0.533	10.6	B		
WB	L	117	333	0.317	0.350	19.0	C	20.9	C
	TR	1276	3647	0.578	0.350	21.0	C		
NB	L	299	1604	0.672	0.417	19.8	C	23.4	C
	TR	529	1764	0.644	0.300	25.4	D		
SB	L	252	1668	0.615	0.417	19.1	C	21.4	C
	T	545	1818	0.482	0.300	22.7	C		

Intersection Delay = 20.8 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.711

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 03-23-1982  
 Center For Microcomputers In Transportation

Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 01152286.HC9  
 Area Type: Other 3-20-2 50min  
 Comment: Saturday Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	2		1	2	<	2	2	<	1	2	
Volumes	395	715		35	605	170	200	410	60	195	375	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			40			10			0
Lost Time	13.00	3.00		13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*	*	*		NB Left	*	*	
Thru		*	*		Thru		*	
Right		*	*		Right		*	
Peds			*		Peds		*	
WB Left	*				SB Left	*	*	
Thru			*		Thru		*	
Right			*		Right		*	
Peds			*		Peds		*	
NB Right					EB Right			
SB Right					WB Right			
Green	12.0A	9.0A	50.0P		Green	13.0A	21.0A	
Yellow/AR	2.0	2.0	5.0		Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1 #2 #3 #5 #6								

Intersection Performance Summary											
Approach:	Lane	Group:	Mvmts	Cap	Adj Sat	v/c	g/C	Delay	LOS	Delay	LOS
EB	L		909		3421	0.471	0.633	8.0	B	10.4	B
	T		1870		3619	0.423	0.517	11.7	B		
WB	L		132		1442	0.280	0.092	33.1	D	17.3	C
	TR		1512		3490	0.538	0.433	16.5	C		
NB	L		524		3063	0.414	0.317	20.3	C	29.6	D
	TR		660		3442	0.770	0.192	33.6	D		
SB	L		220		1604	0.932	0.317	51.9	E	37.2	D
	T		677		3532	0.613	0.192	29.9	D		
Intersection Delay = 21.0 sec/veh Intersection LOS = C											
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.682											



Streets: (E-W) County Road 22 (N-S) County Road 19  
 Analyst: Frb File Name: 011522S1.H09  
 Area Type: Other 3-20-2 60min  
 Comment: Saturday Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	3		1	3	<	2	2	<	1	2	
Volumes	470	750		40	630	185	210	485	55	210	450	
Lane W (ft)	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			40			10			0
Lost Time	13.00	3.00		13.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*	*					
Thru		*	*		NB Left	*	*	
Right		*	*		Thru	*	*	
Peds			*		Right	*	*	
WB Left	*		*		Peds	*	*	
Thru			*		SB Left	*	*	
Right			*		Thru	*	*	
Peds			*		Right	*	*	
NB Right					Peds	*	*	
SB Right					EB Right			
Green	14.0A	8.0A	38.0P		WB Right			
Yellow/AR	2.0	2.0	5.0		Green	15.0A	28.0A	
Cycle Length: 120 secs	Phase combination order: #1 #2 #3 #5 #6							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS	
EB	L	975	3421	0.523	0.550	10.7	B	13.9	B
	T	2262	5429	0.384	0.417	15.8	C		
WB	L	156	1442	0.269	0.108	32.0	D	21.5	C
	TR	1742	5226	0.515	0.333	21.0	C		
NB	L	609	3063	0.374	0.400	15.9	C	24.6	C
	TR	870	3479	0.685	0.250	27.9	D		
SB	L	260	1604	0.850	0.400	33.5	D	26.3	D
	T	883	3532	0.564	0.250	26.0	D		

Intersection Delay = 20.7 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 12.0 sec. Critical v/c(x) = 0.685

Streets: (E-W) County Road 42 (N-S) County Road 19  
 Analyst: Frb File Name: 011542AX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: AM Peak Hour, June 7, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		> 1	1		1	1	<	1	1	<
Volumes	52	133	105	57	370	95	153	267	55	71	320	54
Lane W (ft)		11.0	11.0		11.0	11.0	10.0	11.0		10.0	11.0	
RTOR Vols			0			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations								
	1	2	3	4	5	6	7	8	
EB Left	*								
Thru	*				NB Left	*	*		
Right	*				Thru		*		
Peds	*				Right		*		
WB Left	*				Peds		*		
Thru	*				SB Left	*	*		
Right	*				Thru		*		
Peds	*				Right		*		
NB Right					Peds		*		
SB Right					EB Right				
Green	23.0A				WB Right				
Yellow/AR	5.0				Green	10.0A	20.0A		
Cycle Length:	65 secs	Phase combination order: #1 #5 #6							
					Yellow/AR	2.0	5.0		

Intersection Performance Summary									
	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach:	
								Delay	LOS
EB	LT	299	778	0.652	0.385	14.1	B	12.1	B
	R	505	1312	0.220	0.385	8.7	B		
WB	LT	582	1512	0.772	0.385	15.7	C	14.4	B
	R	500	1301	0.200	0.385	8.6	B		
NB	L	305	1404	0.528	0.523	7.9	B	11.7	B
	TR	531	1570	0.638	0.338	13.5	B		
SB	L	295	1316	0.254	0.523	5.8	B	13.3	B
	TR	563	1664	0.700	0.338	14.7	B		

Intersection Delay = 13.0 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.753

Streets: (E-W) County Road 42 (N-S) County Road 19  
 Analyst: Frb File Name: 011542PX.HC9  
 Area Type: Other B-27-1 60min  
 Comment: PM Peak Hour, June 6, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		> 1	1		1	.1	<	1	1	<
Volumes	64	291	109	38	190	46	118	253	55	146	355	64
Lane W (ft)		11.0	11.0		11.0	11.0	10.0	11.0		10.0	11.0	
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*							
Right	*							
Peds	*							
WB Left	*							
Thru	*							
Right	*							
Peds	*							
NB Right								
SB Right								
Green	23.0A				10.0A	20.0A		
Yellow/AR	5.0				2.0	5.0		
Cycle Length:	65 secs Phase combination order: #1 #5 #6							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LDS	Approach:	Delay	LDS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LT	573	1490	0.651	0.385	12.4	B	11.6	B
	R	546	1419	0.211	0.385	8.7	B		
WB	LT	469	1219	0.512	0.385	10.7	B	10.3	B
	R	484	1259	0.099	0.385	8.3	B		
NB	L	316	1478	0.392	0.523	6.9	B	11.2	B
	TR	545	1610	0.595	0.338	12.8	B		
SB	L	309	1337	0.498	0.523	7.1	B	14.8	B
	TR	563	1662	0.784	0.338	17.5	C		

Intersection Delay = 12.3 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.732

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 03-23-1982  
 Center For Microcomputers In Transportation

Streets: (E-W) County Road 42 (N-S) County Road 19  
 Analyst: Frb File Name: 011542P6.HC9  
 Area Type: Other 3-20-2 60min  
 Comment: PM Peak Hour, 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volumes	150	305	115	40	200	90	125	340	60	195	465	160
Lane W (ft)	12.0	11.0	11.0	12.0	11.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*						
Thru		*						
Right		*						
Peds		*						
WB Left	*	*						
Thru		*						
Right		*						
Peds		*						
NB Right								
SB Right								
Green	8.0A	24.0A			10.0A	44.0A		
Yellow/AR	2.0	5.0			2.0	5.0		
Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6								

Intersection Performance Summary

Lane	Group:	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach:	
									Delay	LOS
EB	L	223		1770	0.709	0.360	22.2	C	22.7	C
	T	473		1818	0.679	0.260	24.2	C		
	R	369		1419	0.328	0.260	19.5	C		
WB	L	180		1492	0.233	0.360	14.6	B	27.9	D
	TR	386		1484	0.793	0.260	29.7	D		
NB	L	205		1478	0.644	0.580	16.5	C	14.1	B
	TR	751		1632	0.561	0.460	13.4	B		
SB	L	240		1337	0.854	0.580	25.6	D	24.1	C
	TR	752		1635	0.874	0.460	23.6	C		

Intersection Delay = 22.0 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.873

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 03-23-1982  
 Center For Microcomputers In Transportation

Streets: (E-W) County Road 42 (N-S) County Road 19  
 Analyst: Frb File Name: 011542P1.HC9  
 Area Type: Other 3-20-2 60min  
 Comment: PM Peak Hour, 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	<	1	1	<	1	1	1
Volumes	195	320	145	55	210	110	150	415	75	220	575	230
Lane W (ft)	12.0	11.0	11.0	12.0	11.0		11.0	11.0		11.0	11.0	12.0
RTOR Vols			0			0			0			60
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*						
EB Thru		*						
EB Right		*						
EB Peds		*						
WB Left	*	*						
WB Thru		*						
WB Right		*						
WB Peds		*						
NB Right					*	*		
SB Right					*	*		
Green	11.0A	31.0A			20.0A	44.0A		
Yellow/AR	2.0	5.0			2.0	5.0		
Cycle Length:	120 secs Phase combination order: #1 #2 #5 #6							

Intersection Performance Summary

Lane Group	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LDS	Approach: Delay	LDS
EB L	195	235	1770	0.872	0.383	37.7	D	29.5	D
EB T	320	500	1818	0.674	0.275	27.5	D		
EB R	145	390	1419	0.392	0.275	23.2	C		
WB L	55	198	1492	0.293	0.383	16.8	C	33.0	D
WB TR	210	406	1476	0.830	0.275	35.7	D		
NB L	110	294	1478	0.537	0.567	18.0	C	25.5	D
NB TR	150	625	1631	0.825	0.383	27.8	D		
SB L	75	272	1337	0.853	0.567	37.9	D	33.0	D
SB T	220	658	1717	0.919	0.383	35.8	D		
SB R	575	553	1442	0.324	0.383	17.0	C		

Intersection Delay = 30.3 sec/veh Intersection LDS = D  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.914

Streets: (E-W) County Road 42 (N-S) County Road 19  
 Analyst: Frb File Name: 011542P2.HC9  
 Area Type: Other 3-20-2 60min  
 Comment: PM Peak Hour, 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	<	1	2	<	1	2	1
Volumes	210	335	175	70	220	120	170	460	90	250	695	280
Lane W (ft)	12.0	11.0	11.0	12.0	11.0		10.0	11.0		10.0	11.0	12.0
RTOR Vols			0			0			0			60
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*	*	
EB Thru		*			NB Thru		*	
EB Right		*			NB Right		*	
EB Peds		*			NB Peds		*	
WB Left	*	*			SB Left	*	*	
WB Thru		*			SB Thru		*	
WB Right		*			SB Right		*	
WB Peds		*			SB Peds		*	
NB Right					EB Right			
SB Right					WB Right			
Green	11.0A	39.0A			Green	22.0A	34.0A	
Yellow/AR	2.0	5.0			Yellow/AR	2.0	5.0	
Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6								

Intersection Performance Summary											
	Lane	Group:	Adj Sat			Delay	LOS	Approach:			
			Mvmts	Cap	Flow			v/c Ratio	g/C Ratio	Delay	LOS
EB	L		274		1770	0.807	0.450	25.9	D	22.5	C
	T		621		1818	0.568	0.342	21.8	C		
	R		485		1419	0.380	0.342	19.6	C		
WB	L		234		1492	0.316	0.450	13.8	B	23.4	C
	TR		504		1474	0.711	0.342	25.4	D		
NB	L		319		1478	0.561	0.500	16.8	C	22.6	C
	TR		977		3257	0.622	0.300	24.2	C		
SB	L		304		1337	0.865	0.500	32.5	D	27.3	D
	T		1030		3433	0.747	0.300	26.6	D		
	R		433		1442	0.536	0.300	23.7	C		

Intersection Delay = 24.5 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.806



Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 north ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... AM Peak hour Aug. 16, 2000  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	0	0	1	> 0	< 0
Stop/Yield			N			N						
Volumes		328	53	42	363					8		119
PHF		.95	.95	.95	.95					.95		.95
Grade		-2			2						0	
MC's (%)				0						0		0
SU/RV's (%)				4						10		10
CV's (%)				4						11		11
PCE's				1.30						1.16		1.16

Adjustment Factors

Vehicle	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street		WB	EB
Conflicting Flows: (vph)		373	
Potential Capacity: (pcph)		896	
Movement Capacity: (pcph)		896	
Prob. of Queue-Free State:		0.84	
Step 2: LT from Major Street		SB	NB
Conflicting Flows: (vph)		401	
Potential Capacity: (pcph)		1104	
Movement Capacity: (pcph)		1104	
Prob. of Queue-Free State:		0.95	
TH Saturation Flow Rate: (pcphpl)		1700	
RT Saturation Flow Rate: (pcphpl)			
Major LT Shared Lane Prob. of Queue-Free State:		0.93	
Step 4: LT from Minor Street		WB	EB
Conflicting Flows: (vph)		799	
Potential Capacity: (pcph)		365	
Major LT, Minor TH Impedance Factor:		0.93	
Adjusted Impedance Factor:		0.93	
Capacity Adjustment Factor due to Impeding Movements		0.93	
Movement Capacity: (pcph)		341	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	9	341	>				
WB R	145	896	>	5.4	0.8	B	5.4
SB L	57	1104		3.4	0.0	A	0.4

Intersection Delay = 0.9 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 north ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM Peak hour Aug. 15, 2000  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	0	0	1	> 0	< 0
Stop/Yield			N			N						
Volumes		361	23	32	509							
PHF		.95	.95	.95	.95					.9		107
Grade		-2			2					.95		.95
MC's (%)				0							0	
SU/RV's (%)				2						0		0
CV's (%)				3						5		5
PCE's				1.27						5		5
										1.08		1.08

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street			WB	EB
Conflicting Flows: (vph)			392	
Potential Capacity: (pcph)			876	
Movement Capacity: (pcph)			876	
Prob. of Queue-Free State:			0.86	
Step 2: LT from Major Street			SB	NB
Conflicting Flows: (vph)			404	
Potential Capacity: (pcph)			1100	
Movement Capacity: (pcph)			1100	
Prob. of Queue-Free State:			0.96	
TH Saturation Flow Rate: (pcphpl)			1700	
RT Saturation Flow Rate: (pcphpl)				
Major LT Shared Lane Prob. of Queue-Free State:			0.94	
Step 4: LT from Minor Street			WB	EB
Conflicting Flows: (vph)			962	
Potential Capacity: (pcph)			294	
Major LT, Minor TH Impedance Factor:			0.94	
Adjusted Impedance Factor:			0.94	
Capacity Adjustment Factor due to Impeding Movements			0.94	
Movement Capacity: (pcph)			277	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	10	277	>				
WB R	121	876	>	5.8	0.7	B	5.8
SB L	43	1100		3.4	0.0	A	0.2

Intersection Delay = 0.8 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 north ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM peak hour 2006  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	0	0	1	> 0	< 0
Stop/Yield			N			N						
Volumes		435	25	50	610					10		125
PHF		.95	.95	.95	.95					.95		.95
Grade		-2			2						0	
MC's (%)				0							0	
SU/RV's (%)				2							0	0
CV's (%)				3							5	5
PCE's				1.27						1.08		1.08

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street			WB	EB
Conflicting Flows: (vph)		471		
Potential Capacity: (pcph)		799		
Movement Capacity: (pcph)		799		
Prob. of Queue-Free State:		0.82		
Step 2: LT from Major Street			SB	NB
Conflicting Flows: (vph)		484		
Potential Capacity: (pcph)		1008		
Movement Capacity: (pcph)		1008		
Prob. of Queue-Free State:		0.93		
TH Saturation Flow Rate: (pcphpl)		1700		
RT Saturation Flow Rate: (pcphpl)				
Major LT Shared Lane Prob. of Queue-Free State:		0.89		
Step 4: LT from Minor Street			WB	EB
Conflicting Flows: (vph)		1166		
Potential Capacity: (pcph)		224		
Major LT, Minor TH Impedance Factor:		0.89		
Adjusted Impedance Factor:		0.89		
Capacity Adjustment Factor due to Impeding Movements		0.89		
Movement Capacity: (pcph)		200		

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LDS	Approach Delay (sec/veh)
WB L	12	200	>				
WB R	143	799	>	7.3	1.1	B	7.3
SB L	67	1008		3.8	0.1	A	0.3
Intersection Delay =				0.9 sec/veh			



Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 north ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM peak hour 2011  
 Two-Way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	0	0	1	> 0	< 0
Stop/Yield			N			N						
Volumes		550	30	110	775					15		195
PHF		.95	.95	.95	.95					.95		.95
Grade		-2			2						0	
MC's (%)				0						0		0
SU/RV's (%)				2						5		5
CV's (%)				3						5		5
PCE's				1.27						1.08		1.08

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	595	
Potential Capacity: (pcph)	692	
Movement Capacity: (pcph)	692	
Prob. of Queue-Free State:	0.68	
Step 2: LT from Major Street		
	SB	NB
Conflicting Flows: (vph)	611	
Potential Capacity: (pcph)	877	
Movement Capacity: (pcph)	877	
Prob. of Queue-Free State:	0.83	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.68	
Step 4: LT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1527	
Potential Capacity: (pcph)	138	
Major LT, Minor TH Impedance Factor:	0.68	
Adjusted Impedance Factor:	0.68	
Capacity Adjustment Factor due to Impeding Movements	0.68	
Movement Capacity: (pcph)	94	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LDS	Approach Delay (sec/veh)
WB L	17	94 >					
WB R	221	692 >	476	15.1	3.2	C	15.1
SB L	147	877		4.9	0.7	A	0.6
Intersection Delay =				2.2 sec/veh			

Center For Microcomputers In Transportation  
 University of Florida  
 312 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 north ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM peak hour 2021  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		625	45	115	925					25		200
PHF		.95	.95	.95	.95					.95		.95
Grade		-2			2						0	
MC's (%)				0						0		0
SU/RV's (%)				2						5		5
CV's (%)				3						5		5
PCE's				1.27						1.08		1.08

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	3.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	682	
Potential Capacity: (pcph)	625	
Movement Capacity: (pcph)	625	
Prob. of Queue-Free State:	0.64	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	705	
Potential Capacity: (pcph)	791	
Movement Capacity: (pcph)	791	
Prob. of Queue-Free State:	0.81	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.54	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1776	
Potential Capacity: (pcph)	99	
Major LT, Minor TH Impedance Factor:	0.54	
Adjusted Impedance Factor:	0.54	
Capacity Adjustment Factor due to Impeding Movements	0.54	
Movement Capacity: (pcph)	54	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	28	54		133.3	2.5	F	
WB R	228	625		9.1	1.9	B	22.9
SB L	154	791		5.7	0.8	B	0.6

Intersection Delay = 3.0 sec/veh

Center For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

Streets: (N-S) County Road 19

(E-W) Hwy 401 south ramps

Major Street Direction.... NS

Length of Time Analyzed... 60 (min)

Analyst..... frb

Date of Analysis..... 8/27/1

Other Information..... AM Peak hour Aug. 15, 2000

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	1	> 1	< 0
Stop/Yield			N			N						
Volumes	7	332	2	14	203	108	34	2	13	0	3	3
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		2			-2			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	3			4			5	5	5	1	1	1
CV's (%)	3			4			5	5	5	1	1	1
PCE's	1.28			0.94			1.08	1.08	1.08	1.02	1.02	1.02

Adjustment Factors

Vehicle	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

-----		
Step 1: RT from Minor Street	WB	EB
-----		
Conflicting Flows: (vph)	350	271
Potential Capacity: (pcph)	920	1009
Movement Capacity: (pcph)	920	1009
Prob. of Queue-Free State:	1.00	0.99
-----		
Step 2: LT from Major Street	SB	NB
-----		
Conflicting Flows: (vph)	351	328
Potential Capacity: (pcph)	1166	1196
Movement Capacity: (pcph)	1166	1196
Prob. of Queue-Free State:	0.99	0.99
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	0.99
-----		
Step 3: TH from Minor Street	WB	EB
-----		
Conflicting Flows: (vph)	700	644
Potential Capacity: (pcph)	468	501
Capacity Adjustment Factor due to Impeding Movements	0.98	0.98
Movement Capacity: (pcph)	457	489
Prob. of Queue-Free State:	0.99	1.00
-----		
Step 4: LT from Minor Street	WB	EB
-----		
Conflicting Flows: (vph)	651	646
Potential Capacity: (pcph)	444	447
Major LT, Minor TH Impedance Factor:	0.97	0.97
Adjusted Impedance Factor:	0.98	0.98
Capacity Adjustment Factor due to Impeding Movements	0.96	0.97
Movement Capacity: (pcph)	428	435
-----		



Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	39	435	>				
EB T	2	489	>				
EB R	15	1009	>	7.8	0.3	B	7.8
WB L	0	428	>				
WB T	3	457	>				
WB R	3	920	>	6.0	0.0	B	6.0
NE L	9	1196		3.0	0.0	A	0.1
SB L	14	1166		3.1	0.0	A	0.1

Intersection Delay = 0.7 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 south ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 8/27/1  
 Other Information..... PM Peak hour Aug. 15, 2000  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	1	> 1	< 0
Stop/Yield			N			N						
Volumes	12	299	4	6	400	140	50	1	47	3	1	10
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		2			-2			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	2			2			3	3	3	0	0	0
CV's (%)	2			2			3	3	3	0	0	0
PCE's	1.25			10.92			1.05	1.05	1.05	1.00	1.00	1.00

Adjustment Factors

Vehicle maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	317	494
Potential Capacity: (pcph)	957	778
Movement Capacity: (pcph)	957	778
Prob. of Queue-Free State:	0.99	0.93
Step 2: LT from Major Street		
	SB	NB
Conflicting Flows: (vph)	319	568
Potential Capacity: (pcph)	1208	919
Movement Capacity: (pcph)	1208	919
Prob. of Queue-Free State:	1.00	0.98
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	0.98
Step 3: TH from Minor Street		
	WB	EB
Conflicting Flows: (vph)	904	832
Potential Capacity: (pcph)	366	399
Capacity Adjustment Factor due to Impeding Movements	0.97	0.97
Movement Capacity: (pcph)	355	388
Prob. of Queue-Free State:	1.00	1.00
Step 4: LT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	856	836
Potential Capacity: (pcph)	338	347
Major LT, Minor TH Impedance Factor:	0.97	0.97
Adjusted Impedance Factor:	0.98	0.98
Capacity Adjustment Factor due to Impeding Movements	0.91	0.96
Movement Capacity: (pcph)	308	335

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	55	335	>				
EB T	1	398	>	10.2	1.0	C	10.2
EB R	51	778	>				
WB L	3	308	>				
WB T	1	355	>	5.9	0.0	B	5.9
WB R	11	957	>				
NB L	16	919		4.0	0.0	A	0.2
SB L	6	1208		3.0	0.0	A	0.0

Intersection Delay = 1.2 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 south ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM peak hour 2006  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	1	> 1	< 0
Stop/Yield			N			N						
Volumes	15	355	5	5	470	170	75	5	50	5	5	10
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		2			-2			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	2			2			3	3	3	0	0	0
CV's (%)	2			2			3	3	3	0	0	0
PCE's	1.25			10.92			1.04	1.04	1.04	1.00	1.00	1.00

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	376	584
Potential Capacity: (pcph)	893	701
Movement Capacity: (pcph)	893	701
Prob. of Queue-Free State:	0.99	0.92
Step 2: LT from Major Street		
	SB	NB
Conflicting Flows: (vph)	379	674
Potential Capacity: (pcph)	1131	818
Movement Capacity: (pcph)	1131	818
Prob. of Queue-Free State:	1.00	0.98
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	0.97
Step 3: TH from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1072	984
Potential Capacity: (pcph)	299	332
Capacity Adjustment Factor due to Impeding Movements	0.96	0.96
Movement Capacity: (pcph)	287	319
Prob. of Queue-Free State:	0.98	0.98
Step 4: LT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1011	990
Potential Capacity: (pcph)	275	283
Major LT, Minor TH Impedance Factor:	0.95	0.94
Adjusted Impedance Factor:	0.96	0.96
Capacity Adjustment Factor due to Impeding Movements	0.88	0.95
Movement Capacity: (pcph)	243	268



Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	82	268 >					
EB T	5	319 >	355	16.9	2.2	C	16.9
EB R	55	701 >					
WB L	5	243 >					
WB T	5	287 >	417	9.1	0.0	B	9.1
WB R	11	893 >					
NB L	20	918		4.5	0.0	A	0.2
SB L	5	1131		3.2	0.0	A	0.0

Intersection Delay = 2.1 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 south ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM peak hour 2011  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	1	1	< 0	1	> 1	< 0
Stop/Yield			N			N						
Volumes	15	420	5	5	570	245	130	5	65	5	5	10
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		2			-2			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	2			2			3	3	3	0	0	0
CV's (%)	2			2			3	3	3	0	0	0
PCE's	1.25			10.92			1.04	1.04	1.04	1.00	1.00	1.00

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSO Intersection

Step 1: RT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	444	729
Potential Capacity: (pcph)	825	592
Movement Capacity: (pcph)	825	592
Prob. of Queue-Free State:	0.99	0.88
Step 2: LT from Major Street		
	SB	NB
Conflicting Flows: (vph)	447	858
Potential Capacity: (pcph)	1050	669
Movement Capacity: (pcph)	1050	669
Prob. of Queue-Free State:	1.00	0.97
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	0.96
Step 3: TH from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1324	1197
Potential Capacity: (pcph)	220	257
Capacity Adjustment Factor due to Impeding Movements	0.95	0.95
Movement Capacity: (pcph)	209	244
Prob. of Queue-Free State:	0.98	0.98
Step 4: LT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1231	1202
Potential Capacity: (pcph)	205	213
Major LT, Minor TH Impedance Factor:	0.93	0.93
Adjusted Impedance Factor:	0.95	0.94
Capacity Adjustment Factor due to Impeding Movements	0.83	0.93
Movement Capacity: (pcph)	171	199

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	142	199		59.8	8.0	F	
EB T	5	244	>				41.6
EB R	71	592	> 541	7.7	0.5	B	
WB L	5	171	>				
WB T	5	209	> 316	12.2	0.1	C	12.2
WB R	11	825	>				
NB L	20	669		5.5	0.0	B	0.2
SB L	5	1050		3.4	0.0	A	0.0

Intersection Delay = 5.9 sec/veh

Center For Microcomputers In Transportation  
 University of Florida  
 512 Weil Hall  
 Gainesville, FL 32611-2083  
 Ph: (904) 392-0378

Streets: (N-S) County Road 19 (E-W) Hwy 401 south ramps  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... frb  
 Date of Analysis..... 3/19/2  
 Other Information..... PM peak hour 2021  
 Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	1	1	< 0	1	> 1	< 0
Stop/Yield			N			N						
Volumes	20	500	5	5	710	265	135	5	95	5	5	10
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		2			-2			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	2			2			3	3	3	0	0	0
CV's (%)	2			2			3	3	3	0	0	0
PCE's	11.25			10.92			11.04	1.04	1.04	1.00	1.00	1.00

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	528	886
Potential Capacity: (pcph)	748	493
Movement Capacity: (pcph)	748	493
Prob. of Queue-Free State:	0.99	0.79
Step 2: LT from Major Street		
	SB	NB
Conflicting Flows: (vph)	531	1026
Potential Capacity: (pcph)	957	556
Movement Capacity: (pcph)	957	556
Prob. of Queue-Free State:	0.99	0.95
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	0.93
Step 3: TH from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1580	1444
Potential Capacity: (pcph)	162	191
Capacity Adjustment Factor due to Impeding Movements	0.92	0.92
Movement Capacity: (pcph)	149	176
Prob. of Queue-Free State:	0.97	0.97
Step 4: LT from Minor Street		
	WB	EB
Conflicting Flows: (vph)	1494	1449
Potential Capacity: (pcph)	144	153
Major LT, Minor TH Impedance Factor:	0.89	0.89
Adjusted Impedance Factor:	0.92	0.91
Capacity Adjustment Factor due to Impeding Movements	0.72	0.90
Movement Capacity: (pcph)	104	138



Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	148	138		325.0	16.1	F	
EB T	5	176 >					191.1
EB R	104	493 >	455	10.4	1.1	C	
WB L	5	104 >					
WB T	5	149 >	218	18.3	0.3	C	18.3
WB R	11	748 >					
NB L	26	556		6.8	0.0	B	0.3
SB L	5	957		3.8	0.0	A	0.0

Intersection Delay = 25.8 sec/veh

Streets: (E-W) County Road 46

(N-S) County Road 19

Analyst: Frb

File Name: 011546AX.HC9

Area Type: Other

B-27-1 60min

Comment: AM Peak Hour June 7, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1		1	> 1		1	1	1	<	1	1	<
Volumes	13	49	197	12	121	44	402	393	4	16	333	44
Lane W (ft)		11.0	10.0		11.0	10.0	10.0	11.0		10.0	11.0	
RTDR Vols			0			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*				NB Left	*	*	
EB Right	*				EB Thru	*	*	
EB Peds	*				EB Right	*	*	
WB Left	*				WB Peds	*	*	
WB Thru	*				SB Left	*	*	
WB Right	*				WB Thru	*	*	
WB Peds	*				WB Right	*	*	
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A				Green	15.0A	23.0A	
Yellow/AR	5.0				Yellow/AR	2.0	5.0	
Cycle Length:	70 secs Phase combination order: #1 #5 #6							

Intersection Performance Summary													
Lane	Group:	Mvmts	Cap	Adj Sat	v/c	g/C	Flow	Ratio	Ratio	Delay	LOS	Approach:	
												Delay	LOS
EB	LT		407		1296	0.162	0.314	11.2	B	12.5	B		
	R		455		1449	0.455	0.314	12.9	B				
WB	LT		515		1639	0.272	0.314	11.7	B	11.5	B		
	R		443		1409	0.104	0.314	11.0	B				
NB	L		446		1652	0.948	0.600	32.1	D	18.6	C		
	TR		1028		1714	0.406	0.600	4.9	A				
SB	L		129		362	0.131	0.357	9.8	B	15.1	C		
	TR		560		1569	0.708	0.357	15.4	C				
Intersection Delay = 16.0 sec/veh										Intersection LOS = C			
Lost Time/Cycle, L = 6.0 sec										Critical v/c(x) = 0.727			

Streets: (E-W) County Road 46 (N-S) County Road 19  
 Analyst: Frb File Name: 011546PX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: PM Peak Hour June 6, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		> 1	1		1	1	<	1	1	<
Volumes	45	144	495	17	38	30	155	234	25	61	416	38
Lane W (ft)		11.0	10.0		11.0	10.0	10.0	11.0		10.0	11.0	
RTOR Vols			100			0				0		0
Lost Time	13.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*							
Right	*							
Peds	*							
WB Left	*							
Thru	*							
Right	*							
Peds	*							
NB Right								
SB Right								
Green	25.0A				8.0A	25.0A		
Yellow/AR	5.0				2.0	5.0		
Cycle Length:	70 secs Phase combination order: #1 #5 #6							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LT	618	1601	0.322	0.386	9.9	B	13.4	B
	R	570	1478	0.730	0.386	15.1	C		
WB	LT	562	1457	0.103	0.386	8.9	B	8.8	B
	R	543	1409	0.059	0.386	8.7	B		
NB	L	262	1589	0.622	0.529	10.5	B	10.5	B
	TR	635	1646	0.428	0.386	10.5	B		
SB	L	402	1652	0.159	0.529	5.5	B	13.9	B
	TR	648	1679	0.738	0.386	15.0	B		

Intersection Delay = 12.6 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.765

Streets: (E-W) County Road 48 (N-S) County Road 19  
 Analyst: Frb File Name: Q11546P6.HC9  
 Area Type: Other 3-20-2 60min  
 Comment: PM Peak Hour 2006

	Eastbound			Westbound			Northbound			Southbound			
	L	T	R	L	T	R	L	T	R	L	T	R	
No. Lanes	> 1		1	> 1		1	1	1	<		1	1	<
Volumes	50	150	520	20	40	35	165	275	25	70	475	45	
Lane W (ft)		11.0	10.0		11.0	10.0	10.0	11.0		10.0	11.0		
RTDR Vols			100			0				0		0	
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*							
WB Thru	*							
WB Right	*							
WB Peds	*							
NB Right								
SB Right								
Green	25.0A				8.0A	25.0A		
Yellow/AR	5.0				2.0	5.0		
Cycle Length:	70 secs Phase combination order: #1 #5 #6							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LT	611	1583	0.346	0.386	10.0	B	14.6	B
	R	570	1478	0.775	0.386	16.8	C		
WB	LT	545	1412	0.116	0.386	8.9	B	8.9	B
	R	543	1409	0.068	0.386	8.8	B		
NB	L	262	1589	0.664	0.529	12.2	B	11.5	B
	TR	636	1649	0.495	0.386	11.1	B		
SB	L	360	1652	0.206	0.529	5.7	B	18.0	C
	TR	648	1679	0.845	0.386	19.7	C		

Intersection Delay = 14.6 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.832

Streets: (E-W) County Road 46 (N-S) County Road 19  
 Analyst: Frb File Name: 011546P1.HC9  
 Area Type: Other 3-20-2 60min  
 Comment: PM Peak Hour 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		> 1	1		1	1	<	1	1	<
Volumes	60	160	545	20	40	45	170	330	30	75	585	50
Lane W (ft)		11.0	10.0		11.0	10.0	10.0	11.0		10.0	11.0	
RTOR Vols			100			0				0		0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*				NB Left	*		
Right	*				Thru	*		
Peds	*				Right	*		
WB Left	*				Peds	*		
Thru	*				SB Left	*		
Right	*				Thru	*		
Peds	*				Right	*		
NB Right					Peds	*		
SB Right					EB Right			
Green	32.0A				WB Right			
Yellow/AR	5.0				Green	8.0A	38.0A	
Cycle Length:	90 secs				Yellow/AR	2.0	5.0	

Phase combination order: #1 #5 #6

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LDS	Approach:	Delay	LDS
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LT	590	1561	0.392	0.378	13.4	B	20.6	C
	R	558	1478	0.840	0.378	24.2	C		
WB	LT	517	1369	0.122	0.378	11.8	B	11.7	B
	R	532	1409	0.088	0.378	11.6	B		
NB	L	204	1589	0.877	0.556	35.3	D	19.6	C
	TR	733	1649	0.517	0.444	12.2	B		
SB	L	311	1652	0.254	0.556	6.9	B	21.9	C
	TR	754	1696	0.888	0.444	23.7	C		

Intersection Delay = 20.3 sec/veh Intersection LDS = C  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.878

Streets: (E-W) County Road 46  
 Analyst: Frb  
 Area Type: Other  
 Comment: PM Peak Hour 2021

(N-S) County Road 19  
 File Name: 011546P2.HC9  
 3-20-2 60min

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		> 1	1		1	1	<	1	1	<
Volumes	60	165	570	25	45	45	180	415	35	85	745	60
Lane W (ft)		11.0	10.0		11.0	10.0	10.0	11.0		10.0	11.0	
RTDR Vols			100			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*				NB Left	*	*	
EB Right	*				EB Thru	*	*	
EB Peds	*				EB Right	*	*	
WB Left	*				WB Peds	*	*	
WB Thru	*				SB Left	*	*	
WB Right	*				SB Thru	*	*	
WB Peds	*				SB Right	*	*	
NB Right					EB Right			
SB Right					WB Right			
Green	32.0A				Green	10.0A	46.0A	
Yellow/AR	5.0				Yellow/AR	2.0	5.0	

Cycle Length: 100 secs Phase combination order: #1 #5 #6

Intersection Performance Summary										
	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:		
								Mvmts	Cap	Flow
EB	LT		525	1543	0.452	0.340	17.1	C	38.3	D
	R		503	1478	0.985	0.340	48.5	E		
WB	LT		443	1302	0.155	0.340	14.9	B	14.8	B
	R		479	1409	0.098	0.340	14.6	B		
NB	L		215	1589	0.879	0.600	40.1	E	20.8	C
	TR		792	1650	0.598	0.480	13.2	B		
SB	L		259	1652	0.344	0.600	7.3	B	47.7	E
	TR		815	1697	1.040	0.480	52.0	E		

Intersection Delay = 36.0 sec/veh Intersection LOS = D  
 Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 1.015



Streets: (E-W) County Road 34 (N-S) County Road 19  
 Analyst: Frb File Name: 011534PX.HC9  
 Area Type: Other B-27-1 60min  
 Comment: PM Peak Hour August 23, 2001

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		> 1		1	> 1	<		> 1	<	
Volumes	4	74	1	2	71	149	5	181	9	350	333	5
Lane W (ft)	11.0			11.0			11.0			11.0		
RTOR Vols	0			0			0			0		
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*				NB Left	*		
EB Right	*				NB Thru	*		
EB Peds	*				NB Right	*		
WB Left	*				SB Left	*		
WB Thru	*				SB Thru	*		
WB Right	*				SB Right	*		
WB Peds	*				EB Right	*		
NB Right					WB Right	*		
SB Right					Green	49.0A		
Green	16.0A				Yellow/AR	5.0		
Yellow/AR	5.0				Cycle Length:	75 secs	Phase combination order:	#1 #5

Intersection Performance Summary									
	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
								Delay	LOS
EB	LTR	389	1620	0.213	0.240	14.8	B	14.8	B
WB	LT	435	1811	0.177	0.240	14.6	B	15.7	C
	R	358	1492	0.438	0.240	16.2	C		
NB	LTR	1009	1484	0.203	0.680	2.9	A	2.9	A
SB	LTR	738	1085	0.981	0.680	28.8	D	28.8	D
Intersection Delay =						21.2 sec/veh	Intersection LOS = C		
Lost Time/Cycle, L =						6.0 sec	Critical v/c(x) = 0.840		

Streets: (E-W) County Road 34 (N-S) County Road 19  
 Analyst: Frb File Name: 011534P6.HC9  
 Area Type: Other 3-21-2 60min  
 Comment: PM Peak Hour 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		> 1	1		> 1	<		1	1	<
Volumes	5	80	5	5	75	170	5	205	10	390	370	5
Lane W (ft)	11.0			11.0 10.0			11.0			11.0 11.0		
RTOR Vols	0			0			0			0		
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

		Signal Operations							
Phase Combination		1	2	3	4	5	6	7	8
EB	Left	*							
	Thru	*							
	Right	*							
	Peds	*							
WB	Left	*							
	Thru	*							
	Right	*							
	Peds	*							
NB	Right								
SB	Right								
Green		18.0A				49.0A			
Yellow/AR		5.0				5.0			
Cycle Length:		75 secs Phase combination order: #1 #5							

Intersection Performance Summary									
	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS
EB	LTR	386	1607	0.244	0.240	14.9	B	14.9	B
WB	LT	431	1797	0.195	0.240	14.7	B	16.2	C
	R	358	1492	0.500	0.240	16.8	C		
NB	LTR	1059	1558	0.219	0.680	2.9	A	2.9	A
SB	L	718	1056	0.572	0.680	4.9	A	4.1	A
	TR	1210	1780	0.326	0.680	3.2	A		
Intersection Delay =						6.9 sec/veh	Intersection LOS = B		
Lost Time/Cycle, L =						6.0 sec	Critical v/c(x) = 0.553		

Streets: (E-W) County Road 34 (N-S) County Road 19  
 Analyst: Frb File Name: 011534P1.HC9  
 Area Type: Other 3-21-2 60min  
 Comment: PM Peak Hour 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		> 1	1		> 1	<		1	1	<
Volumes	5	85	10	5	85	185	15	220	10	415	395	5
Lane W (ft)	11.0			11.0			11.0			12.0		
RTOR Vols	0			0			0			0		
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*							
WB Thru	*							
WB Right	*							
WB Peds	*							
NB Right					*			
SB Right					*			
Green	16.0A					49.0A		
Yellow/AR	5.0					5.0		
Cycle Length:	75 secs Phase combination order: #1 #3							

Intersection Performance Summary

Lane	Group:	Mvmts	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
	Cap		Flow	Ratio	Ratio			Delay	LOS	
EB	LTR	383	1594	0.274	0.240	15.1	C	15.1	C	
WB	LT	431	1797	0.218	0.240	14.8	B	16.6	C	
	R	358	1492	0.545	0.240	17.4	C			
NB	LTR	1008	1483	0.257	0.680	3.0	A	3.0	A	
SB	L	672	988	0.650	0.680	6.0	B	4.7	A	
	TR	1210	1780	0.348	0.680	3.3	A			
Intersection Delay =						7.4 sec/veh	Intersection LOS = B			
Lost Time/Cycle, L =						6.0 sec	Critical v/c(x) = 0.623			

Streets: (E-W) County Road 34 (N-S) County Road 19  
 Analyst: Frb File Name: 011534P2.HC9  
 Area Type: Other 3-21-2 50min  
 Comment: PM Peak Hour 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	<		> 1	1		> 1	<		1	1	<
Volumes	5	95	20	5	100	195	30	235	10	445	430	5
Lane W (ft)	11.0			11.0			11.0			12.0		
RTOR Vols	0			0			0			0		
Lost Time	13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	3.00	13.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left		*						
WB Thru		*						
WB Right		*						
WB Peds		*						
NB Right					*			
SB Right					*			
Green	15.0A				49.0A			
Yellow/AR	5.0				5.0			
Cycle Length:	75 secs Phase combination order: #1 #5							

Lane	Group:	Intersection Performance Summary						
		Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS
EB	LTR	379	1580	0.332	0.240	15.4	C	15.4 C
WB	LT	431	1797	0.255	0.240	15.0	B	16.9 C
NB	LTR	924	1359	0.314	0.680	3.2	A	3.2 A
SB	L	626	920	0.748	0.680	8.5	B	6.0 B
	TR	1210	1780	0.378	0.680	3.4	A	
Intersection Delay =		8.3 sec/veh						
Lost Time/Cycle, L =		6.0 sec		Critical v/c(x) =		0.702		Intersection LOS = B

Streets: (E-W) Highway 3 (N-S) County Road 19  
 Analyst: Frb File Name: 0115H3AX.HC9  
 Area Type: Other S-27-1 60min  
 Comment: AM Peak Hour Oct. 25, 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1		1	1	<	1	1	<
Volumes	9	324	4	1	732		6	46	2	164	24	10
Lane W (ft)	11.0	12.0	11.0	11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0				0			0		0
Lost Time	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*							
WB Thru	*							
WB Right	*							
WB Peds	*							
NB Right					*			
SB Right					*			
Green	25.0A				15.0A			
Yellow/AR	5.0				5.0			

Cycle Length: 50 secs Phase combination order: #1 #5

Intersection Performance Summary

Lane	Group	Mvmts	Cap	Adj Sat		v/c	g/C	Delay	LOS	Approach:	
				Flow	Ratio					Delay	LOS
EB	L		144	254	0.063	0.540	3.5	A	4.3	A	
	T		959	1776	0.356	0.540	4.3	A			
	R		788	1459	0.005	0.540	3.4	A			
WB	L		362	671	0.003	0.540	3.4	A	9.6	B	
	T		959	1776	0.804	0.540	9.6	B			
NB	L		461	1357	0.013	0.340	7.1	B	7.2	B	
	TR		554	1630	0.090	0.340	7.3	B			
SB	L		456	1342	0.379	0.340	8.3	B	8.1	B	
	TR		547	1608	0.066	0.340	7.2	B			

Intersection Delay = 7.9 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.640

Streets: (E-W) Highway 3 (N-S) County Road 19  
 Analyst: Frb File Name: 0115H3PX.HC9  
 Area Type: Other 8-27-1 60min  
 Comment: PM Peak Hour Oct. 25, 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1		1	1	<	1	1	<
Volumes	13	771	3	1	328		3	37	1	283	54	5
Lane W (ft)	11.0	12.0	11.0	11.0	12.0		10.0	11.0		10.0	11.0	
RTDR Vols			0			0				0		0
Lost Time	13.00	3.00	3.00	13.00	3.00		13.00	3.00	3.00	13.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*							
WB Thru	*							
WB Right	*							
WB Peds	*							
NB Right					*			
SB Right					*			
Green	25.0A				15.0A			
Yellow/AR	5.0				5.0			
Cycle Length:	50 secs Phase combination order: #1 #5							

Intersection Performance Summary									
Lane	Group:	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach:
									Delay
EB	L		376	696	0.037	0.540	3.5	A	9.4 B
	T		1006	1863	0.807	0.540	9.5	B	
	R		827	1531	0.004	0.540	3.4	A	
WB	L		144	257	0.007	0.540	3.4	A	4.3 A
	T		968	1792	0.357	0.540	4.3	A	
NB	L		472	1389	0.006	0.340	7.1	B	7.2 B
	TR		610	1794	0.066	0.340	7.2	B	
SB	L		478	1405	0.624	0.340	10.7	B	10.1 B
	TR		577	1696	0.108	0.340	7.3	B	

Intersection Delay = 8.4 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.736



Streets: (E-W) Highway 3 (N-S) County Road 19  
 Analyst: Frb File Name: 0115H3P6.HC9  
 Area Type: Other 3-21-2 60min  
 Comment: PM Peak Hour 2006

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1		1	1	<	1	1	<
Volumes	15	810	5	5	345		5	45	5	310	60	5
Lane W (ft)	11.0	12.0	11.0	11.0	12.0		10.0	11.0		10.0	11.0	
RTDR Vols			0			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*							
WB Thru	*							
WB Right	*							
WB Peds	*							
NB Right					*			
SB Right					*			
Green	25.0A				15.0A			
Yellow/AR	5.0				5.0			
Cycle Length:	50 secs Phase combination order: #1 #5							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:
Mvmts	Cap	Flow	Ratio	Ratio			Delay LOS
EB	L	358	663	0.045	0.540	3.5	A 11.0 B
	T	1006	1863	0.848	0.540	11.2	B
	R	827	1531	0.006	0.540	3.4	A
WB	L	144	257	0.035	0.540	3.5	A 4.4 A
	T	968	1792	0.375	0.540	4.4	A
NB	L	465	1368	0.011	0.340	7.1	B 7.2 B
	TR	604	1775	0.086	0.340	7.2	B
SB	L	462	1360	0.705	0.340	12.6	B 11.7 B
	TR	577	1698	0.118	0.340	7.3	B

Intersection Delay = 9.6 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.793

Streets: (E-W) Highway 3 (N-S) County Road 19  
 Analyst: Frb File Name: 0115H3P1.HC9  
 Area Type: Other 3-21-2 60min  
 Comment: PM Peak Hour 2011

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1		1	1	<	1	1	<
Volumes	15	850	5	5	360		5	45	5	340	65	5
Lane W (ft)	11.0	12.0	11.0	11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vols			0			0						0
Lost Time	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*				INB Left	*		
EB Thru	*				INB Thru	*		
EB Right	*				INB Right	*		
EB Peds	*				INB Peds	*		
WB Left	*				SB Left	*		
WB Thru	*				SB Thru	*		
WB Right	*				SB Right	*		
WB Peds	*				SB Peds	*		
NE Right					EB Right			
SE Right					WB Right			
Green	25.0A				Green	15.0A		
Yellow/AR	5.0				Yellow/AR	5.0		
Cycle Length:	50 secs Phase combination order: #1 #5							

Intersection Performance Summary										
Approach	Lane	Group	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay LOS
EB	L		343		635	0.047	0.540	3.5	A	13.4 B
	T		1006		1863	0.890	0.540	13.7	B	
	R		827		1531	0.006	0.540	3.4	A	
WB	L		144		257	0.035	0.540	3.5	A	4.5 A
	T		968		1792	0.392	0.540	4.5	A	
NB	L		459		1351	0.011	0.340	7.1	B	7.2 B
	TR		604		1775	0.086	0.340	7.2	B	
SB	L		462		1360	0.774	0.340	15.1	C	13.7 B
	TR		578		1699	0.126	0.340	7.4	B	

Intersection Delay = 11.4 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.845

Streets: (E-W) Highway 3 (N-S) County Road 19  
 Analyst: Frb File Name: 0115H3P2.H09  
 Area Type: Other 3-21-2 80min  
 Comment: PM Peak Hour 2021

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1		1	1	<	1	1	<
Volumes	15	885	5	5	375		5	55	5	375	70	5
Lane W (ft)	11.0	12.0	11.0	11.0	12.0		10.0	11.0		10.0	11.0	
RTDR Vols			0							0		0
Lost Time	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00

Phase Combination	Signal Operations							
	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*				NB Left	*		
EB Right	*				NB Thru	*		
EB Peds	*				NB Right	*		
WB Left	*				WB Peds	*		
WB Thru	*				SB Left	*		
WB Right	*				SB Thru	*		
WB Peds	*				SB Right	*		
NB Right					EB Peds	*		
SB Right					EB Right			
Green	25.0A				WB Right			
Yellow/AR	5.0				Green	15.0A		
Cycle Length:	50 secs	Phase combination order: #1 #5						

Lane	Group:	Intersection Performance Summary					Approach:			
		Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Delay	LOS
EB	L	329		609	0.049	0.540	3.5	A	18.7	C
	T	1006		1863	0.926	0.540	17.0	C		
	R	827		1531	0.006	0.540	3.4	A		
WB	L	144		257	0.035	0.540	3.5	A	4.5	A
	T	968		1792	0.408	0.540	4.5	A		
NB	L	452		1330	0.011	0.340	7.1	B	7.3	B
	TR	605		1779	0.104	0.340	7.3	B		
SB	L	449		1321	0.879	0.340	22.6	C	20.0	C
	TR	578		1700	0.137	0.340	7.4	B		

Intersection Delay = 14.6 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.908