November 3, 2017 Reference No. 086822

Claude Marchand, CET
Senior Engineering Technologist
Ainley & Associates Limited
550 Welham Road
Barrie, ON L4N 8Z7

Dear Mr. Marchand:

Re: County of Simcoe
Environmental Resource Recovery Centre
Traffic Impact Study Addendum

The County of Simcoe (County) continues to pursue the development of the proposed Environmental Resource Recovery Centre (ERRC) located at 2976 Horseshoe Valley Road West in the Township of Springwater (Township). In support of the ERRC, applications for Amendments to the Official Plan and Zoning By-Law were submitted to Township Planning staff on November 18, 2016. In addition to these Amendments, a number of supporting studies were also submitted, including a Traffic Impact Study (TIS) prepared by MMM Group (MMM).

Following the submission of the TIS, review comments were prepared by Ainley & Associates Limited (Ainley) on behalf of the Township and submitted to the County on January 24, 2017. A meeting was also held on June 16, 2017 between the County, the Township, Ainley, and GHD to discuss the TIS review comments.

In response to these comments, MMM has prepared the attached Addendum to the TIS. The Addendum is meant to supplement the original TIS, providing responses to the review comments, as well as, supporting calculations and other information where requested. For ease of reference, review comments have been included with the responses provided in Section 2.0 of the Addendum.

We trust that this Addendum addresses all review comments. To further the Planning process, we kindly request that Ainley provide a response confirming that they are satisfied with the TIS Addendum by Friday, November 17, 2017.

Sincerely,

GHD

Brian Dermody, P. Eng.
Environmental Engineer

BD/sw/2

Encl.

cc: David Parks, MCIP, RPP – Director of Planning, Development and Tourism – County of Simcoe
Brent Spagnol, MCIP, RPP – Director of Planning Services and By-law Enforcement – Township of Springwater
Nathan Westendorp, MCIP, RPP – Manager of Development – County of Simcoe

Attachment
TIS Addendum

MMM GROUP

Prepared for: County of Simcoe

ENVIRONMENTAL RESOURCE RECOVERY CENTRE
2976 HORSESHOE VALLEY ROAD WEST
TOWNSHIP OF SPRINGWATER

TRAFFIC IMPACT STUDY ADDENDUM

16-16057-001-T01 | October 2017

WSP | MMM GROUP

MMM Group Limited
100 Commerce Valley Drive West
Thornhill, ON Canada L3T 0A1
t: 905.882.1100 | f: 905.882.0055

www.mmmgrouplimited.com

October 23, 2017
16M-00480-01 T01

Ms Stephanie Mack, P.Eng.
Special Projects Supervisor
Solid Waste Management
County of Simcoe
1110 Highway 26
Midhurst, ON L0L 1X0

Dear Ms Mack:

Subject: **Traffic Impact Study Addendum**
Proposed Environmental Resource Recovery Centre
2976 Horseshoe Valley Road West
Township of Springwater

1.0 Introduction

WSP | MMM was retained by the Solid Waste Management (SWM) Department of the County of Simcoe to prepare a Traffic Impact Study (TIS) for the proposed Environmental Resource Recovery Centre (ERRC) to be located at 2976 Horseshoe Valley Road West in the Township of Springwater. Following this study, comments prepared by Ainley Group dated January 24, 2017 were received from the Township. This addendum supplements our original TIS and responds to the comments from the review agencies. These comments are replicated in ***bold italics*** in the boxes and our response to each of the comments following thereafter.

2.0 Comments and Responses

(1) Section 2.1 Boundary Roadways
a) The consultant should identify road classification based on the Township's Official Plan (i.e. Gill Road is a collector road. Old Second South Road is an arterial road).
b) For County Road 27 the consultant should specify the number of northbound lanes and southbound lane instead of a three lane cross-section (i.e. two northbound lanes and one southbound lane).

Noted. The associated paragraphs in Section 2.1 are updated as below:

- **Gill Road** is a north-south collector road under the jurisdiction of the Township of Springwater. This road has a two-lane cross-section and a posted speed limit of 60 km/h.

- **County Road 27** is a north-south arterial road with a three-lane cross-section to a point approximately 300 m to the north of County Road 22. There are two northbound lanes and one southbound lane. It has a posted speed limit of 80 km/h.

- **Old Second South Road** is a north-south arterial road under the jurisdiction of the Township of Springwater. This road has a two-lane cross-section, but no posted speed limit signs, so 80 km/h has been assumed.

(2) Figure 2.1 Existing Lane Configurations
a) For the intersection of County Road 22 at County Road 27, a southbound left turn lane is missing.
b) For the intersection of County Road 22 at Highway 400 southbound on/off-ramps, the westbound through-right shared lane should be a westbound through lane and a channelized westbound right turn lane.
c) For the intersection of County Road 22 at Highway 400 northbound on/off-ramps, the northbound left-right shared lane should be a northbound left turn lane and a channelized northbound right turn lane. The eastbound shared through-right lane should be an eastbound through lane and a channelized eastbound right turn lane.

Figure 2.1 has been updated and is appended to this document. Please note that these lane configurations were programmed accurately in our Synchro analysis.

(3) Sections 2.3 Table 2.2 Intersection Capacity Analysis Existing Traffic Conditions
Level of service and delay should also be provided for all lane groups of each intersection in addition to v/c ratio.

The V/C ratios play the most important role in the interpretation of intersection capacity analysis results since they directly relate to the ability of a roadway to physically accommodate the traffic demands during a given time period. The vast majority of review agencies throughout Ontario consistently require of only V/C ratios to be provided. Levels of service and delays for individual lane group are generally ancillary, and only required to be included in the appendices which we have done in this case.

(4) Section 3.0 Site-Generated Traffic
The consultant should specify what SWM stands for.

SWM stands for Solid Waste Management, which was explained in Section 1.0.

(5) Section 3.5 Table 3.6 Traffic Distribution at the Site Access
It doesn't make sense for 95% of the site trucks coming from the west and 100% of them leaving to the east on Highway 400. This is not the worst case scenario as a potentially needed westbound right turn lane on County Road 22 at the site access would not be warranted because of this assumption. If the facility will be serving the whole County, given the location of the facility at the centre of County, site truck trips should be evenly distributed to/from the east, west, north and south. Therefore, the site truck trip distribution should be revised.

For the outbound truck volumes during the peak hours, it has been confirmed with the County that on service days, the majority of them leave the fueling station located near Mapleview Drive East and Bayview Drive in the City of Barrie. They proceed directly to the service area and then on to the proposed ERRC facility thereafter. These trucks only complete a single waste pickup per day, and after unloading their collected materials, they return directly to the fueling station via Highway 400. This is the rationale for assigning 100% of the outbound trips from the ERRC to Horseshoe Valley Road eastbound.

For the inbound truck volumes, their distribution is subject to the location of the service areas. Based on the service map which was provided by the County, these areas differ by weekday, and are not evenly distributed. For example, on Thursdays and Fridays they are primarily located to the southwest and west of the subject site. Therefore, the assumed distribution covered these two days. It is noteworthy that the traffic volumes on Friday were the highest and, therefore, the "worst case scenario" was captured. For the remainder of weekdays, the service areas are not concentrated. For example, on Wednesdays, approximately 40% are to the southwest of the site and 60% are to the east. For Tuesdays, approximately 50% are to the north with the remainder to the east. On Mondays, the service areas are generally evenly distributed to the northwest, northeast and southeast of the site. For these three weekdays, it is not necessary to investigate additional sets of scenarios. The Wednesday scenario whereby 60% of the site traffic is from the east and 40% from the west on County Road 22, can capture the worst case scenario for the intersections to the east of the site access under total future conditions. Applying the largest volume of inbound traffic, which is 61 in the 2049 horizon, results in 36 inbound trips from the east for this scenario. In comparison to the future background traffic, this amount is minimal, and is not expected to have a significant impact on the studied intersections to the east of the access. For the westbound right turn lane, it has been confirmed with the County that a direct taper will be provided at this access.

Detailed explanations of the trip generation of different types of trucks were included in Appendix D of our report. The service area map cannot be provided since it is confidential information.

(6) Figure 3.2 Site-Generated Trips for Staff 2021 Horizon Inbound traffic is missing and should be included.

Based on our consultations with the County, it has been confirmed that staff arrive before the weekday a.m. peak hour, and there is no inbound staff traffic during the weekday p.m. peak hour.

(7) Figure 3.3 Site-Generated Trips for Trucks 2021 Horizon Site PM outbound traffic (45 trucks) does not match with the number shown in Table 3.5 (65 trucks).

Table 3.5 also includes staff traffic which was represented by Categories 7 and 16.

(8) Figure 3.4 Site-Generated Trips for Staff - 2026 & 2031 Horizons Inbound traffic is missing and should be included.

Please see the response to Comment (6).

(9) Figure 3.5 Site-Generated Trips for Trucks 2026 & 2031 Horizons Site PM outbound traffic (67 trucks) does not match with the number shown in Table 3.5 (87 trucks).

Please see the response to Comment (7). It is acknowledged that five additional trucks were shown on Figure 3.5 for the p.m. outbound traffic. However, given the small magnitude of this "overestimate", our conclusions will not be affected.

(10) Sections 4.4 Table 4.3 Intersection Capacity Analysis Future Background Traffic Conditions Level of service and delay should also be provided for all lane groups of each intersection in addition to v/c ratio.

Please see the response to Comment (3).

(11) Section 4.4 Future Background Traffic Conditions

a) Page 21-the paragraph under the Table, "northbound left/through/right movement (NB-LTR)" should read "southbound left/through/right movement (SB-LTR)".

b) The report should point out that a poor level of service "F" occurs on the northbound left turn lane on Highway 400 Northbound off-ramp at County Road 22 during the PM peak hour in the 2026 horizon.

c) The report should address improvement needs for the 2026 and 2031 horizons (i.e. left/right turn lanes, traffic signals, additional through lanes etc.).

a) and b) The associated paragraph is updated as below:

> Under the 2021 and 2026 future background conditions, the majority of the study area intersections are expected to continue operating at a reasonable LOS 'E' or better during all study peak hours. Two exceptions are identified. One is the shared southbound left/through/right movement (SB-LTR) at the Old Second South intersection which has a LOS of 'F' during the Friday p.m. peak period. The other is the northbound left turn movement (NBL) at the Highway 400 north ramp intersection during the p.m. peak period. However, the v/c ratios of 0.33 and 0.61 indicate that ample reserve capacity will be available on these two movements. All of the critical movements identified will still operate well within the available roadway capacity.

c) Given the highly "optimistic" assumptions associated with the background developments, it is premature at this time to investigate the need and timing of road improvements. Therefore, we recommended that traffic conditions within the study area be monitored. Road improvements should be identified through future traffic studies completed for the Site Plan Applications (SPA) for these background developments, or studies initiated by the County.

(12) Section 4.5 Table 4.4 Intersection Capacity Analysis Total Future Traffic Conditions
a) Level of service and delay should also be provided for all lane groups of each intersection in addition to v/c ratio.
b) The percent of heavy vehicles should be revised in the Synchro model based on the number of site truck trips added on the road system

a) Please see the response to Comment (3).
b) The "worst" scenario which is the total future 2031 analysis is updated and summarized in the following table. Detailed Synchro sheets are appended to this document. The updated results are very similar to those included in our study. This is not unexpected given the low volume of site-generated trucks relative to the background traffic. The revisions to truck percentages at the boundary intersections have negligible impacts on our analysis. The original conclusions in our report remain valid.

INTERSECTION CAPACITY ANALYSIS
2031 TOTAL FUTURE TRAFFIC CONDITIONS

Intersections with County Road 22	Control Type	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour		Friday P.M. Peak Hour	
		LOS (Delay) in Seconds	Critical Movements In Bold (v/c)	LOS (Delay) in Seconds	Critical Movements In Bold (v/c)	LOS (Delay) in Seconds	Critical Movements In Bold (v/c)
County Road 27	Signalized	D (44)	EB-L (0.15) EB-TR (0.38) **WB-LTR (1.01)** NB-L (0.33) NB-TR (0.71) SB-L (0.82) **SB-T (0.95)** SB-R (0.09)	F (130)	EB-L (0.20) EB-TR (0.72) **WB-LTR (1.58)** NB-L (0.35) **NB-TR (1.09)** **SB-L (1.35)** **SB-T (0.98)** SB-R (0.06)	F (182)	EB-L (0.19) **EB-TR (0.88)** **WB-LTR (2.01)** NB-L (0.35) **NB-TR (1.25)** **SB-L (1.34)** **SB-T (0.89)** SB-R (0.11)
County Road 93	Signalized	C (25)	EB-L (0.51) EB-TR (0.56) WB-L (0.23) **WB-TR (0.94)** NB-L (0.27) NB-TR (0.26) SB-L (0.39) SB-TR (0.42)	D (38)	**EB-L (1.13)** **EB-TR (0.96)** WB-L (0.80) **WB-TR (0.88)** NB-L (0.12) NB-TR (0.66) SB-L (0.78) SB-TR (0.39)	E (66)	EB-L (0.78) **EB-TR (1.06)** WB-L (0.55) **WB-TR (1.00)** NB-L (0.34) **NB-TR (0.85)** SB-L (0.77) SB-TR (0.32)
Gill Road	Unsignalized	E (36)	EB-LTR (0.01) WB-LTR (0.01) NB-LTR (0.10) **SB-LTR (0.15)**	F (69)	EB-LTR (0.02) WB-LTR (0.03) NB-LTR (0.3) **SB-LTR (0.35)**	F (127)	EB-LTR (0.03) WB-LTR (0.02) NB-LTR (0.14) **SB-LTR (0.61)**
Fox Farm Road	Unsignalized	D (33)	EB-TR (0.31) WB-TL (0.04) NB-LR (0.58)	F (144)	EB-TR (0.63) WB-TL (0.20) **NB-LR (0.94)**	F (375)	EB-TR (0.76) WB-TL (0.24) **NB-LR (1.49)**
Old Second South	Unsignalized	E (37)	EB-LTR (0) WB-LTR (0.01) NB-LTR (0.14) **SB-LTR (0.12)**	F (169)	EB-LTR (0.02) WB-LTR (0.01) **NB-LTR (0.81)** SB-LTR (0.56)	F (370)	EB-LTR (0.01) WB-LTR (0.01) NB-LTR (0.62) **SB-LTR (0.96)**
Hwy 400 South Ramp	Unsignalized	C (21)	EB-TL (0.17) WB-T (0.42) WB-R (0.19) **SB-LR (0.34)**	E (44)	EB-TL (0.28) WB-T (0.44) WB-R (0.14) **SB-LR (0.61)**	F (88)	EB-TL (0.21) WB-T (0.45) WB-R (0.11) **SB-LR (0.84)**
Hwy 400 North Ramp	Unsignalized	F (51)	EB-T (0.24) EB-R (0.05) WB-TL (0.03) **NB-L (0.42)** NB-R (0.28)	F (293)	EB-T (0.44) EB-R (0.07) WB-TL (0.05) **NB-L (1.38)** **NB-R (1.03)**	F (276)	EB-T (0.49) EB-R (0.16) WB-TL (0.05) **NB-L (1.30)** **NB-R (1.08)**

(13) Section 4.5 Total Future Traffic Conditions

a) The report should point out that as a result of the increase in site traffic, a poor level of service "F" occurs on the southbound left/through/right shared lane on Old Second Road at County Road 22 during the Friday PM peak hour in the 2021 horizon and on the southbound left/through/right shared lane on Gill Road at County Road 22

during the Friday PM peak hour in the 2026 horizon.
b) Therefore site traffic triggers improvement needs at the intersection of Old Second Road/County Road 22 in the 2021 horizon and at the Gill Road/County Road 22 intersection in the 2026 horizon.
c) The report should identify any additional improvement needs as a result of the increase in site traffic (i.e. additional turn lane lengths etc.) in the 2026 and 2031 horizon.

a) This is the circumstance where the LOS is 'F' but v/c ratios are relatively low. Relevant discussions were included in Section 2.3 of our original report.
b) In comparison to background traffic, the site-generated traffic represents a very small portion (approximately 0 to 6%) of the total traffic on County Road 22. As noted previously, given the highly "optimistic" assumptions associated with the background developments, it is premature to investigate the need and timing of road improvements at this time.
c) Please see the response above.

(14) Section 5.1 Sightline Assessment
Based on MTO Geometric Design Standards for Ontario Highways and a design speed of 100km/h, sightline should be reduced by 10m for a 3% upgrade and increased by 15m and 30m for a downgrade of 3% and 6% respectively. The easterly sightline 220m is insufficient if the road grade is less than 3%. In this case, a 230 m sightline is required. Similarly the westerly sightline 245m is insufficient if the road grade is more than 3%. In this case, a 260m sightline is required.

The sightline assessment was based on the County's Entrance By-law No. 5544. For the easterly sightline, we agreed that 230 m is required. The increase of 10 m on this sightline does not have an impact on the location of the proposed access since there is no significant change of grade in the immediate area to the east of the location from where the 220 m sightline was measured.

For the westerly sightline, according to the County's By-law, an additional 15 m rather than 30 m is required for instances where a 6% grade exists. Therefore, 245 m is sufficient.

(15) Section 5.2 Lane Configurations
a) Table 5.1 Eastbound Left Turn Lane Warrant Analysis at Site Access needs to be updated based on the updated site truck trip distribution in Comment #5. It is noted that the MTO left turn lane warrant charts are based on passenger car dimensions and operating characteristics. An equivalent factor of 2 and 3 should be applied for an empty truck and loaded truck respectively.
b) The need for a westbound right turn lane on County Road 22 at the site access should be reviewed based on the updated site truck trip distribution in Comment #5.

c) Site entrance design should be in accordance with MTO Commercial Site Access Policy and Standard Designs CSAS23 Truck Access.
d) The report should specify the required truck climbing lane.

a) Given that we have recommended a westbound left turn lane, this will not alter our conclusion.
b) Please see the above response.
c) Noted. This will be included in the SPA stage.
d) Noted. This will be included in the SPA stage.

(16) Section 5.3 Traffic Conditions and Signal Warrant
a) Signal warrant analysis in Appendix L indicates a restricted flow condition. This should be revised to a free flow condition.
b) Given the poor level of service and long delays on the site access in the 2021 horizon during the Friday PM peak hour, a traffic signal should be recommended.
c) Turn lane storage lengths on each approach of the site access should be reassessed based on a signal control condition.

a) The signal warrant analysis has been updated and is appended to this document.
b) We agree. However, given the highly "optimistic" background development assumptions noted earlier, we recommended that "*provisions be made to signalize this intersection. This would include the installation of the necessary underground ducts and handwells to enable signals to be installed in the future. Accordingly, this intersection can be monitored periodically to confirm if the warrants are satisfied."*
c) Queuing information was included in the appendices.

(17) Section 6.0 Conclusions and Recommendations
The report should summarize the road network improvement needs triggered by the background traffic for each horizon as well as the road network improvement needs triggered by the subject site for each horizon.

Please see the response to Comment (11) c).

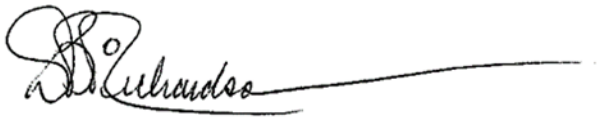
(18) There is an existing off-road/recreational trail running from the southeast corner of site along the north side of County Road 22 to the existing site access and then running through site to Rainbow Valley Road East. The report should include a future plan for this off-road/recreational trail.

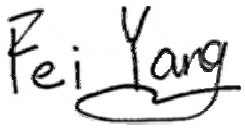
This will be examined during the SPA stage.

We trust that the above adequately addresses the transportation-related issues raised by Ainley Group on behalf of the Township of Springwater in their review of the Official Plan Amendment and Zoning Bylaw Amendment applications for the proposed ERRC. However, should you have any questions or comments, please do not hesitate to contact us at 905-882-7302 or 905-882-4211 ext. 6478 at your convenience.

Yours very truly,

MMM GROUP LIMITED





David B. Richardson, P.Eng., PTOE
Senior Project Manager
Transportation Planning

Fei Yang, M.A.Sc., P.Eng.
Senior Project Engineer
Transportation Planning

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ATTACHMENTS

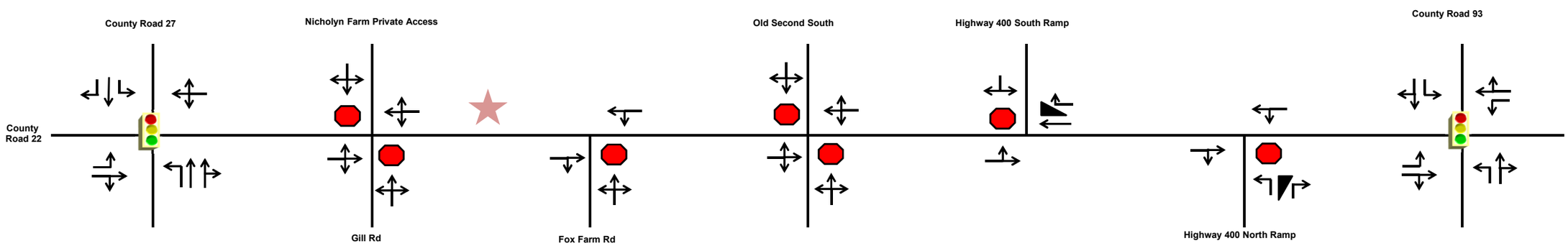

*Figure Not to Scale

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LEGEND

Proposed Site

FIGURE 2.1

Existing Lane Configurations

Lanes, Volumes, Timings
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	275	17	113	498	173	23	584	107	97	503	40
Future Volume (vph)	40	275	17	113	498	173	23	584	107	97	503	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	110.0		0.0	0.0		0.0	130.0		0.0	125.0		110.0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.991			0.970			0.977				0.850
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1700	1523	0	0	1712	0	1417	3292	0	1526	1824	1342
Flt Permitted	0.307				0.887		0.160			0.252		
Satd. Flow (perm)	549	1523	0	0	1529	0	239	3292	0	405	1824	1342
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			24			24				50
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		515.9			1538.1			209.3			305.4	
Travel Time (s)		23.2			69.2			9.4			13.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	21%	43%	4%	6%	6%	26%	3%	22%	17%	3%	19%
Adj. Flow (vph)	42	289	18	119	524	182	24	615	113	102	529	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	307	0	0	825	0	24	728	0	102	529	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Minimum Split (s)	17.1	17.1		17.1	17.1		27.8	27.8		27.8	27.8	27.8
Total Split (s)	54.6	54.6		54.6	54.6		35.4	35.4		35.4	35.4	35.4
Total Split (%)	60.7%	60.7%		60.7%	60.7%		39.3%	39.3%		39.3%	39.3%	39.3%
Maximum Green (s)	47.5	47.5		47.5	47.5		27.6	27.6		27.6	27.6	27.6
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9		5.9	5.9	5.9
All-Red Time (s)	1.2	1.2		1.2	1.2		1.9	1.9		1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.1	7.1			7.1		7.8	7.8		7.8	7.8	7.8
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	47.5	47.5			47.5		27.6	27.6		27.6	27.6	27.6
Actuated g/C Ratio	0.53	0.53			0.53		0.31	0.31		0.31	0.31	0.31
v/c Ratio	0.15	0.38			1.01		0.33	0.71		0.82	0.95	0.09
Control Delay	12.6	14.1			56.2		38.7	31.2		77.3	59.1	6.4
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0

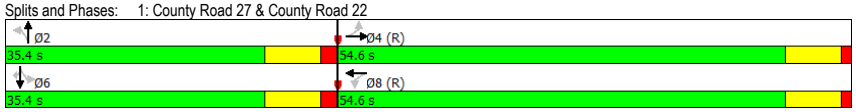
Lanes, Volumes, Timings
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.6	14.1			56.2		38.7	31.2		77.3	59.1	6.4
LOS	B	B			E		D	C		E	E	A
Approach Delay		13.9			56.2			31.5			58.6	
Approach LOS		B			E			C			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 44.0		Intersection LOS: D	
Intersection Capacity Utilization 126.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: County Road 27 & County Road 22



Queues
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	42	307	825	24	728	102	529	42
v/c Ratio	0.15	0.38	1.01	0.33	0.71	0.82	0.95	0.09
Control Delay	12.6	14.1	56.2	38.7	31.2	77.3	59.1	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	14.1	56.2	38.7	31.2	77.3	59.1	6.4
Queue Length 50th (m)	3.7	30.6	~143.6	3.4	59.4	17.1	93.4	0.0
Queue Length 95th (m)	9.7	49.5	#230.0	11.9	80.4	#47.4	#157.3	6.3
Internal Link Dist (m)		491.9	1514.1		185.3		281.4	
Turn Bay Length (m)	110.0			130.0		125.0		110.0
Base Capacity (vph)	289	806	818	73	1026	124	559	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.38	1.01	0.33	0.71	0.82	0.95	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Gill Road & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	481	8	11	762	16	7	2	10	13	3	3
Future Volume (vph)	10	481	8	11	762	16	7	2	10	13	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.9	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997			0.926			0.980	
Flt Protected		0.999			0.999			0.983			0.966	
Satd. Flow (prot)	0	1553	0	0	1765	0	0	1284	0	0	1779	0
Flt Permitted		0.999			0.999			0.983			0.966	
Satd. Flow (perm)	0	1553	0	0	1765	0	0	1284	0	0	1779	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		1538.1			370.7			296.2			94.4	
Travel Time (s)		69.2			16.7			17.8			6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	21%	25%	18%	6%	0%	0%	0%	44%	0%	0%	0%
Adj. Flow (vph)	11	506	8	12	802	17	7	2	11	14	3	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	831	0	0	20	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.11	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

Lanes, Volumes, Timings
3: Fox Farm Road & County Road 22/Country Road 22

15/09/2017

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	474	22	39	725	59	105
Future Volume (vph)	474	22	39	725	59	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.913	
Flt Protected				0.997	0.982	
Satd. Flow (prot)	1662	0	0	1772	1685	0
Flt Permitted				0.997	0.982	
Satd. Flow (perm)	1662	0	0	1772	1685	0
Link Speed (k/h)	80			50	80	
Link Distance (m)	153.6			1063.4	320.8	
Travel Time (s)	6.9			76.6	14.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	12%	20%	0%	6%	0%	0%
Adj. Flow (vph)	499	23	41	763	62	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	522	0	0	804	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			

Lanes, Volumes, Timings
4: Old Second Road

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	573	7	5	763	14	6	8	8	7	5	3
Future Volume (vph)	3	573	7	5	763	14	6	8	8	7	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.951			0.973	
Flt Protected								0.987			0.977	
Satd. Flow (prot)	0	1600	0	0	1771	0	0	1554	0	0	1677	0
Flt Permitted								0.987			0.977	
Satd. Flow (perm)	0	1600	0	0	1771	0	0	1554	0	0	1677	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		1063.4			661.0			398.3			389.2	
Travel Time (s)		76.6			47.6			17.9			17.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	17%	42%	0%	6%	0%	16%	25%	0%	14%	0%	0%
Adj. Flow (vph)	3	603	7	5	803	15	6	8	8	7	5	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	613	0	0	823	0	0	22	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lanes, Volumes, Timings
5: Country Road 22 & Highway 400 South Ramp

15/09/2017

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	113	471	679	307	8	102
Future Volume (vph)	113	471	679	307	8	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.874	
Flt Protected		0.990			0.997	
Satd. Flow (prot)	0	1585	1773	1353	1489	0
Flt Permitted		0.990			0.997	
Satd. Flow (perm)	0	1585	1773	1353	1489	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		661.0	382.0		499.1	
Travel Time (s)		47.6	27.5		35.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	48%	10%	6%	18%	50%	7%
Adj. Flow (vph)	119	496	715	323	8	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	615	715	323	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

Lanes, Volumes, Timings
6: Highway 400 North Ramp & County Road 22

15/09/2017

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	394	80	28	950	52	159
Future Volume (vph)	394	80	28	950	52	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected				0.999	0.950	
Satd. Flow (prot)	1693	1465	0	1721	1653	1365
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	1693	1465	0	1721	1653	1365
Link Speed (k/h)	50			80	50	
Link Distance (m)	382.0			36.2	392.3	
Travel Time (s)	27.5			1.6	28.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	9%	12%	9%	8%	17%
Adj. Flow (vph)	415	84	29	1000	55	167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	415	84	0	1029	55	167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	485	44	75	817	106	70	68	40	115	79	107
Future Volume (vph)	54	485	44	75	817	106	70	68	40	115	79	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0		0.0	185.0		0.0	157.0		0.0	150.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.983			0.945			0.914	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1654	0	1428	1705	0	1750	1633	0	1733	1618	0
Flt Permitted	0.106			0.376			0.592			0.684		
Satd. Flow (perm)	186	1654	0	565	1705	0	1090	1633	0	1248	1618	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			15			35			82	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1121.3			305.8			269.5			271.6	
Travel Time (s)		80.7			22.0			19.4			19.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	13%	4%	25%	9%	3%	2%	8%	10%	3%	9%	4%
Adj. Flow (vph)	57	511	46	79	860	112	74	72	42	121	83	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	557	0	79	972	0	74	114	0	121	196	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	54.0	54.0		54.0	54.0		26.0	26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%		67.5%	67.5%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	48.0	48.0		48.0	48.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	13.0	13.0		13.0	13.0		15.0	15.0		15.0	15.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		48.0	48.0		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.25	0.25		0.25	0.25	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.51	0.56		0.23	0.94		0.27	0.26		0.39	0.42	
Control Delay	30.1	12.1		9.7	34.1		27.5	18.9		29.4	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.1	12.1		9.7	34.1		27.5	18.9		29.4	17.7	
LOS	C	B		A	C		C	B		C	B	
Approach Delay		13.8			32.3			22.3			22.1	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 24.7		Intersection LOS: C	
Intersection Capacity Utilization 110.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: County Road 93 & County Road 22

Queues
7: County Road 93 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	557	79	972	74	114	121	196
v/c Ratio	0.51	0.56	0.23	0.94	0.27	0.26	0.39	0.42
Control Delay	30.1	12.1	9.7	34.1	27.5	18.9	29.4	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	12.1	9.7	34.1	27.5	18.9	29.4	17.7
Queue Length 50th (m)	4.8	47.5	5.3	128.2	9.6	10.0	16.1	14.7
Queue Length 95th (m)	#23.7	75.3	12.8	#226.6	21.2	23.4	31.7	33.4
Internal Link Dist (m)		1097.3		281.8		245.5		247.6
Turn Bay Length (m)	180.0		185.0		157.0		150.0	
Base Capacity (vph)	111	996	339	1029	272	434	312	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.56	0.23	0.94	0.27	0.26	0.39	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
8: County Road 22 & Site Access

15/09/2017

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	47	459	782	3	41	0
Future Volume (vph)	47	459	782	3	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			15.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950				0.950	
Satd. Flow (prot)	892	1678	1767	0	1044	1099
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	892	1678	1767	0	1044	1099
Link Speed (k/h)		80	80		50	
Link Distance (m)		370.7	855.3		443.0	
Travel Time (s)		16.7	38.5		31.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	100%	12%	6%	100%	71%	71%
Adj. Flow (vph)	49	483	823	3	43	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	483	826	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

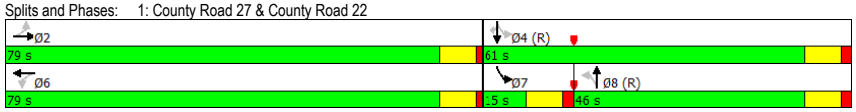
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	577	23	92	437	178	17	758	222	164	648	33
Future Volume (vph)	56	577	23	92	437	178	17	758	222	164	648	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	110.0		0.0	0.0		0.0	130.0		0.0	125.0		110.0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.994			0.966			0.966				0.850
Flt Protected	0.950				0.994		0.950			0.950		
Satd. Flow (prot)	1767	1711	0	0	1712	0	1700	3395	0	1580	1842	1597
Flt Permitted	0.313				0.524		0.105			0.087		
Satd. Flow (perm)	582	1711	0	0	903	0	188	3395	0	145	1842	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			18			27				32
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		515.9			1538.1			209.3			305.4	
Travel Time (s)		23.2			69.2			9.4			13.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	9%	13%	8%	7%	0%	5%	0%	7%	13%	2%	0%
Adj. Flow (vph)	59	607	24	97	460	187	18	798	234	173	682	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	631	0	0	744	0	18	1032	0	173	682	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	17.1	17.1		17.1	17.1		27.8	27.8		12.8	27.8	27.8
Total Split (s)	79.0	79.0		79.0	79.0		46.0	46.0		15.0	61.0	61.0
Total Split (%)	56.4%	56.4%		56.4%	56.4%		32.9%	32.9%		10.7%	43.6%	43.6%
Maximum Green (s)	71.9	71.9		71.9	71.9		38.2	38.2		7.2	53.2	53.2
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9		5.9	5.9	5.9
All-Red Time (s)	1.2	1.2		1.2	1.2		1.9	1.9		1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.1	7.1			7.1		7.8	7.8		7.8	7.8	7.8
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)	71.9	71.9			71.9		38.2	38.2		53.2	53.2	53.2
Actuated g/C Ratio	0.51	0.51			0.51		0.27	0.27		0.38	0.38	0.38
v/c Ratio	0.20	0.72			1.58		0.35	1.09		1.35	0.98	0.06
Control Delay	20.7	31.9			296.4		63.4	103.6		229.7	71.4	9.9
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	20.7	31.9			296.4		63.4	103.6		229.7	71.4	9.9
LOS	C	C			F		E	F		F	E	A
Approach Delay		30.9			296.4			102.9			99.7	
Approach LOS		C			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green			
Natural Cycle: 150			
Control Type: Pretimed			
Maximum v/c Ratio: 1.58			
Intersection Signal Delay: 130.0		Intersection LOS: F	
Intersection Capacity Utilization 146.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: County Road 27 & County Road 22



Queues
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	59	631	744	18	1032	173	682	35
v/c Ratio	0.20	0.72	1.58	0.35	1.09	1.35	0.98	0.06
Control Delay	20.7	31.9	296.4	63.4	103.6	229.7	71.4	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	31.9	296.4	63.4	103.6	229.7	71.4	9.9
Queue Length 50th (m)	9.1	137.6	~306.7	4.3	~175.1	~51.2	194.5	0.5
Queue Length 95th (m)	18.9	186.8	#387.0	13.7	#219.6	#101.5	#278.2	8.1
Internal Link Dist (m)		491.9	1514.1		185.3		281.4	
Turn Bay Length (m)	110.0			130.0		125.0		110.0
Base Capacity (vph)	298	879	472	51	945	128	699	626
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.72	1.58	0.35	1.09	1.35	0.98	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Gill Road & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	964	18	17	703	10	11	3	9	15	0	12
Future Volume (vph)	13	964	18	17	703	10	11	3	9	15	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.9	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.949			0.939	
Flt Protected		0.999			0.999			0.976			0.973	
Satd. Flow (prot)	0	1722	0	0	1787	0	0	1444	0	0	1662	0
Flt Permitted		0.999			0.999			0.976			0.973	
Satd. Flow (perm)	0	1722	0	0	1787	0	0	1444	0	0	1662	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		1538.1			370.7			296.2			94.4	
Travel Time (s)		69.2			16.7			17.8			6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	9%	5%	0%	5%	0%	0%	0%	33%	6%	0%	0%
Adj. Flow (vph)	14	1015	19	18	740	11	12	3	9	16	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1048	0	0	769	0	0	24	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.11	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 68.0% ICU Level of Service C
Analysis Period (min) 15

Lanes, Volumes, Timings
3: Fox Farm Road & County Road 22/Country Road 22

15/09/2017

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	958	65	117	690	35	63
Future Volume (vph)	958	65	117	690	35	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.913	
Flt Protected				0.993	0.982	
Satd. Flow (prot)	1747	0	0	1774	1685	0
Flt Permitted				0.993	0.982	
Satd. Flow (perm)	1747	0	0	1774	1685	0
Link Speed (k/h)	80			50	80	
Link Distance (m)	153.6			1063.4	320.8	
Travel Time (s)	6.9			76.6	14.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	0%	12%	4%	0%	0%
Adj. Flow (vph)	1008	68	123	726	37	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1076	0	0	849	103	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		

Lanes, Volumes, Timings
4: Old Second Road

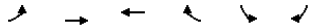
15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	988	12	6	783	48	14	24	11	10	9	5
Future Volume (vph)	13	988	12	6	783	48	14	24	11	10	9	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.992			0.969			0.973	
Flt Protected		0.999						0.986			0.978	
Satd. Flow (prot)	0	1674	0	0	1795	0	0	1725	0	0	1643	0
Flt Permitted		0.999						0.986			0.978	
Satd. Flow (perm)	0	1674	0	0	1795	0	0	1725	0	0	1643	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		1063.4			661.0			398.3			389.2	
Travel Time (s)		76.6			47.6			17.9			17.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	12%	16%	16%	4%	0%	7%	0%	9%	20%	0%	0%
Adj. Flow (vph)	14	1040	13	6	824	51	15	25	12	11	9	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1067	0	0	881	0	0	52	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

Lanes, Volumes, Timings
5: Country Road 22 & Highway 400 South Ramp

15/09/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	184	821	712	221	12	116
Future Volume (vph)	184	821	712	221	12	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.878	
Flt Protected		0.991			0.995	
Satd. Flow (prot)	0	1675	1824	1581	1589	0
Flt Permitted		0.991			0.995	
Satd. Flow (perm)	0	1675	1824	1581	1589	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		661.0	382.0		499.1	
Travel Time (s)		47.6	27.5		35.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	43%	4%	3%	1%	25%	1%
Adj. Flow (vph)	194	864	749	233	13	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1058	749	233	135	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 108.7%		ICU Level of Service G	
Analysis Period (min) 15			

Lanes, Volumes, Timings
6: Highway 400 North Ramp & County Road 22

15/09/2017

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	707	111	38	789	136	406
Future Volume (vph)	707	111	38	789	136	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected				0.998	0.950	
Satd. Flow (prot)	1824	1581	0	1802	1785	1566
Flt Permitted				0.998	0.950	
Satd. Flow (perm)	1824	1581	0	1802	1785	1566
Link Speed (k/h)	50			80	50	
Link Distance (m)	382.0			36.2	392.3	
Travel Time (s)	27.5			1.6	28.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	5%	4%	0%	2%
Adj. Flow (vph)	744	117	40	831	143	427
Shared Lane Traffic (%)						
Lane Group Flow (vph)	744	117	0	871	143	427
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	928	69	68	689	197	29	114	198	123	82	93
Future Volume (vph)	157	928	69	68	689	197	29	114	198	123	82	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0		0.0	185.0		0.0	157.0		0.0	150.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.967			0.905			0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	1826	0	1733	1743	0	1623	1676	0	1785	1674	0
Flt Permitted	0.131			0.083			0.615			0.355		
Satd. Flow (perm)	244	1826	0	151	1743	0	1050	1676	0	667	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			32			104			68	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1121.3			305.8			269.5			271.6	
Travel Time (s)		80.7			22.0			19.4			19.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	0%	3%	4%	5%	10%	4%	0%	0%	7%	0%
Adj. Flow (vph)	165	977	73	72	725	207	31	120	208	129	86	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	165	1050	0	72	932	0	31	328	0	129	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	54.0	54.0		54.0	54.0		26.0	26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%		67.5%	67.5%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	48.0	48.0		48.0	48.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	13.0	13.0		13.0	13.0		15.0	15.0		15.0	15.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		48.0	48.0		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.25	0.25		0.25	0.25	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.13	0.96		0.80	0.88		0.12	0.66		0.78	0.39	
Control Delay	136.9	35.4		73.5	25.2		24.7	25.4		60.9	18.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	136.9	35.4		73.5	25.2		24.7	25.4		60.9	18.4	
LOS	F	D		E	C		C	C		E	B	
Approach Delay		49.2			28.7			25.4			35.9	
Approach LOS		D			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 122.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: County Road 93 & County Road 22

Queues
7: County Road 93 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	165	1050	72	932	31	328	129	184
v/c Ratio	1.13	0.96	0.80	0.88	0.12	0.66	0.78	0.39
Control Delay	136.9	35.4	73.5	25.2	24.7	25.4	60.9	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.9	35.4	73.5	25.2	24.7	25.4	60.9	18.4
Queue Length 50th (m)	~31.0	141.7	8.0	111.1	3.8	31.7	19.2	15.0
Queue Length 95th (m)	#45.8	#243.5	#35.1	#205.6	10.8	60.2	#49.2	33.0
Internal Link Dist (m)		1097.3		281.8		245.5		247.6
Turn Bay Length (m)	180.0		185.0		157.0		150.0	
Base Capacity (vph)	146	1098	90	1058	262	497	166	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.96	0.80	0.88	0.12	0.66	0.78	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
8: County Road 22 & Site Access

15/09/2017

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	934	721	4	85	8
Future Volume (vph)	58	934	721	4	85	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			15.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	892	1824	1796	0	1044	934
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	892	1824	1796	0	1044	934
Link Speed (k/h)		80	80		50	
Link Distance (m)		370.7	855.3		443.0	
Travel Time (s)		16.7	38.5		31.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	100%	3%	4%	100%	71%	71%
Adj. Flow (vph)	61	983	759	4	89	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	983	763	0	89	8
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lanes, Volumes, Timings
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	733	16	80	448	165	27	831	233	163	570	66
Future Volume (vph)	57	733	16	80	448	165	27	831	233	163	570	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	110.0		0.0	0.0		0.0	130.0		0.0	125.0		110.0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.997			0.968			0.967				0.850
Flt Protected	0.950				0.994		0.950			0.950		
Satd. Flow (prot)	1767	1702	0	0	1714	0	1700	3407	0	1580	1842	1597
Flt Permitted	0.321				0.390		0.177			0.091		
Satd. Flow (perm)	597	1702	0	0	673	0	317	3407	0	151	1842	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			17			25				69
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		515.9			1538.1			209.3			305.4	
Travel Time (s)		23.2			69.2			9.4			13.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	10%	13%	8%	7%	0%	5%	0%	6%	13%	2%	0%
Adj. Flow (vph)	60	772	17	84	472	174	28	875	245	172	600	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	789	0	0	730	0	28	1120	0	172	600	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	17.1	17.1		17.1	17.1		27.8	27.8		12.8	27.8	27.8
Total Split (s)	81.0	81.0		81.0	81.0		44.0	44.0		15.0	59.0	59.0
Total Split (%)	57.9%	57.9%		57.9%	57.9%		31.4%	31.4%		10.7%	42.1%	42.1%
Maximum Green (s)	73.9	73.9		73.9	73.9		36.2	36.2		7.2	51.2	51.2
Yellow Time (s)	5.9	5.9		5.9	5.9		5.9	5.9		5.9	5.9	5.9
All-Red Time (s)	1.2	1.2		1.2	1.2		1.9	1.9		1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.1	7.1			7.1		7.8	7.8		7.8	7.8	7.8
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)	73.9	73.9			73.9		36.2	36.2		51.2	51.2	51.2
Actuated g/C Ratio	0.53	0.53			0.53		0.26	0.26		0.37	0.37	0.37
v/c Ratio	0.19	0.88			2.01		0.35	1.25		1.34	0.89	0.11
Control Delay	19.4	41.8			487.4		56.3	162.0		227.5	58.7	6.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	19.4	41.8			487.4		56.3	162.0		227.5	58.7	6.7
LOS	B	D			F		E	F		F	E	A
Approach Delay		40.3			487.4			159.4			89.0	
Approach LOS		D			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green			
Natural Cycle: 150			
Control Type: Pretimed			
Maximum v/c Ratio: 2.01			
Intersection Signal Delay: 181.6		Intersection LOS: F	
Intersection Capacity Utilization 149.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: County Road 27 & County Road 22

Queues
1: County Road 27 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	60	789	730	28	1120	172	600	69
v/c Ratio	0.19	0.88	2.01	0.35	1.25	1.34	0.89	0.11
Control Delay	19.4	41.8	487.4	56.3	162.0	227.5	58.7	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	41.8	487.4	56.3	162.0	227.5	58.7	6.7
Queue Length 50th (m)	8.9	196.3	~227.7	6.7	~211.3	~50.7	163.7	0.0
Queue Length 95th (m)	18.6	#285.2	#307.4	17.8	#256.1	#100.4	#234.1	10.5
Internal Link Dist (m)		491.9	1514.1		185.3		281.4	
Turn Bay Length (m)	110.0			130.0		125.0		110.0
Base Capacity (vph)	315	898	363	81	899	128	673	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.88	2.01	0.35	1.25	1.34	0.89	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
2: Gill Road & County Road 22

15/09/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	1155	10	13	743	17	3	2	2	18	1	18
Future Volume (vph)	21	1155	10	13	743	17	3	2	2	18	1	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.9	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.997			0.961			0.934	
Flt Protected		0.999			0.999			0.979			0.976	
Satd. Flow (prot)	0	1739	0	0	1786	0	0	1649	0	0	1664	0
Flt Permitted		0.999			0.999			0.979			0.976	
Satd. Flow (perm)	0	1739	0	0	1786	0	0	1649	0	0	1664	0
Link Speed (k/h)		80			80			60			50	
Link Distance (m)		1538.1			370.7			296.2			94.4	
Travel Time (s)		69.2			16.7			17.8			6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	8%	5%	0%	5%	0%	0%	0%	0%	6%	0%	0%
Adj. Flow (vph)	22	1216	11	14	782	18	3	2	2	19	1	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1249	0	0	814	0	0	7	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.11	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1165	62	115	739	37	67
Future Volume (vph)	1165	62	115	739	37	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.913	
Flt Protected				0.993	0.983	
Satd. Flow (prot)	1719	0	0	1776	1686	0
Flt Permitted				0.993	0.983	
Satd. Flow (perm)	1719	0	0	1776	1686	0
Link Speed (k/h)	80			50	80	
Link Distance (m)	153.6			1063.4	320.8	
Travel Time (s)	6.9			76.6	14.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	0%	12%	4%	0%	0%
Adj. Flow (vph)	1226	65	121	778	39	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1291	0	0	899	110	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	126.5%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1222	8	7	833	23	5	16	9	14	5	6
Future Volume (vph)	4	1222	8	7	833	23	5	16	9	14	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996			0.961			0.969	
Flt Protected								0.992			0.972	
Satd. Flow (prot)	0	1706	0	0	1800	0	0	1727	0	0	1587	0
Flt Permitted								0.992			0.972	
Satd. Flow (perm)	0	1706	0	0	1800	0	0	1727	0	0	1587	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		1063.4			661.0			398.3			389.2	
Travel Time (s)		76.6			47.6			17.9			17.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	10%	16%	16%	4%	0%	7%	0%	9%	20%	0%	0%
Adj. Flow (vph)	4	1286	8	7	877	24	5	17	9	15	5	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1298	0	0	908	0	0	31	0	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Lanes, Volumes, Timings
5: Country Road 22 & Highway 400 South Ramp

15/09/2017

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	163	1066	730	184	16	117
Future Volume (vph)	163	1066	730	184	16	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.881	
Flt Protected		0.993			0.994	
Satd. Flow (prot)	0	1702	1824	1581	1583	0
Flt Permitted		0.993			0.994	
Satd. Flow (perm)	0	1702	1824	1581	1583	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		661.0	382.0		499.1	
Travel Time (s)		47.6	27.5		35.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	10%	3%	1%	25%	1%
Adj. Flow (vph)	172	1122	768	194	17	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1294	768	194	140	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 121.6%		ICU Level of Service H	
Analysis Period (min) 15			

Lanes, Volumes, Timings
6: Highway 400 North Ramp & County Road 22

15/09/2017

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	792	257	40	779	113	378
Future Volume (vph)	792	257	40	779	113	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected				0.998	0.950	
Satd. Flow (prot)	1824	1581	0	1802	1785	1566
Flt Permitted				0.998	0.950	
Satd. Flow (perm)	1824	1581	0	1802	1785	1566
Link Speed (k/h)	50			80	50	
Link Distance (m)	382.0			36.2	87.6	
Travel Time (s)	27.5			1.6	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	5%	4%	0%	2%
Adj. Flow (vph)	834	271	42	820	119	398
Shared Lane Traffic (%)						
Lane Group Flow (vph)	834	271	0	862	119	398
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

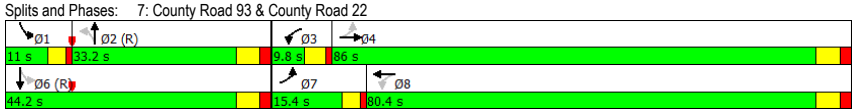
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.5%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	987	68	62	711	178	69	133	156	127	67	82
Future Volume (vph)	146	987	68	62	711	178	69	133	156	127	67	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0		0.0	185.0		0.0	157.0		0.0	150.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.970			0.919			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	1826	0	1733	1749	0	1623	1695	0	1785	1672	0
Flt Permitted	0.051			0.054			0.657			0.189		
Satd. Flow (perm)	95	1826	0	99	1749	0	1122	1695	0	355	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			14			37			43	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1121.3			305.8			269.5			271.6	
Travel Time (s)		80.7			22.0			19.4			19.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	0%	3%	4%	5%	10%	4%	0%	0%	7%	0%
Adj. Flow (vph)	154	1039	72	65	748	187	73	140	164	134	71	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	1111	0	65	935	0	73	304	0	134	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.5	24.0		9.5	24.0		26.0	26.0		9.5	26.0	
Total Split (s)	15.4	86.0		9.8	80.4		33.2	33.2		11.0	44.2	
Total Split (%)	11.0%	61.4%		7.0%	57.4%		23.7%	23.7%		7.9%	31.6%	
Maximum Green (s)	11.4	80.0		5.3	74.4		27.2	27.2		7.0	38.2	
Yellow Time (s)	3.0	4.0		3.5	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.5	6.0		6.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Walk Time (s)		13.0			13.0		15.0	15.0			15.0	
Flash Dont Walk (s)		5.0			5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	91.8	80.0		81.2	74.4		27.2	27.2		40.2	38.2	
Actuated g/C Ratio	0.66	0.57		0.58	0.53		0.19	0.19		0.29	0.27	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.78	1.06		0.55	1.00		0.34	0.85		0.77	0.32	
Control Delay	57.0	76.0		33.0	61.5		53.7	69.2		69.4	31.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	57.0	76.0		33.0	61.5		53.7	69.2		69.4	31.2	
LOS	E	E		C	E		D	E		E	C	
Approach Delay		73.7			59.7			66.2			48.8	
Approach LOS		E			E			E			D	

Intersection Summary		
Area Type:	Other	
Cycle Length: 140		
Actuated Cycle Length: 140		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 130		
Control Type: Pretimed		
Maximum v/c Ratio: 1.06		
Intersection Signal Delay: 65.5		Intersection LOS: E
Intersection Capacity Utilization 112.3%		ICU Level of Service H
Analysis Period (min) 15		

Splits and Phases: 7: County Road 93 & County Road 22



Queues
7: County Road 93 & County Road 22

15/09/2017

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	1111	65	935	73	304	134	157
v/c Ratio	0.78	1.06	0.55	1.00	0.34	0.85	0.77	0.32
Control Delay	57.0	76.0	33.0	61.5	53.7	69.2	69.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	76.0	33.0	61.5	53.7	69.2	69.4	31.2
Queue Length 50th (m)	27.4	~355.9	6.4	261.7	18.5	76.6	30.2	26.2
Queue Length 95th (m)	#63.6	#441.1	18.6	#363.7	34.9	#126.8	#60.5	47.2
Internal Link Dist (m)		1097.3		281.8		245.5		247.6
Turn Bay Length (m)	180.0		185.0		157.0		150.0	
Base Capacity (vph)	198	1045	119	936	217	359	173	487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.06	0.55	1.00	0.34	0.85	0.77	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
8: County Road 22 & Site Access

15/09/2017

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	1120	769	4	85	8
Future Volume (vph)	58	1120	769	4	85	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			15.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	892	1824	1797	0	1044	934
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	892	1824	1797	0	1044	934
Link Speed (k/h)		80	80		50	
Link Distance (m)		370.7	855.3		443.0	
Travel Time (s)		16.7	38.5		31.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	100%	3%	4%	100%	71%	71%
Adj. Flow (vph)	61	1179	809	4	89	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	1179	813	0	89	8
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

PROJECTED TRAFFIC SIGNAL WARRANT ANALYSIS FORM FOR INTERSECTION CONTROL

Minimum warrants for installation of traffic signal for roadways with two or more lanes per **OTM Book 12 Sec 4.10**

*NOTES: Does not consider pedestrian crossing volumes, which need to be added where appropriate and available
Only Projected Warrants can be conducted with Peak Hour counts; remaining warrants require 8 hours

Major Street:	East-West	Analyst:	FY
Minor Street:	North-South	Date:	16-Nov-16
Comments:		Project No.:	(PROJECT NUMBER)

FREE FLOW OR RESTRICTED CONDITIONS (FF or RES): FF

FREE FLOW CONDITIONS (RURAL)
RESTRICTED FLOW CONDITIONS (URBAN)

Major Street Approach Lanes:	1	
Three or four legged intersection (3 or 4)	3	
Future Condition (YES or NO):	YES	Locked for Projected Signal Warrant Analysis
New Intersection (YES or NO):	YES	Locked for Projected Signal Warrant Analysis
Intersection ID	8	
Source Data Table AM	TF_2031_AM	
Source Data Table PM	TF_2031_PM_Friday	

WARRANT 1

ALL APPROACHES

	PERCENTAGE WARRANT								TOTAL
HOUR ENDING	AM PEAK	PM PEAK							
Volumes	666	1022							
Minimum: 720									
100% FULFILLED	0	1	0	0	0	0	0	0	0
Minimum: 863									
80% FULFILLED	0	1	0	0	0	0	0	0	0.8
Actual if Below 80% Value	0.62		-	-	-	-	-	-	0.62
									1.42
									Sectional Percentage **71%**

MINOR STREET BOTH APPROACHES

	PERCENTAGE WARRANT								TOTAL
HOUR ENDING	AM PEAK	PM PEAK							
Volumes	21	47							
Minimum: 383									
100% FULFILLED	0	0	0	0	0	0	0	0	0
Minimum: 304									
80% FULFILLED	0	0	0	0	0	0	0	0	0
Actual if Below 80% Value	0.05	0.12	-	-	-	-	-	-	0.18
									0.18
									Sectional Percentage **9%**
									Entire Warrant 1 Percentage **9%**

WARRANT 2

MAJOR STREET BOTH APPROACHES

	PERCENTAGE WARRANT								TOTAL
HOUR ENDING	AM PEAK	PM PEAK							
Volumes	646	976							
Minimum: 1080									
100% FULFILLED	0	0	0	0	0	0	0	0	0
Minimum: 863									
80% FULFILLED	0	1	0	0	0	0	0	0	0.8
Actual if Below 80% Value	0.60		-	-	-	-	-	-	0.60
									1.40
									Sectional Percentage **70%**

TRAFFIC CROSSING MAJOR STREET

	PERCENTAGE WARRANT								TOTAL
HOUR ENDING	AM PEAK	PM PEAK							
Volumes	41	85							
Minimum: 113									
100% FULFILLED	0	0	0	0	0	0	0	0	0
Minimum: 90									
80% FULFILLED	0	0	0	0	0	0	0	0	0
Actual if Below 80% Value	0.36	0.76	-	-	-	-	-	-	1.12
									1.12
									Sectional Percentage **56%**
									Entire Warrant 2 Percentage **56%**

ARE SIGNALS WARRANTED AT THIS INTERSECTION? **NO**