# TRAFFIC IMPACT STUDY HUNTINGWOOD TRAILS HUNTINGWOOD TRAILS (COLLINGWOOD) LTD.

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#### 1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Huntingwood Trails (Collingwood) Ltd. to undertake a Traffic Impact Study (TIS) in support of an official plan amendment for a proposed residential development in the Town of Collingwood. The 49 hectare property is located south of Highway 26 and Silver Creek Drive, north of the Georgian Trail, and lies astride of Silver Creek. The site is also bordered by two existing subdivisions to the east and west, namely: "Silver Glen Preserve" and "The Forest", respectively. Figure 1 illustrates the site location.

#### 1.1. Development Proposal

The development will consist of a mix of residential uses with a commercial building, intended to serve local area residents. For the purposes of this TIS, the draft plan DP3 prepared by D.C. Slade Consultants Inc. has been used in the analysis, and is shown in Figure 2. Since the time of analysis, an updated draft plan (DP4) has been produced, with a reduction of 30 residential units. This reduction will not have a material effect on the conclusions and recommendations contained herein.

Table 1 provides information on the various uses and the corresponding Institute of Transportation Engineers (ITE) land use codes used for trip generation.

Table 1
Development Components

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Type/Block	Area	Units	ITE Code	ITE Category
Single Detached Lots / Block N/A	West	60	210	Single-Family Detached Housing
Semi Detached Units / Block 1	West	14	210	Single-Family Detached Housing
Townhouses / Blocks 2 & 3	West	30	230	Residential Condominium/Townhouse
Single Family Lots / Block N/A	East	39	210	Single-Family Detached Housing
Walk-up Apartment Buildings / Block 5	East	180	220	Apartment
Local Commercial / Block 7	East	450 m² / 4,844 ft²	820	Shopping Centre
Townhouses / Blocks 8, 9 & 10	East	120	230	Residential Condominium/Townhouse
Single Detached Lots / Block 11	East	33	210	Single-Family Detached Housing
Seniors Complex / Block 12	East	50	252	Senior Adult Housing – Detached
Community Centre	East	N/A	N/A	N/A

Two distinct accesses to the site are proposed. The lands to the west of Silver Creek will be accessed through a two-lane roadway intersecting Silver Creek Drive. The lands to the east of Silver Creek will be

accessed through a two-lane roadway intersecting Silver Glen Boulevard. The east lands roadway will be contained within a 30 metre right-of-way, to facilitate potential additional travel lanes (refer to Section 5.4).

The study has been completed in accordance with the procedures set out in the Institute of Transportation Engineers (ITE) "Transportation Impact Analyses for Site Development" 2005 guide, with the associated analysis and findings outlined herein.

#### 2.0 Existing Conditions

#### 2.1. Boundary Road Network

Highway 26 is a two-lane east-west highway under the jurisdiction of the Town of Collingwood. The roadway has a rural cross-section. The speed limit transitions at a point approximately 100 metres west of Silver Glen Boulevard from 60 km/h (west) to 50 km/h (east).

County Road 21 (Osler Bluff Road), located west of the property, is a two-lane north-south arterial roadway under the jurisdiction of Grey County. The roadway has a rural cross-section and the posted speed limit is 60 km/h.

Silver Creek Drive is a two-lane east-west local roadway under the jurisdiction of the Town of Collingwood. The roadway has a rural cross-section and the posted speed limit is 50 km/h.

Forest Drive is a two-lane local roadway located west of the site under the jurisdiction of the Town of Collingwood. The roadway has a rural cross-section and the posted speed limit is 50 km/h.

Silver Glen Boulevard is a two-lane north south local roadway with an urban cross-section. It is owned by the developers of the Silver Glen Preserve. The roadway is to be dedicated to the Town of Collingwood upon full build-out of the development and the associated maintenance period.

The critical intersections selected for analysis reflect the anticipated future route of drivers to the arterial roadway system, namely Highway 26 and County Road 21.

The three-legged intersection of Highway 26 and Silver Creek Drive is unsignalized. The south approach (Silver Creek Drive) is stop-controlled and consists of a shared left turn/right turn lane. Insufficient pavement width exists to allow simultaneous left and right turns. No restrictions to free flow are placed on the east and west approaches (Highway 26). The east approach consists of a left turn/through lane while the west approach consists of a through lane and a right-turn taper.

The three-legged intersection of County Road 21 and Forest Drive is unsignalized. The east approach (Forest Drive) is stop-controlled and consists of a shared left turn/right turn lane. Insufficient pavement width exists to allow simultaneous left and right turns. No restrictions to free flow are placed on the north and south approaches (County Road 21). The north approach consists of a shared left turn/through lane while the south approach consists of shared through/right turn lane.

The three-legged intersection of Highway 26 and Silver Glen Boulevard is unsignalized. The south approach (Silver Glen Boulevard) is stop-controlled and consists of a shared left turn/right turn lane.

Sufficient pavement width exists to allow simultaneous left and right turns. No restrictions to free flow are placed on the east and west approaches (Highway 26). The east approach consists of a through lane and left turn lane. The west approach consists of a through lane and a right turn taper. Future improvements will be undertaken to this intersection with the development of the Preserve at Georgian Bay, a proposed residential development located on the north side of Highway 26, and are described in Section 3.2.

#### 2.2. Traffic Data

Turning movement counts were undertaken by Crozier staff at the boundary road intersections from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m. on Thursday, August 7, 2008. This traffic data provides the typical roadway peak traffic conditions through these intersections.

The a.m. peak hour was found to be 8:00 to 9:00 a.m. at both intersections while the p.m. peak hour was found to be 4:30 to 5:30 p.m. at Highway 26/Silver Creek Drive and 4:15 to 5:15 p.m. at County Road 21/Forest Drive.

No turning movement counts were undertaken at the intersection of Highway 26 and Silver Glen Boulevard as this intersection serves very few occupied residential homes (i.e. less than 15 at the time of this study). Future traffic data for the intersection was interpolated from the witness statement of the author for the Ontario Municipal Board hearing for the Preserve at Georgian Bay (OMB Case File No. PL040510)

The traffic data contained in Appendix B provides a summary of the turning movement counts. The existing peak hour traffic volumes are outlined in Figure 3.

#### 2.3. Intersection Operations

The operations of the critical intersections were analyzed on the basis of the existing traffic volumes illustrated in Figure 3. Detailed capacity analysis worksheets are included in Appendix C.

Peak hour factors for turning movements were calculated from the field counts. Peak hour factors are an adjustment to traffic volumes to reflect that the flow of traffic is not homogenous, and that a peak 15 minute flow occurs within the peak hour. The intersection is assessed on the peak 15 minute flows of each movement. A minimum peak hour factor of 0.7 was used in this analysis.

The assessment of unsignalized intersections is based on the method outlined in the "Highway Capacity Manual", 2000. Synchro 7 Light modeling software was used for this analysis. The Level of Service (LOS) definitions for intersections are included in Appendix A.

Table 1 outlines the existing Levels of Service.

Table 2
2008 Existing Traffic Levels of Service

Intersection	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver Creek Drive	A.M.	В	11.1 s	0.8 m	0.04
	P.M.	В	11.4 s	1.0 m	0.04
County Road 21 and Forest	A.M.	А	9.4 s	0.4 m	0.02
Drive	P.M.	А	9.8 s	0.4 m	0.02

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement.

As indicated in Table 1, the subject intersections operate at a LOS "B" or better in both the a.m. and the p.m. peak hour. The 95th percentile queue lengths are one vehicle, and the volume-to-capacity ratios are very low.

#### 3.0 Future Background Traffic

#### 3.1. Study Horizon

Due to the relatively large scale of this development, horizon years of the full-build out, along with five and ten years thereafter were selected for analysis. An initial ten year horizon was considered to be feasible to capture the full build-out of the development, thus horizon years of 2021, 2026 and 2031 were used in the analysis.

A phasing plan for the development had not been formulated at the time of the study, therefore, no intermediary horizon years have been analyzed.

#### 3.2. Future Roadway Improvements

Improvements to the intersection of Highway 26 and Silver Glen Boulevard have been proposed as part of the Preserve at Georgian Bay Residential development. It is proposed that this development will access Highway 26 as the north approach to this intersection, and that the intersection be signalized.

The timing of the signalization improvement is unknown, however, the analysis of the 2021, 2026 and 2031 horizon years has assumed that the intersection is signalized.

#### 3.3. Traffic Growth Rates

Traffic growth rates were based on the "Highway 26 Corridor Collingwood Area Study Design Traffic Operations Report", May 2004, prepared by McCormick Rankin Corporation. This report was a comprehensive examination of the future transportation demands in Collingwood driven by growth in population, tourism and projected development. The report forecasted ten (2013) and twenty year (2023) demands on major routes in the area, including Highway 26. Excerpts of this report were provided by Town of Collingwood staff.

The report provided traffic volume forecasts for the nearby intersection of Highway 26 and County Road 21 to the west of the subject development. Growth rates were calculated from these forecasts. A compound growth rate of 5.2 percent was calculated for Highway 26 and a compound growth rate of 4.4 percent was calculated for County Road 21. For the years following 2023, a more typical industry standard 2 percent growth rate was used.

No background growth rates were applied to volumes on Silver Creek Drive and Forest Drive. With the exception of the subject development, these roadways serve mature neighbourhoods. The calculated 2021, 2026 and 2031 corridor growth traffic volumes are illustrated in Figures 4, 5 and 6, respectively.

The site location is in close proximity to the "Silver Glen Preserve" and "The Preserve at Georgian Bay" developments. These developments will both access the Highway 26 and Silver Glen Boulevard intersection. Information regarding the timing of the full-build out of these developments was unavailable. As such, it was assumed that these developments would be complete by the 2021 horizon year. The increased traffic volumes associated with these developments, available from "The Preserve at Georgian Bay Traffic Impact Study", Crozier, 2007, are illustrated in Figure 7.

The calculated 2021, 2026 and 2021 future background traffic volumes are illustrated in Figures 8, 9 and 10, and constitute the sum of the corridor growth rates and the development specific volumes.

#### 3.4. Intersection Operations

The operations of the critical intersections were analyzed on the basis of the traffic volumes illustrated in Figure 6. The intersection of Highway 26 and Silver Glen Boulevard was modeled as a semi-actuated system, with intergreen periods as prescribed in the ITE "Canadian Capacity Guide for Signalized Intersections", 1995. All approaches were assumed to consist of a left turn lane and a shared through/right turn lane, excepting the eastbound approach which was assumed to consist of a left-turn lane, a through lane and a right-turn taper.

Peak hour factors of 0.9 were used in the analysis of future background traffic conditions. The 0.9 peak hour factor is an industry standard in the assessment of intersections, and reflects the inherent uncertainty of forecasted traffic volumes.

Table 3, 4 and 5 outlines the year 2021, 2026 and 2031 future background traffic levels of service, respectively. Detailed capacity analysis worksheets are included in Appendix C.

Table 3
2021 Future Background Traffic Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver Glen	Future	A.M.	Α	9.3 s	••	0.66
Boulevard	Signal	P.M.	А	9.6 s	**	0.80
Highway 26 and	Stop	A.M.	В	15.0 s	1.0 m	0.04
Silver Creek Drive	Siop	P.M.	С	18.3 s	1.7 m	0.07
County Road 21	Stop	A.M.	А	9.7 s	0.3 m	0.01
and Forest Drive		P.M.	В	10.4 s	0.3 m	0.01

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

Table 4
2026 Future Background Traffic Levels of Service

				C		
Intersection	Control	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver Glen	Future	A.M.	В	10.4 s	pa.	0.72
Boulevard	Signal	P.M.	В	12.6 s	<del>-</del>	0.86
Highway 26 and	Stop	A.M.	С	17.2 s	1.3 m	0.05
Silver Creek Drive	ЭЮр	P.M.	С	22.9 s	2.2 m	0.09
County Road 21	Stop	A.M.	Α	9.9 s	0.3 m	0.02
and Forest Drive		P.M.	В	10.8 s	0.4 m	0.02

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

Table 5
2031 Future Background Traffic Levels of Service

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Intersection	Control	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver Glen	Future	A.M.	В	11.5 s	<del>-</del>	0.78
Boulevard	Signal	P.M.	В	15.6 s	***	0.91
Highway 26 and		A.M.	С	19.2 s	1.5 m	0.06
Silver Creek Drive		P.M.	D	27.0 s	2.7 m	0.11
County Road 21		A.M.	В	10.1 s	0.4 m	0.02
and Forest Drive		P.M.	В	11.1 s	0.4 m	0.02

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

As can be seen in Tables 3, 4 and 5, the signalized intersection of Highway 26 and Silver Glen Boulevard will operate at LOS "B" in the both the a.m. and p.m. peak hour. This level of service is a result of the semi-actuated system, which provides continuous green time to the Highway 26 mainline, unless a vehicle is defected on the Silver Glen Boulevard approach.

The intersection of Highway 26 and Silver Creek Drive will experience a deterioration in operations to a Level of Service "D" during the weekday p.m. peak hour in 2031 horizon year. This is a result of greater mainline Highway 26 volumes reducing the availability of gaps for Silver Creek Drive traffic. However, the delay associated with this approach is acceptable, and is characterized by 95th percentile queue lengths of one vehicle and volume-to-capacity ratio of 0.11, indicating significant excess capacity to serve an increase in demand.

The unsignalized intersection of County Road 21 and Forest Drive will operate at a LOS "B" during the a.m. and p.m. peak hours. These intersections will be characterized by 95th percentile queue lengths of one vehicle and low volume-to-capacity ratios.

#### 4.0 Site Generated Traffic

The proposed development will result in additional vehicles on the boundary road network, as well as additional turning movements at the boundary road intersections.

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

#### 4.1. Trip Generation

The ITE Trip Generation Manual, 8th Edition was used to model the various residential and commercial uses proposed for the subject lands. The specific categories used are specified in Table 6 and 7, along with the corresponding trips.

As defined by the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition, primary trips are trips made for the specific purpose of visiting the generator and pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Information on primary and pass-by trips was available in Table 5.6 of the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition. The weekday p.m. peak hour pass-by rate of 34 percent was applied to the weekday a.m. peak hour for lack of specific information on the a.m. pass-by rate.

As the primary trips will be the only net addition of vehicles to the road, only these types are listed in Table 7. The pass-by trips will be captured by the trip generation of the residential uses of both the subject development and the Silver Glen Preserve development (refer to Section 3.3).

Table 6
Site Generated Trips – West Lands

Use	Roadway Peak	Number of Trips					
Use	Hour	Inbound	Outbound	Total			
Single Detached Units	Weekday A.M.	]	34	45			
Category 210	Weekday P.M.	38	23	61			
Townhouse Units	Weekday A.M.	2	11	13			
Category 230	Weekday P.M.	11	5	16			
Semi-Detached Units	Weekday A.M.	3	8	11			
Category 210	Weekday P.M.	9	5	14			
Total Trips —	Weekday A.M.	16	53	69			
West Lands	Weekday P.M.	58	33	91			

Table 7
Site Generated Trips – East Lands

Use	Roadway Peak	Number of Trips				
USE .	Hour	Inbound	Outbound	Total		
Single Detached Units	Weekday A.M.	13	41	54		
Category 210	Weekday P.M.	46	27	73		
Apartment Units	Weekday A.M.	18	74	92		
Category 220	Weekday P.M.	73	39	112		
Townhouse Units	Weekday A.M.	9	44	53		
Category 230	Weekday P.M.	42	20	62		
Seniors Complex	Weekday A.M.	3	4	7		
Category 252	Weekday P.M.	5	3	8		
Local Commercial Block – Primary	Weekday A.M.	11	7	18		
Category 820	Weekday P.M.	27	28	55		
Total Trips —	Weekday A.M.	54	170	224		
West Lands	Weekday P.M.	193	117	310		

#### 4.2. Trip Distribution and Assignment

The residential trips generated by the proposed development were distributed to the boundary road network based on location of employment, retail and service destinations. The Town of Collingwood is the major employment centre in the area, as well as the site of regional "big box" stores and many services. The Village at Blue Mountain is a smaller area providing retail, service, leisure and employment destinations.

Accordingly, 60 percent were distributed towards Collingwood and areas further east, 20 percent towards the retail and recreational areas at the Village at Blue Mountain, and 20 percent towards Thornbury and areas further west. The residential trip distribution for the west lands is illustrated in Figure 11 and the residential trip distribution for the east lands is illustrated in Figure 12.

The commercial trips generated by the local commercial block were distributed to the boundary road network based on the proximity of nearby existing and proposed residential areas. Accordingly, 20 percent of trips were distributed to the west lands and residential areas of Silver Creek Drive and Forest Drive, 40 percent were distributed to the future residential areas of the Preserve at Georgian Bay development, and 40 percent were distributed to the east to residential areas associated with Princeton Shores Boulevard and the Tanglewood development. The commercial trip distribution is illustrated in Figure 13.

The trips generated by the proposed development were applied to the distributions in Figures 11, 12 and 13. The resulting trip assignments are illustrated in Figures 14, 15 and 16.

#### 5.0 Total Future Conditions

#### 5.1. Basis of Assessment

The traffic impacts arising from the proposed development were assessed on the basis of the site generated traffic illustrated in Figures 14, 15 and 16 being superimposed on the future background traffic volumes in Figure 8, 9 and 10. The resulting 2021, 2026 and 2031 total future traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in Figures 17, 18 and 19, respectively.

#### 5.2. Auxiliary Lane Analysis

A left-turn lane warrant was undertaken for the intersection of Highway 26 and Silver Creek Drive using the Ontario Ministry of Transportation (MTO) Geometric Design Standards for Ontario Highways (GDSOH). During the critical 2031 total traffic p.m. peak hour, 53 vehicles out of an advancing volume (Va) of 1196 vehicles will make an westbound left-turn, equating to 4.4 percent. With an opposing volume of 1105 vehicles, a left turn lane with 35 metres of storage is warranted in the p.m. peak hour under the 2031 total traffic condition per Figure EA-10 of the GDSOH. The left-turn lane warrant has been included in Appendix D.

Table E9-1 of the GDSOH prescribes a left-turn lane parallel and taper requirement of 40 metres and 115 metres, respectively for an 70 km/h design speed and a grade of less than 2 percent.

#### 5.3. Intersection Operations

The 2021, 2026 and 2031 total traffic levels of service are outlined in Tables 8, 9 and 10, respectively. Detailed capacity analysis worksheets are included in Appendix C.

Table 8
2021 Total Traffic Levels of Service

Intersection	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver	A.M.	В	11.1 s	web.	0.71
Glen Boulevard	P.M.	В	12.1 s	~	0.82
Highway 26 and Silver	A.M.	С	21.5 s	6.7 m	0.23
Creek Drive	P.M.	D	34.2 s	9.4 m	0.31
County Road 21 and Forest	A.M.	В	10.5 s	0.8 m	0.03
Drive	P.M.	В	11.3 s	0.7 m	0.03

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

Table 9
2026 Total Traffic Levels of Service

Intersection	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver	A.M.	В	12.9 s	-	0.78
Glen Boulevard	P.M.	В	16.5 s	<b>1-</b>	0.89
Highway 26 and Silver	A.M.	D	28.0 s	9.1 m	0.30
Creek Drive	P.M.	F	55.6 s	14.7 m	0.44
County Road 21 and Forest	A.M.	В	10.8 s	0.9 m	0.04
Drive	P.M.	В	11.7 s	0.8 m	0.03

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

Table 10
2031 Total Traffic Levels of Service

Intersection	Peak Hour	Level of Service	Control Delay	95%ile Queue Length	Volume-to- Capacity
Highway 26 and Silver	A.M.	В	14.5 s	-	0.83
Glen Boulevard	P.M.	В	19.6 s	-	0.93
Highway 26 and Silver	A.M.	D	34.8 s	11.4 m	0.35
Creek Drive	P.M.	F	84.7 s	20.1 m	0.57
County Road 21 and Forest	A.M.	В	11.1 s	0.9 m	0.04
Drive	P.M.	В	12.2 s	0.8 m	0.03

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

As can be seen in Tables 8, 9 and 10, both the signalized intersection of Highway 26 and Silver Glen Boulevard as well as the unsignalized intersection of County Road 21 and Forest Drive will operate at levels of service unchanged from future background traffic conditions.

The intersection of Highway 26 and Silver Creek Drive will operate at lesser Levels of Service "D" and "F" during the 2031 horizon year weekday a.m. and p.m. peak hours, as compared to Levels "C" and "D" under future background traffic conditions. This is a result of a reduction in available gaps on Highway 26 due to increased mainline traffic volumes, combined with an increase in vehicles on the Silver Creek Drive approach due to site generated traffic. . However, this situation is typical of major arterials and highways, where the intent is to provide traffic flow priority to vehicles once they have accessed the thoroughfare. Additionally, there is no further surplus land in the immediate vicinity for development, thus increased demand on the Silver Creek Drive approach to Highway 26 is not expected.

Furthermore, a proposed development at the former Easter Seal lands in Craigleith, Town of The Blue Mountains (Terrasan development), has required the signalization of the Highway 26 and Grey County Road 21 intersection. Therefore, a viable alternate route via westbound Silver Creek Drive and Grey County Road 21 will be available to access Highway 26 for outbound vehicles destined to areas west upon signalization of this intersection.

#### 5.4. Roadway Classification

The roadway connecting the east lands to Silver Glen Boulevard is designed to allow for a future arterial roadway connecting Highway 26 to Mountain Road. Limited connections between Highway 26 and Mountain Road exist in the area from Collingwood to Craigleith. These existing connecting roadways

Highway 26 and Silver Glen Boulevard operations were modeled with optimized signal timing plans.

occur at the intersection of Highway 26 and Mountain Road in Collingwood, Grey County Road 21 at the Collingwood – Town of The Blue Mountains boundary, and the intersection of Highway 26 and Grey County Road 19 (Mountain Road) in Craigleith.

The areas near the subject lands are rapidly being developed. Major local area developments include "Silver Glen Preserve" (184 units), "Tanglewood at Cranberry Trail" (up to 882 units), "Brandy Lane" (up to 140 units) "The Preserve at Georgian Bay" (426 units). These new residents will cause increased pressure on the public road system.

During the course of approvals associated with the Silver Glen Preserve project, the Town of Collingwood required a dual carriage entrance road allowance (Silver Glen Boulevard). This was to provide opportunities to the Town in the future to realize a north/south arterial roadway between Highway 26 and Mountain Road. Silver Glen Boulevard is to be assumed by the Town of Collingwood upon completion of all phases of the Silver Glen Preserve development and the subsequent maintenance period.

Subject to further study, the proponent sees considerable merit in providing a further linkage between Highway 26 and areas south. The future signalization of the Highway 26 and Silver Glen Boulevard intersection makes it an ideal termini point for this linkage. Accordingly, Huntingwood are following suit by incorporating provisions within their plan for this future arterial roadway.

The alignment of an arterial connection between Highway 26 and Mountain Road would be subject to extensive study through the future Mountain West Secondary Plan. The design of the proposed development has been undertaken to facilitate such a connection at this location, should future study so recommend.

Until such time as the roadway is assumed by the Town of Collingwood, it shall be a privately owned facility within a municipally owned block.

#### 6.0 Conclusions and Recommendations

The analysis undertaken within was prepared using a recent draft plan. Any subsequent, minor changes to the unit count from a revised draft plan will not materially affect the conclusions and recommendations contained within this report.

Intersection analyses of the existing traffic volumes indicate that the subject area intersections are operating at LOS "B" or better in both the a.m. and p.m. peak hours. Both intersections are characterised by low 95th percentile queues and volume-to-capacity ratios.

Intersection analyses of the future background traffic conditions indicate that the Highway 26 and Silver Glen Boulevard intersection will operate at Level of Service "B| in both peak hours under signalization in the 2031 horizon year. Likewise, the intersection of County Road 21 and Forest Drive will operate at Level of Service "B" in both peak hours in the 2031 horizon year. The intersection of Highway 26 and Silver Creek Drive will operate at a Level of Service "D" during the p.m. peak hour in the 2031 horizon year. However, the 95th percentile queue length will be one vehicle and the volume-to-capacity ratio of 0.11 is low.

The proposed development is expected to add 293 and 401 new trips to the boundary road system in the a.m. and p.m. peak hours, respectively. These trips were distributed to the boundary road network and added to the future background traffic volumes to obtain the total traffic volumes.

An auxiliary lane analysis was performed at the intersection of Highway 26 and Silver Creek Drive and a westbound left-turn lane was found to be warranted in the p.m. peak hour of the 2031 total traffic condition. This lane requires 35 metres of storage, 40 metres of parallel and 115 metres of taper as per the MTO Geometric Design Manual. The dimensions of the left-turn lane should be confirmed at the time of detailed design.

Intersection analyses of the total traffic volumes indicate that the Levels of Service will remain unchanged from future background traffic conditions for the intersections of Highway 26 and Silver Glen Boulevard and County Road 21 and Forest Drive. The intersection of Highway 26 and Silver Creek Drive will operate at a Level of Service "D" and "F" during the a.m. and p.m. peak hours, respectively in the 2031 horizon year. This situation is typical for unsignalized access to major arterials and highways, where the intent is to provide traffic flow priority to vehicles once they have accessed the thoroughfare

It is concluded that the proposed residential development will not adversely affect the boundary road system with the introduction of a westbound left-turn lane at the intersection of Highway 26 and Silver Creek Drive.

Respectfully Submitted,

C.F. CROZIER & ASSOCIATES INC.

Alexander J. W. Fleming, MBA, P.Eng., PTOE

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# APPENDIX A

Level of Service Definitions

### Level of Service Definitions

## Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
А	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
В	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
С	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

#### Level of Service Definitions

## Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
А	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase Most vehicles do not stop and short cycle lengths may contribute to low delay.
В	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
С	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

# APPENDIX B

Traffic Data

Job Number:

281-2769

Date:

7-Aug-08

Counter:

Jesse Matchett

North Leg (Southbound) Road Name: South Leg (Northbound) Road Name: East Leg (Westbound) Road Name: West Leg (Eastbound) Road Name:

CR 19 CR 19 Forest Dr

N/A

A.M. Peak Hour		Eastbound			Westbound			Northbound	d		Southbound	j
8:00 - 9:00		N/A		77	Forest Dr			CR 19			CR 19	
	L	T	R	L	T	R	L	T	R	L	Т	R
7:00	0	0	0	0	0	1	0	8	1	0	10	0
7:15	0	0	0	2	0	0	0	12	0	0	16	0
7:30	0	0	0	0	0	0	0	20	0	1	17	0
7:45	0	0	0	0	0	1	0	17	1	0	25	0
8:00	0	0	0	1	0	1	0	13	0	0	20	0
8:15	0	0	0	2	0	0	0	19	1	1	25	0
8:30	0	0	0	2	0	2	0	11	1	1	26	0
8:45	0	0	0	0	0	2	0	23	3	0	28	0
Peak Hour HV's	0	0	0	1 1	0	0	0	2	1 1	0	5	0
Ped Crossings		0			0			0			0	
A.M. Peak Hour	0	0	0	5	0	5	0	66	5	2	99	^
HV% of PHV				20%		0%	<u> </u>	3%	20%	0%	5%	

Date:

7-Aug-08

Counter:

Jesse Matchett

P.M. Peak Hour		Eastbound			Westbound			Northbound			Southbound	j	
16:15 - 17:15		N/A			Forest Dr			CR 19		CR 19			
	L	Т	R	L.	T	R	L	T	R	L.	T	R	
16:00	0	0	0	3	0	0	0	21	1	0	29	0	
16:15	0	0	0	1	0	2	0	32	2	1	20	0	
16:30	0	0	0	3	0	0	0	20	0	2	34	0	
16:45	0	0	0	1	0	1	0	19	3	0	22	0	
17:00	0	0	0	1	0	0	0	20	1	1	33	0	
17:15	0	0	0	2	0	0	0	31	1	0	23	0	
17:30	0	0	0	1	0	0	0	23	2	2	20	0	
17:45	0	0	0	1	0	0	0	24	2	0	27	0	
Peak Hour HV's	0	0	0	0	0 1	0	0	2	0	Γ 0	3	0	
ed Crossings		0			0			0			0		
P.M. Peak Hour	0	0	0	6	0 1	3	0	91	6	4	109	0	
V% of PHV		J		0%		0%		2%	0%	0%	3%	····	

Job Number:

281-2769

Date:

7-Aug-08

Counter:

Patrick Hatton

North Leg (Southbound) Road Name:

South Leg (Northbound) Road Name: East Leg (Westbound) Road Name:

West Leg (Eastbound) Road Name:

N/A

Silvercreek Dr

Highway 26 Highway 26

A.M. Peak Hour 8:00 - 9:00		Eastbound Highway 26			Westbound Highway 26			Northbound		Southbound N/A		
	L	Т	R	L	T	R	L	Т	R	L	Т	R
7:00	0	35	0	1	46	0	0	0	1	0	0	0
7:15	0	51	0	2	37	0	1	0	4	0	ō	0
7:30	0	64	0	0	80	0	0	0	5	0	0	0
7:45	0	74	0	1	63	0	0	0	3	0	0	0
8:00	0	72	0	0	65	0	1	0	1	0	0	0
8:15	0	78	1	1	82	0	0	0	6	0	0	0
8:30	0	80	0	2	78	0	0	0	5	0	0	0
8:45	0	104	1	2	71	0	0	0	2	0	Ō	0
					<del>1940-1-01000   1940-1940   1940-1940   1940</del>		?			3 <u> </u>	!	
Peak Hour HV's	0	13	0	0	21	0	0	0	0	0	0	0

Ped Crossings 0 0 0 A.M. Peak Hour 334 0 296 5 0 0 14 0 0 0

HV% of PHV 0% 4% 0% 7% 0% 0%

Date: Counter:

7-Aug-08 Patrick Hatton

P.M. Peak Hour 16:30 - 17:30		Eastbound Highway 26			Westbound Highway 26		1	Northbound			Southbound N/A	j
	L	T	R	L	T	R	L	T	R	L	T	R
16:00	0	105	0		101	0	0	0	3	0	0	0
16:15	0	78	0	5	120	0	0	0	2	0	Ō	0
16:30	0	107	1		98	0	1	0	3	0	0	0
16:45	0	106	0	5	97	0	0	0	7	0	0	0
17:00	0	97	0	5	126	0	0	0	4	0	0	0
17:15	0	92	0	3	112	0	0	0	3	0	0	0
17:30	0	97	0	2	94	0	0	0	2	0	0	0
17:45	0	77	0	2	101	0	0	0	1	0	0	0
Peak Hour HV's	0	20	0	0	15	0	0	0	0	0	0	0
Ped Crossings		0			0			0			0	
P.M. Peak Hour	0	402	1	13	433	0	1 1	0	17	0	0	0
HV% of PHV		5%	0%	0%	3%		0%		0%			

# APPENDIX C

Detailed Capacity Analyses

	townsen Age	****	Warner.		*	P	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	ř		4	ķγ		
Volume (veh/h)	334	2	5	296	1	14	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.80	0.70	0.70	0.90	0.70	0.70	
Hourly flow rate (vph)	418	3	7	329	1	20	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage Right turn flare (veh)							
Median type	None			None			
Median storage veh)	IVOIIC			None			
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			420		761	418	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			420		761	418	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			99		100	97	
cM capacity (veh/h)			1150		374	640	
Direction, Lane#	EB 1	EB 2	WB1	NB 1			
Volume Total	418	3	336	21			
Volume Left	0	0	7	1			
Volume Right	0	3	0	20			
cSH Values to Canada	1700	1700	1150	611			
Volume to Capacity	0.25	0.00	0.01	0.04			
Queue Length 95th (m)	0.0 0.0	0.0 0.0	0.1	0.8 11.1			
Control Delay (s) Lane LOS	0.0	0.0	0.2 A	11.1 B			
Approach Delay (s)	0.0		0.2	11.1			
Approach LOS	0.0		0.2	В			
Intersection Summary							
Average Delay		managaran ang agang	0.4	. 551 4,5-51455		- academic access 2001	
Intersection Capacity Utilizat	ion		29.6%	IC	U Level o	f Service	Α
Analysis Period (min)			15	,,,	_ ========	. 20	···

			· Samuel	4	*	P	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations Volume (veh/h) Sign Control	402 Free	/* 1	13	433 Free	1 Stop	17	
Grade	0%			0%	0%		
Peak Hour Factor	0.94	0.70	0.70	0.90	0.70	0.70	
Hourly flow rate (vph) Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage	428	1	19	481	1	24	
Right turn flare (veh) Median type Median storage veh) Upstream signal (m) pX, platoon unblocked	None			None			
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol			429		946	428	
vCu, unblocked vol			429		946	428	
tC, single (s) tC, 2 stage (s)			4.1		6.4	6.2	
tF (s)			2.2		3.5	3.3	
p0 queue free %			98		100	96	
cM capacity (veh/h)			1141		288	631	
Direction, Lane #	EB1	EB 2	WB 1	NB 1	Jana Sara		
Volume Total	428	1	500	26			
Volume Left	0	0	19	1			
Volume Right	0	1700	0	24			
cSH Volume to Capacity	1700 0.25	1700 0.00	1141 0.02	592 0.04			
Queue Length 95th (m)	0.23	0.0	0.02	1.0			
Control Delay (s)	0.0	0.0	0.5	11.4			
Lane LOS	0.0	0.0	0.0 A	В			
Approach Delay (s) Approach LOS	0.0		0.5	11.4 B			
Intersection Summary				HENCH	SEE COME		SUSPENDED FOR SERVICE AND REAL PROPERTY OF THE SERVICE OF
Average Delay Intersection Capacity Utilizatio Analysis Period (min)	n		0.6 43.3% 15	IC	U Level of	Service	A

	<b>*</b>		<b>†</b>	<b>A</b>	1	<b>\</b>	
Movement Assessment Assessment	WBL	WBR	NBT	NBR	SBL	SBT	· Control of the State of the State of the State of State
Lane Configurations	Ka	•	<b>^</b>			લ	· · · · · · · · · · · · · · · · · · ·
Volume (veh/h)	5	5	66	5	2	99	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.70	0.70	0.71	0.70	0.70	0.88	}
Hourly flow rate (vph)	7	7	93	7	3	112	?
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	)
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked	045	0.7			400		
vC, conflicting volume	215	97			100		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol	215	97			100		
vCu, unblocked vol tC, single (s)	215 6.6	6.2			4.1		
tC, single (s)	0.0	0.2			4.1		
tF (s)	3.7	3.3			2.2		
p0 queue free %	99	99			100		
cM capacity (veh/h)	734	965			1505		
Direction, Lane #	WB 1	NB 1	SB1				
Volume Total	14	100	115	······································			
Volume Left	7	0	3				
Volume Right	7	7	Ō				
cSH	834	1700	1505				
Volume to Capacity	0.02	0.06	0.00				
Queue Length 95th (m)	0.4	0.0	0.0				
Control Delay (s)	9.4	0.0	0.2				
Lane LOS	Α		Α				
Approach Delay (s)	9.4	0.0	0.2				
Approach LOS	Α						
Intersection Summary						vieleniek	
Average Delay			0.7				
Intersection Capacity Utilizati	on		16.8%	IC	U Level o	of Servi	ice A
Analysis Period (min)			15				

	W. Carlo	4	<b>†</b>	<i>[</i> **	1	*	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	Ma		Þ			લી	
Volume (veh/h)	6	3	91	6	4	109	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.70	0.70	0.71	0.70	0.70	0.80	
Hourly flow rate (vph)	9	4	128	9	6	136	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	)
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked	000	400			407		
vC, conflicting volume	280	132			137		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol	280	132			137		
vCu, unblocked vol	200 6.4	6.2			4.1		
tC, single (s) tC, 2 stage (s)	0.4	0.2			4.1		
tF (s)	3.5	3.3			2.2		
p0 queue free %	99	100			100		
cM capacity (veh/h)	711	922			1460		
Direction, Lane #	WB1	NB 1	SB 1	gut saytsayur	na transie		Aline ne Alexande Sentre a explosit de Perco do que aline de la relação de Alexande do tra-
Volume Total	13	137	142		Andreas Spirit	10710 10710	
Volume Left	9	0	6				
Volume Right	4	9	0				
cSH	770	1700	1460				
Volume to Capacity	0.02	0.08	0.00				
Queue Length 95th (m)	0.4	0.0	0.1				
Control Delay (s)	9.8	0.0	0.3				
Lane LOS	A	0.0	A				
Approach Delay (s)	9.8	0.0	0.3				
Approach LOS	A	212	***				
Intersection Summary	Salaya ya	Salata					
Average Delay			0.6				
Intersection Capacity Utilization	on		19.0%	IC	U Level c	of Servi	ce A
Analysis Period (min)			15				

		man Mar			-4		*	Î	/#·	1/4	Ţ	4
Movement Addition And A	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ŋ	Þ		Ŋ	ĵ.,		ħ	ĵ.	******	**	B	
Volume (vph)	11	660	4	14	577	42	8	Ö	31	94	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1795		1825	1833		1825	1633		1825	1633	
FIt Permitted	0.33	1.00		0.30	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	641	1795		575	1833		1421	1633		1412	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	733	4	16	641	47	9	0	34	104	0	27
RTOR Reduction (vph)	0	0	0	0	5	0	0	30	0	0	23	0
Lane Group Flow (vph)	12	737	0	16	683	0	9	4	0	104	4	0
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.9	28.9		28.9	28.9		6.3	6.3		6.3	6.3	
Effective Green, g (s)	28.9	28.9		28.9	28.9		6.3	6.3		6.3	6.3	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.13	0.13		0.13	0.13	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	384	1074		344	1097		185	213		184	213	
v/s Ratio Prot		c0.41			0.37			0.00			0.00	
v/s Ratio Perm	0.02			0.03			0.01			c0.07		
v/c Ratio	0.03	0.69		0.05	0.62		0.05	0.02		0.57	0.02	
Uniform Delay, d1	4.0	6.6		4.0	6.2		18.4	18.3		19.7	18.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.1	1.1		0.1	0.0		3.9	0.0	
Delay (s)	4.0	8.4		4.1	7.3		18.5	18.4		23.7	18.3	
Level of Service	Α	Α		Α	Α		В	В		С	В	
Approach Delay (s)		8.4			7.2			18.4			22.6	
Approach LOS		Α			Α			В			С	
Intersection Summary							Mark A	na ayar				aseja)
HCM Average Control Delay			9.3	HC	CM Level	of Service	<del>)</del>		Α			
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			48.3		ım of lost				13.1			
Intersection Capacity Utilization	1		57.8%	IC	U Level o	f Service			В			
Analysis Period (min)			15									
c Critical Lane Group												

		LOUISSEE AND S	~		4	Å.,.	4	Î	A	1	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL N	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	ß		ħ	ß		19	b		ሻ	ĵ»	
Volume (vph)	23	787	8	32	850	94	6	0	26	65	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1863		1825	1811		1825	1633		1825	1633	
Fit Permitted	0.17	1.00		0.26	1.00		0.98	1.00		0.98	1.00	
Satd. Flow (perm)	319	1863		492	1811		1874	1633		1874	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	874	9	36	944	104	7	0	29	72	0	18
RTOR Reduction (vph)	0	1	0	0	6	0	0	27	0	0	17	0
Lane Group Flow (vph)	26	882	0	36	1042	0	7	2	0	72	1	0
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm		********	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	40.1	40.1		40.1	40.1		4.1	4.1		4.1	4.1	
Effective Green, g (s)	40.1	40.1		40.1	40.1		4.1	4.1		4.1	4.1	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.07	0.07		0.07	0.07	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	1304		344	1267		134	117		134	117	
v/s Ratio Prot		0.47			c0.58			0.00			0.00	
v/s Ratio Perm	80.0			0.07			0.00			c0.04		
v/c Ratio	0.12	0.68		0.10	0.82		0.05	0.02		0.54	0.01	
Uniform Delay, d1	2.8	4.9		2.8	6.1		24.8	24.7		25.7	24.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.4		0.1	4.4		0.2	0.1		4.1	0.0	
Delay (s)	3.0	6.3		2.9	10.5		25.0	24.8		29.8	24.8	
Level of Service	Α	Α		Α	В		С	С		С	С	
Approach Delay (s)		6.2			10.3			24.8			28.8	
Approach LOS		Α			В			С			С	
Intersection Summary	See En			Charant,				asika				
HCM Average Control Delay			9.6	H	CM Level	of Service	e		Α			
HCM Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			57.3		ım of lost				13.1			
Intersection Capacity Utilization	า		71.6%	IC	U Level o	of Service			Ç			
Analysis Period (min)			15									
c Critical Lane Group												

	econolity.	"Town of the last	Ween.	**************************************	***	1	
Movement Additional Advances	EBT	EBR	WBL	WBT	NBL	NBR	Note and the engineer of the results. Another the highly facilities
Lane Configurations Volume (veh/h) Sign Control	661 Free	<b>7</b> 2	5	4 604 Free	∜√ 1 Stop	14	
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph) Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh)	734	2	6	671	1	16	
Median type Median storage veh) Upstream signal (m) pX, platoon unblocked	None			None			
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol			737		1417	734	
vCu, unblocked vol			737		1417	734	
tC, single (s) tC, 2 stage (s)			4.1		6.4	6.2	
tF (s)			2.2		3.5	3.3	
p0 queue free %			99		99	96	
cM capacity (veh/h)			878		152	423	
Direction, Lane#	EB 1	EB 2	WB 1	NB 1	ison (lap		
Volume Total	734	2	677	17			
Volume Left	0	0	6	1			
Volume Right	4700	2	0	16			
cSH Volume to Congeity	1700	1700	878	378			
Volume to Capacity Queue Length 95th (m)	0.43 0.0	0.00	0.01	0.04			
Control Delay (s)	0.0	0.0 0.0	0.1 0.2	1.0			
Lane LOS	0.0	0.0	0.2 A	15.0 B			
Approach Delay (s)	0.0		0.2	15.0			
Approach LOS	0.0		V.Z.	В			
Intersection Summary							
Average Delay Intersection Capacity Utilization	1		0.3 45.8%	ICI	J Level of	Service	A
Analysis Period (min)			15				

	องและผู้รู้สูง			<b>4</b>	**	P	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	We write the first series and simple sequences $\hat{\beta}$
Lane Configurations	4	7		4	W	*****	
Volume (veh/h)	801	1	13	859	1	17	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	890	1	14	954	1	19	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s) Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)	None			None			
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			891		1873	890	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			891		1873	890	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)			0.0		A #		
tF (s)			2.2		3.5	3.3	
p0 queue free % cM capacity (veh/h)			98 769		99 78	95 345	
						340	
Direction, Lane #	~~~~	EB 2	WB 1	NB 1		si Nisis	
Volume Total	890	1	969	20			
Volume Left	0	0	14	1			
Volume Right cSH	0 1700	1 1700	0 769	19			
Volume to Capacity	0.52	0.00	0.02	290 0.07			
Queue Length 95th (m)	0.02	0.00	0.02	1.7			
Control Delay (s)	0.0	0.0	0.6	18.3			
Lane LOS	0.0	0.0	Α	C.O			
Approach Delay (s)	0.0		0.6	18.3			
Approach LOS				C			
Intersection Summary	anin in		Herio		akt Espi		
Average Delay			0.5				
Intersection Capacity Utilizatio	n		65.6%	IC	CU Level of	Service	e C
Analysis Period (min)			15				

	4	4	1	<i>p</i>	· Marie	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	Note National Property of the North Association of the specifical property of
Lane Configurations	Y		Þ			eq.	
Volume (veh/h)	5	5	116	5	2	173	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	6	6	129	6	2	192	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	328	132			134		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	328	132			134		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	99	99			100		
cM capacity (veh/h)	669	923			1463		
Direction, Lane #	WB 1	NB 1	SB 1			e de la composição de la c	graph from a schalpha and the Derbigger Light
Volume Total	11	134	194				
Volume Left	6	0	2				
Volume Right	6	6	0				
cSH	776	1700	1463				
Volume to Capacity	0.01	0.08	0.00				
Queue Length 95th (m)	0.3	0.0	0.0				
Control Delay (s)	9.7	0.0	0.1				
Lane LOS	Α		Α				
Approach Delay (s)	9.7	0.0	0.1				
Approach LOS	Α						
Intersection Summary				age Parker	Vallaga (		Baugagagiga dankona tirkon dankish dagagan
Average Delay			0.4				
Intersection Capacity Utiliza	tion		20.7%	ICU	J Level o	f Service	e A
Analysis Period (min)			15				

	4	De Land	Î	<i>/</i> *	1	ļ	
Movement Advantage and Advanta	WBL	WBR	NBT	NBR	SBL	SBT	en e se escribir de describir de se que describir a que
Lane Configurations	W.		þ			€₫	
Volume (veh/h)	6	3	159	6	4	191	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	7	3	177	7	4	212	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s) Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)			110110			TVOITE	
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	401	180			183		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	401	180			183		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF(s)	3.5	3.3			2.2		
p0 queue free %	99	100			100		
cM capacity (veh/h)	607	868			1404		
Direction, Lane #	WB 1	NB 1	SB 1	jaran.	<u> </u>		
Volume Total	10	183	217				
Volume Left	7	0	4				
Volume Right	3	7	0				
cSH Valume to Conneits	675	1700	1404				
Volume to Capacity	0.01	0.11	0.00				
Queue Length 95th (m)	0.3 10.4	0.0 0.0	0.1 0.2				
Control Delay (s) Lane LOS	10.4 B	0.0	0.2 A				
Approach Delay (s)	10.4	0.0	0.2				
Approach LOS	B	0.0	0.2				
Intersection Summary	pili Nyas	HQURAN	s je kara			Najarah	production and a resident production of the state of the
Average Delay			0.4				
Intersection Capacity Utilizatio	n		23.3%	IC	U Level o	of Service	Α
Analysis Period (min)			15				

		Manage of the State of the Stat		Marine Contraction of the Contra	· Common	4.	*	<b>†</b>	P	1/4	[	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	19	1>		ሻ	Þ		ħ	\$		K	À	
Volume (vph)	11	772	4	14	677	42	8	0	31	94	0	24
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
FIt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1795		1825	1835		1825	1633		1825	1633	
Flt Permitted	0.27	1.00		0.23	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	519	1795		444	1835		1421	1633		1412	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	858	4	16	752	47	9	0	34	104	0	27
RTOR Reduction (vph)	0	0	0	0	3	0	0	30	0	0	24	0
Lane Group Flow (vph)	12	862	0	16	796	0	9	4	0	104	3	0
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		***************************************
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.8	35.8		35.8	35.8		7.2	7.2		7.2	7.2	
Effective Green, g (s)	35.8	35.8		35.8	35.8		7.2	7.2		7.2	7.2	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.13	0.13		0.13	0.13	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	331	1145		283	1171		182	210		181	210	
v/s Ratio Prot		c0.48			0.43			0.00			0.00	
v/s Ratio Perm	0.02			0.04			0.01			c0.07		
v/c Ratio	0.04	0.75		0.06	0.68		0.05	0.02		0.57	0.02	
Uniform Delay, d1	3.8	7.1		3.8	6.5		21.4	21.4		23.0	21.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.8		0.1	1.6		0.1	0.0		4.4	0.0	
Delay (s)	3.8	9.9		3.9	8.1		21.6	21.4		27.4	21.4	
Level of Service	Α	Α		Α	Α		С	С		С	С	
Approach Delay (s)		9.8			8.0			21.4			26.1	
Approach LOS		Α			Α			С			С	
Intersection Summary		ánta do						4864		844,56		BARK
HCM Average Control Delay			10.4	H(	CM Level	of Servic	e		В			
HCM Volume to Capacity ration	0		0.72									
Actuated Cycle Length (s)			56.1	St	ım of lost	time (s)			13.1			
Intersection Capacity Utilization	on		63.7%		U Level o				В			
Analysis Period (min)			15									
c Critical Lane Group												

			**************************************	W.	·\$	Manager	*	Î	1	1		1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	je.	Þ		K			ሻ	<b>j</b> >		*§	13	
Volume (vph)	23	930	8	32	996	94	6	0	26	65	Ô	16
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1863		1825	1813		1825	1633		1825	1633	
Flt Permitted	0.11	1.00		0.19	1.00		0.75	1.00		0.74	1.00	
Satd. Flow (perm)	208	1863		369	1813		1433	1633		1418	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1033	9	36	1107	104	7	0	29	72	0	18
RTOR Reduction (vph)	0	0	0	0	4	0	0	27	0	0	17	0
Lane Group Flow (vph)	26	1042	0	36	1207	0	7	2	0	72	1	0
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm	***************************************		Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6	•	
Actuated Green, G (s)	58.6	58.6		58.6	58.6		6.3	6.3		6.3	6.3	
Effective Green, g (s)	58.6	58.6		58.6	58.6		6.3	6.3		6.3	6.3	
Actuated g/C Ratio	0.75	0.75		0.75	0.75		0.08	0.08		80.0	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	1400		277	1362		116	132	***	115	132	
v/s Ratio Prot		0.56			c0.67			0.00			0.00	
v/s Ratio Perm	0.13			0.10			0.00			c0.05		
v/c Ratio	0.17	0.74		0.13	0.89		0.06	0.02		0.63	0.01	
Uniform Delay, d1	2.8	5.5		2.7	7.2		33.1	33.0		34.7	33.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	2.2		0.2	7.3		0.2	0.1		10.2	0.0	
Delay (s)	3.3	7.7		2.9	14.5		33.3	33.1		44.9	33.0	
Level of Service	Α	Α		Α	В		С	С		D	С	
Approach Delay (s)		7.6			14.2			33.1			42.5	
Approach LOS		Α			В			C			D	
Intersection Summary					y kirjana r	tanin in	in de ee				graffart.	HALLEY
HCM Average Control Delay			12.6	H(	CM Level	of Service	е		В			
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			78.0		ım of lost				13.1			
Intersection Capacity Utilization	١		79.3%	IC	U Level of	f Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

			Warner.			p Marin	
Movement Movement	EBT	EBR	WBL	WBT	NBL	NBR	especial commission of the constraint of the con
Lane Configurations Volume (veh/h)	<b>7</b> 773	<b>2</b>	c	<b>€</b> ¶	ja Ag	······································	
Sign Control	Free	2	5	704 Free	1 Stop	14	
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	859	2	6	782	1	16	
Pedestrians		_	•	102		,,,	
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked vC, conflicting volume			004		1050	250	
vC1, stage 1 conf vol			861		1652	859	
vC2, stage 2 conf vol							
vCu, unblocked vol			861		1652	859	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)			***		0.4	0.2	
tF (s)			2.2		3.5	3.3	
p0 queue free %			99		99	96	
cM capacity (veh/h)			789		109	359	
Direction, Lane#	EB 1	EB 2	WB 1	NB 1		gajana.	
Volume Total	859	2	788	17			
Volume Left	0	0	6	1			
Volume Right	0	2	0	16			
CSH	1700	1700	789	311			
Volume to Capacity	0.51	0.00	0.01	0.05			
Queue Length 95th (m) Control Delay (s)	0.0 0.0	0.0 0.0	0.2 0.2	1.3			
Lane LOS	0.0	0.0	0.2 A	17.2 C			
Approach Delay (s)	0.0		0.2	17.2			
Approach LOS	0.0		0.4	C			
Intersection Summary						, Sansa J	
Average Delay			0.3				
Intersection Capacity Utilization	ı		51.0%	ICU	J Level of	Service	Α
Analysis Period (min)			15				

		Na.	Warran.		*	1	
Movement 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	EBT	EBR	WBL	WBT	NBL	NBR	$(x_1,x_2,\dots,x_n)$ and the set of the second section of $(x_1,x_2,\dots,x_n)$
Lane Configurations	*	7		લું	\$p\$		
Volume (veh/h)	944	1	13	1005	1	17	
Sign Control	Free			Free	Stop		
Grade	0%	0.00	0.00	0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph) Pedestrians	1049	1	14	1117	1	19	
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)	N.I						
Median type Median storage veh)	None			None			
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			1050		2194	1049	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1050		2194	1049	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)			0.0		0.5	2.2	
tF (s) p0 queue free %			2.2 98		3.5 98	3.3 93	
cM capacity (veh/h)			671		49	279	
	. Tempo a To	: . <b></b>		. NE a :	TO THE STAR	ATU NAMES E	
Direction, Lane #	1049	EB 2	-WB 1 - 1131		N 18 18 18 18 18 18 18 18 18 18 18 18 18	gantasagas 11.	hi challagara a waxaya ka
Volume Left	0	1 0	1131	20 1			
Volume Right	0	1	0	19			
cSH	1700	1700	671	222			
Volume to Capacity	0.62	0.00	0.02	0.09			
Queue Length 95th (m)	0.0	0.0	0.5	2.2			
Control Delay (s)	0.0	0.0	0.8	22.9			
Lane LOS			Α	С			
Approach Delay (s)	0.0		8.0	22.9			
Approach LOS				С			
Intersection Summary			Mekter				
Average Delay			0.6				_
Intersection Capacity Utilization	n		73.3%	IC	U Level	of Service	D D
Analysis Period (min)			15				

	4		1	J. Commission of the Commissio	100	<b>\</b>	
Movement ************************************	WBL	WBR	NBT	NBR	SBL	SBT	Charles the Magazine Control of the Control
Lane Configurations	NA.		1/2		•	4	
Volume (veh/h)	5	5	134	5	2	200	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	6	6	149	6	2	222	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	378	152			154		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol	0770	450					
vCu, unblocked vol	378	152			154		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)	2.5	2.2			0.0		
tF (s) p0 queue free %	3.5	3.3			2.2		
cM capacity (veh/h)	99 626	99 900			100 1438		
				e el en este l	1430		and the second of the contract
Direction, Lane #		NB 1			Print party	inna a visit i	
Volume Total	11	154	224				
Volume Left	6	0	2				
Volume Right	6	6	0				
cSH Valuma ta Canacitu	739	1700	1438				
Volume to Capacity	0.02	0.09	0.00				
Queue Length 95th (m)	0.3	0.0	0.0				
Control Delay (s) Lane LOS	9.9	0.0	0.1				
	A	0.0	A				
Approach Delay (s) Approach LOS	9.9 A	0.0	0.1				
• •	. 1500 01 - 10	Geritie e	vato stavita	es es es	and the second	See a conse	
Intersection Summary							
Average Delay	_		0.3	,	NIII :		
Intersection Capacity Utilization	n		22.1%	IC	CU Level	of Service	A
Analysis Period (min)			15				

	<b>*</b>		1	p	1/100	1	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations Volume (veh/h) Sign Control	6 Stop	3	184 Free	6	4	<b>∢</b> 220 Free	
Grade Peak Hour Factor Hourly flow rate (vph)	0% 0.90 7	0.90 3	0% 0.90 204	0.90 7	0.90 4	0% 0.90 244	
Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh)							
Median type Median storage veh) Upstream signal (m) pX, platoon unblocked			None			None	
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	461	208			211		
vCu, unblocked vol	461	208			211		
tC, single (s) tC, 2 stage (s)	6.4	6.2			4.1		
tF (s)	3.5	3.3			2.2		
p0 queue free %	99	100			100		
cM capacity (veh/h)	560	838			1371		
	WB 1	NB 1	SB 1			4.44.135	
Volume Total	10	211	249				
Volume Left	7	0	4				
Volume Right cSH	3	7	4074				
Volume to Capacity	630 0.02	1700 0.12	1371 0.00				
Queue Length 95th (m)	0.02	0.12	0.00				
Control Delay (s)	10.8	0.0	0.1				
Lane LOS	10.0 B	0.0	0.2 A				
Approach Delay (s)	10.8	0.0	0.2				
Approach LOS	В	0.0	V.L				
Intersection Summary			ATEKNI.		lastes:		<u> </u>
Average Delay			0.3				
Intersection Capacity Utilization Analysis Period (min)			24.8% 15	ICI	J Level of	Service	А

		Normania (Signal	***ederally	W	<b></b>	4	*	1	P	1	1	4
Movement Annalysis and Annalysis	EBL	EBT	EBR	WBL	WBT	WBR	NBL	· NBT	NBR	SBL SBL	SBT	SBR
Lane Configurations	Y	T <sub>p</sub>		ħ	ĥ		ሻ	ħ	·	ኻ	ĵ»	
Volume (vph)	11	851	4	14	747	42	8	0	31	94	0	24
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
FIt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1795		1825	1836		1825	1633		1825	1633	
FIt Permitted	0.23	1.00		0.19	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	447	1795		364	1836		1421	1633		1412	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	946	4	16	830	47	9	0	34	104	0	27
RTOR Reduction (vph)	0	0	0	0	3	0	0	30	0	0	24	0
Lane Group Flow (vph)	12	950	0	16	874	0	9	4	0	104	3	0
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.7	38.7		38.7	38.7		7.0	7.0		7.0	7.0	
Effective Green, g (s)	38.7	38.7		38.7	38.7		7.0	7.0		7.0	7.0	
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.12	0.12		0.12	0.12	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	1181		240	1208		169	194		168	194	
v/s Ratio Prot		c0.53			0.48			0.00			0.00	
v/s Ratio Perm	0.03			0.04			0.01			c0.07		
v/c Ratio	0.04	0.80		0.07	0.72		0.05	0.02		0.62	0.02	
Uniform Delay, d1	3.5	7.3		3.6	6.6		23.0	22.9		24.6	22.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.1		0.1	2.2		0.1	0.0		6.6	0.0	
Delay (s)	3.6	11.4		3.7	8.7		23.1	22.9		31.3	22.9	
Level of Service	Α	В		Α	Α		С	С		С	С	
Approach Delay (s)		11.3			8.6			23.0			29.5	
Approach LOS		В			Α			С			С	
Intersection Summary						<u>Mark</u>	is itsir	an Pikipi				13 N N N 1
HCM Average Control Delay			11.5	Н	CM Level	of Service	9		В			
HCM Volume to Capacity ratio	ı		0.78									
Actuated Cycle Length (s)			58.8		um of lost				13.1			
Intersection Capacity Utilizatio	n		67.8%	IC	U Level o	of Service			С			
Analysis Period (min)			15									
c Critical Lane Group												

		Martenana (Sept.)	****	Warner.	·Same	4	*	†	Par	<b>\</b>	<b>\</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	W	Þ		19	ß		ħ	Þ	····	ኻ	1	
Volume (vph)	23	1025	8	32	1098	94	6	0	26	65	0	16
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1863		1825	1815		1825	1633		1825	1633	
Flt Permitted	0.07	1.00		0.16	1.00		0.75	1.00		0.74	1.00	
Satd. Flow (perm)	137	1863		306	1815		1433	1633		1418	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1139	9	36	1220	104	7	0	29	72	0	18
RTOR Reduction (vph)	0	0	0	0	3	0	0	27	0	0	17	0
Lane Group Flow (vph)	26	1148	0	36	1321	0	7	2	Õ	72	1	0
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	·············		Perm			Perm		·····	Perm		
Protected Phases		4			8			2		1 01111	6	
Permitted Phases	4			8			2	_		6		
Actuated Green, G (s)	70.6	70.6		70.6	70.6		6.6	6.6		6.6	6.6	
Effective Green, g (s)	70.6	70.6		70.6	70.6		6.6	6.6		6.6	6.6	
Actuated g/C Ratio	0.78	0.78		0.78	0.78		0.07	0.07		0.07	0.07	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	1457		239	1419		105	119		104	119	
v/s Ratio Prot		0.62			c0.73		,	0.00		701	0.00	
v/s Ratio Perm	0.19			0.12			0.00	0.00		c0.05	0.00	
v/c Ratio	0.24	0.79		0.15	0.93		0.07	0.02		0.69	0.01	
Uniform Delay, d1	2.7	5.6		2.4	7.9		39.0	38.8		40.9	38.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	2.9		0.3	11.2		0.3	0.1		18.1	0.0	
Delay (s)	3.8	8.5		2.7	19.1		39.3	38.9		58.9	38.9	
Level of Service	Α	Α		Α	В		D	D		E	D	
Approach Delay (s)		8.4			18.6			39.0			54.9	
Approach LOS		Α			В			D			D	
Intersection Summary	spiling.					(2000)						
HCM Average Control Delay			15.6	H(	CM Level	of Service	}		В		***************************************	
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			90.3	Sı	ım of lost	time (s)			13.1			
Intersection Capacity Utilization	1		84.7%		U Level o				E			
Analysis Period (min)			15									
c Critical Lane Group												

	National	7	W.	o Carresto de re	4	<i>*</i>	
Movement 4	EBT	EBR	WBL	WBT	NBL	NBR	e. Portonial de la competitación de servicio.
Lane Configurations Volume (veh/h) Sign Control	<b>↑</b> 852 Free	2	5	<b>∢</b> 774 Free	₩ 1 Stop	14	
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph) Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh)	947	2	6	860	1	16	
Median type Median storage veh) Upstream signal (m) pX, platoon unblocked	None			None			
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol			949		1818	947	
vCu, unblocked vol			949		1818	947	
tC, single (s) tC, 2 stage (s)			4.1		6.4	6.2	
tF (s)			2.2		3.5	3.3	
p0 queue free %			99		99	95	
cM capacity (veh/h)			732		86	320	
Direction, Lane #	EB1	····	WB 1				
Volume Total	947	2	866	17			
Volume Dight	0	0	6	1			
Volume Right cSH	0 1700	2 1700	722	16			
Volume to Capacity	0.56	0.00	732 0.01	271 0.06			
Queue Length 95th (m)	0.0	0.00	0.01	0.06 1.5			
Control Delay (s)	0.0	0.0	0.2	19.2			
Lane LOS	0.0	0.0	0. <u>2</u> A	19.2 C			
Approach Delay (s) Approach LOS	0.0		0.2	19,2 C			
Intersection Summary		ALLANIE.		lavat (S)	Tagaday	Nagati	Children Children Bertrauer Bertrauer bei der
Average Delay Intersection Capacity Utilization Analysis Period (min)	l		0.3 54.8% 15	IC	U Level of	Service	Α

	W.	À.	1	<i>p</i>	1	<b>↓</b>	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	parek eta eta kiki eta erren eta
Lane Configurations	#A		Þ			Ą	
Volume (veh/h)	5	5	148	5	2	221	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	6	6	164	6	2	246	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	417	167			170		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	417	167			170		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF(s)	3.5	3.3			2.2		
p0 queue free %	99	99			100		
cM capacity (veh/h)	595	882			1420		
Direction, Lane #	WB1	NB 1	SB 1				
Volume Total	11	170	248				
Volume Left	6	0	2				
Volume Right	6	6	0				
cSH	711	1700	1420				
Volume to Capacity	0.02	0.10	0.00				
Queue Length 95th (m)	0.4	0.0	0.0				
Control Delay (s)	10.1	0.0	0.1				
Lane LOS	В		A				
Approach Delay (s)	10.1	0.0	0.1				
Approach LOS	В						
Intersection Summary			WARRE			nekana.	
Average Delay			0.3				
Intersection Capacity Utilizat	ion		23.2%	ICI	J Level o	f Service	А
Analysis Period (min)			15				• •
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	-	Ł.	Ť	/a.	1	Ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	National State of State of the State of Albanda State of
Lane Configurations	Rys		14			4	
Volume (veh/h)	6	3	203	6	4	244	
Sign Control	Stop		Free			Free	
Grade Peak Hour Factor	0%	0.00	0%	0.00	0.00	0%	
Hourly flow rate (vph)	0.90 7	0.90 3	0.90 226	0.90 7	0.90	0.90	
Pedestrians	1	3	220	ſ	4	271	
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked	500	000			000		
vC, conflicting volume vC1, stage 1 conf vol	509	229			232		
vC2, stage 2 conf vol							
vCu, unblocked vol	509	229			232		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)					,		
tF (s)	3.5	3.3			2.2		
p0 queue free %	99	100			100		
cM capacity (veh/h)	526	815			1347		
Direction, Lane #	WB 1	NB 1	SB 1		ala By	t etter a	Distribution following of the book in the particular states
Volume Total	10	232	276				
Volume Left	7	0	4				
Volume Right	3	7	0				
cSH Values to Carrelle	596	1700	1347				
Volume to Capacity Queue Length 95th (m)	0.02 0.4	0.14	0.00				
Control Delay (s)	11.1	0.0	0.1 0.2				
Lane LOS	В	0.0	0.2 A				
Approach Delay (s)	11.1	0.0	0.2				
Approach LOS	В	0.0	0.2				
Intersection Summary	MB NG			Jergan.		g Aktig	
Average Delay			0.3				
Intersection Capacity Utilization	1		26.0%	ICI	J Level o	f Service	A
Analysis Period (min)			15				

		******	****	*	4		4	#	P	\ <u></u>	-	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	N.	Þ		ħ	Þ		*	ĵ.		K	14	
Volume (vph)	11	691	24	44	587	42	75	3	131	94	4	24
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.85		1.00	0.87	
FIt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1790		1825	1833		1825	1639		1825	1670	
Flt Permitted	0.32	1.00		0.26	1.00		0.74	1.00		0.66	1.00	
Satd. Flow (perm)	619	1790		493	1833		1416	1639		1272	1670	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	768	27	49	652	47	83	3	146	104	4	27
RTOR Reduction (vph)	0	2	0	0	4	0	0	125	0	0	23	0
Lane Group Flow (vph)	12	793	0	49	695	0	83	24	0	104	8	0
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		<u>0 70</u>
Protected Phases		4			8		. 0,,,,,	2		Cilli	6	
Permitted Phases	4			8	· ·		2	-		6	0	
Actuated Green, G (s)	30.2	30.2		30.2	30.2		7.1	7.1		7.1	7.1	
Effective Green, g (s)	30.2	30.2		30.2	30.2		7.1	7.1		7.1	7.1	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.14	0.14		0.14	0.14	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	1073		295	1098		199	231		179	235	
v/s Ratio Prot		c0.44			0.38		100	0.01		110	0.00	
v/s Ratio Perm	0.02			0.10	0.00		0.06	0.01		c0.08	0.00	
v/c Ratio	0.03	0.74		0.17	0.63		0.42	0.10		0.58	0.03	
Uniform Delay, d1	4.1	7.3		4.5	6.5		19.8	18.9		20.3	18.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.7		0.3	1.2		1.4	0.2		4.7	0.1	
Delay (s)	4.2	10.0		4.8	7.7		21.2	19.1		25.0	18.7	
Level of Service	A	A		A	Α.,		C	В		23.0 C	10.7 B	
Approach Delay (s)	, ,	9.9		• • •	7.5		V	19.8		C	23.6	
Approach LOS		A			Α.			10.0 B			23.0 C	
Intersection Summary				Hanana				n Kanta		en jeks 6 i	NAMES A	NNESS:
HCM Average Control Delay		***************************************	11.1	H(	CM Level	of Service	·		В	····		
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			50.4	St	ım of lost	time (s)			13.1			
Intersection Capacity Utilization			67.3%		U Level o				С			
Analysis Period (min)			15									
c Critical Lane Group												

		encusality o	***************************************	W.	4	*	*	<b>†</b>	p	<b>\</b>	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	₿		ħ	ß		*	þ		Ŋ	<b>\$</b>	
Volume (vph)	23	806	79	143	884	94	48	11	90	65	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1845		1825	1812		1825	1664		1825	1748	
Flt Permitted	0.14	1.00		0.20	1.00		0.91	1.00		0.91	1.00	
Satd. Flow (perm)	272	1845		381	1812		1746	1664		1746	1748	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	896	88	159	982	104	53	12	100	72	12	18
RTOR Reduction (vph)	0	6	0	0	6	0	0	92	0	0	17	0
Lane Group Flow (vph)	26	978	0	159	1080	0	53	20	0	72	13	0
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	40.1	40.1		40.1	40.1		4.4	4.4		4.4	4.4	
Effective Green, g (s)	40.1	40.1		40.1	40.1		4.4	4.4		4.4	4.4	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.08	0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	189	1284		265	1261		133	127		133	134	
v/s Ratio Prot		0.53			c0.60			0.01			0.01	
v/s Ratio Perm	0.10			0.42			0.03			c0.04		
v/c Ratio	0.14	0.76		0.60	0.86		0.40	0.15		0.54	0.10	
Uniform Delay, d1	2.9	5.7		4.6	6.6		25.3	24.9		25.6	24.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	2.7		3.6	5.9		2.0	0.6		4.4	0.3	
Delay (s)	3.3	8.4		8.2	12.5		27.3	25.4		30.1	25.1	
Level of Service	Α	Α		Α	В		С	С		С	С	
Approach Delay (s)		8.3			12.0			26.0			28.6	
Approach LOS		Α			В			С			С	
Intersection Summary			AMMA								ranaki y	Banker
HCM Average Control Delay			12.1	H	CM Level	of Service	9		В			
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			57.6		um of lost				13.1			
Intersection Capacity Utilizatio	n		82.6%	IC	U Level o	of Service			Ε			
Analysis Period (min)			15									
c Critical Lane Group												

	nomental		W. Carre	<b>4</b>	*	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	Specification of the state of the specific speci
Lane Configurations	Ą	7	Ϋ́j	个	W		
Volume (veh/h)	679	5	16	670	12	47	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	754	6	18	744	13	52	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage Right turn flare (veh)							
Median type	None			None			
Median storage veh)	140116			None			
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			760		1534	754	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			760		1534	754	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)			0.0		0.5		
tF (s)			2.2		3.5	3.3	
p0 queue free % cM capacity (veh/h)			98 861		89 127	87 412	
A Section of the sect						412	
Direction, Lane #	EB 1	EB 2		WB 2			
Volume Total	754	6	18	744	66		
Volume Left Volume Right	0 0	0 6	18	0	13		
cSH	1700	1700	0 861	0 1700	52 283		
Volume to Capacity	0.44	0.00	0.02	0.44	0.23		
Queue Length 95th (m)	0.0	0.0	0.5	0.0	6.7		
Control Delay (s)	0.0	0.0	9.3	0.0	21.5		
Lane LOS			A	***	C		
Approach Delay (s)	0.0		0.2		21.5		
Approach LOS					С		
Intersection Summary	e dates is			ing Nex		ille i j	
Average Delay			1.0				
Intersection Capacity Utilization	n		46.0%	IC	U Level of	Service	e A
Analysis Period (min)			15				

Volume Total       963       14       59       994       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       714       1700       177         Volume to Capacity       0.57       0.01       0.08       0.58       0.31         Queue Length 95th (m)       0.0       0.0       2.0       0.0       9.4         Control Delay (s)       0.0       0.0       10.5       0.0       34.2         Lane LOS       B       D         Approach Delay (s)       0.0       0.6       34.2         Approach LOS       D    Intersection Summary		***************************************	The state of the s		**************************************	**	Mar	
Volume (Verlift) 867 13 53 895 8 41  Sign Control Free Stop  Grade 0% 0% 0% 0%  Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90  Pede Hourly flow rate (vph) 963 14 59 994 9 46  Pedestrians Lane Width (m)  Walking Speed (m/s)  Percent Blockage Right turn flare (verh)  Median type None Median storage veh) Upstream signal (m)  Pxx, platoon unblocked vc. conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, stage 2 conf vol vC4, stage 3 conf vol vC5, stage (s)  If (s) 92 84 85  Mc apacity (verlift)  Direction, Lane # EB1 EB2 WB1 WB2 NB1  Volume Total 963 14 59 994 54  Volume Total 967 0.01 0.08 0.58 0.31  Queue Length 96th (m) 0.0 0.0 2.0 0.9 4  Control Delay (s) 0.0 0.0 10.5 0.0 34.2  Lane LOS B D D  Approach LOS D  Intersection Summary  Average Delay  Intersection Capacity Utilization 57.1% ICU Level of Service B	Movement	EBT	EBR	WBL	WBT	NBL	NBR	the characteristic strength of the characteristic con-
Volume (Verlift) 867 13 53 895 8 41  Sign Control Free Stop  Grade 0% 0% 0% 0%  Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90  Pede Hourly flow rate (vph) 963 14 59 994 9 46  Pedestrians Lane Width (m)  Walking Speed (m/s)  Percent Blockage Right turn flare (verh)  Median type None Median storage veh) Upstream signal (m)  Pxx, platoon unblocked vc. conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, stage 2 conf vol vC4, stage 3 conf vol vC5, stage (s)  If (s) 92 84 85  Mc apacity (verlift)  Direction, Lane # EB1 EB2 WB1 WB2 NB1  Volume Total 963 14 59 994 54  Volume Total 967 0.01 0.08 0.58 0.31  Queue Length 96th (m) 0.0 0.0 2.0 0.9 4  Control Delay (s) 0.0 0.0 10.5 0.0 34.2  Lane LOS B D D  Approach LOS D  Intersection Summary  Average Delay  Intersection Capacity Utilization 57.1% ICU Level of Service B	Lane Configurations	4	7	শূ	<b>†</b>	M		
Grade 0% 0% 0% 0% Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None None Median storage veh) Upstream signal (m) Px, platioon unblocked vc, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 8 conf vol vC3, stage 1 conf vol vC4, stage 8 conf vol vC5, stage 8 conf vol vC5, stage 9 conf vol vC4, stage 1 conf vol vC5, stage 1 conf vol vC5, stage 9 conf vol vC6, stage 1 conf vol vC7, stage 1 conf vol vC8, stage 1 conf vol vC9, stage 1 conf vol vC1, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 1 conf vol vC4, stage 1 conf vol vC5, stage 1 conf vol vC6, stage 1 conf vol vC7, stage 1 conf vol vC8, stage 1 conf vol vC9, stage 1 conf vol vC9, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 1 conf vol vC1, stage 1 conf vol vC1, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 1 conf vol vC2, stage 2 conf vol vC3, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC3, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC5, stage 2 conf vol vC4, stage 1 conf vol vC6, stage 1 conf vol vC7, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC3, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC6, stage 1 conf vol vC6, stage 1 conf vol vC6, stage 1 conf vol vC7, stage 1 conf vol vC8, stage 1 conf vol vC8, stage 1 conf vol vC9, stage 2 conf vol vC1, stage 2 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, stage 2 conf vol vC5, stage 2 conf vol vC6, stage 2 conf vol vC6, stage 2 conf vol vC7, stage 2 conf							41	
Grade 0% 0% 0% 0% 0% Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	Sign Control	Free			Free	Stop		
Hourly flow rate (vph) 963 14 59 994 9 46 Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (m) Px, platon unblocked vC, conflicting volume 978 2076 963 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) Ef (s) 2,2 3,5 3,3 p0 queue free 92 84 85 cM capacity (veh/n) 714 55 313 Direction, Lane # EB 1 EB 2 WB 1 WB 2 NB 1 Volume Total 963 14 59 994 54 Volume Right 0 14 0 0 46 cSH 1700 7710 1700 714 1700 1777 Volume Right 0 0,0 0,0 10,5 0,0 34,2 Lane LOS B D Approach Delay (s) 0,0 0,0 0,6 34,2 Approach LOS   Intersection Summary Average Delay Intersection Capacity Utilization   Intersection Capacity Utilization   Intersection Summary Average Delay Intersection Capacity Utilization   Intersection Capacity Utilization   Intersection Summary Intersection Capacity Utilization   Intersection Capacity Utilization   Intersection Summary Intersection Capacity Utilization   Intersection Summary Intersec	Grade	0%			0%	0%		
Pedestrians   Lane Width (m)   Walking Speed (m/s)   Percent Blockage   Right turn flare (veh)   Median type   None   Median storage veh)   Upstream signal (m)   PX, platoon unblocked   VC, conflicting volume   978   2076   963   963   VC1, stage 1 conf vol   VC2, stage 2 conf vol   VC2, stage 2 conf vol   VC2, stage 1 conf vol   VC2, stage 2 conf vol   VC3, stage 3 conf vol   VC4, stage 4   V6, single (s)	Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median storage veh) Upstream signal (m) pX, platoon unblocked vC, conflicting volume vC2, stage 1 conf vol vC2, stage 2 conf vol vC2, unblocked vol C, 2 stage 5 (m) pX platoon unblocked vC, conflicting volume vC2, stage 1 conf vol vC2, unblocked vol vC3, stage 1 conf vol vC4, unblocked vol vC5, stage 2 conf vol vC4, unblocked vol vC6, 2 stage (s) UF (s)	Hourly flow rate (vph)	963	14	59	994	9	46	
Walking Speed (m/s)         Percent Blockage       Right turn flare (veh)       None       None         Median storage veh)       Upstream signal (m)       PX, platoon unblocked         VC, conflicting volume       978       2076       963         vC1, stage 1 conf vol       VC2, stage 2 conf vol         vC2, stage 2 conf vol       VC1, stage 1 conf vol         VC2, stage (s)       4.1       6.4       6.2         LC, 2 stage (s)       2.2       3.5       3.3         p0 queue free %       92       84       85         cM capacity (veh/h)       714       55       313         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       963       14       59       994       54         Volume Right       0       0       59       0       9         Volume Right       0       170       714       1700       177         Volume to Capacity       0.57       0.01       0.08       0.58       0.31         Queue Length 95th (m)       0.0       0.0       0.0       34.2         Lane LOS       B       D         Approach Delay (s)       0.0<								
Percent Blockage   Right turn flare (veh)   Median storage veh)   Upstream signal (m)   Pyx, platoon unblocked vC, conflicting volume   978   2076   963	` ,							
Right turn flare (veh)   Median type   None   None   None   Median storage veh								
Median type     None     None       Median storage veh)     Upstream signal (m)       pX, platoon unblocked       vC, conflicting volume     978     2076     963       vC1, stage 1 conf vol     vC2, stage 2 conf vol       vC1, unblocked vol     978     2076     963       tC, single (s)     4.1     6.4     6.2       tC, 2 stage (s)     5     2.2     3.5     3.3       p0 queue free %     92     84     85       cM capacity (veh/h)     774     55     313       Direction, Lane #     EB 1     EB 2     WB 1     WB 2     NB 1       Volume Total     963     14     59     994     54       Volume Left     0     0     59     0     9       Volume Right     0     14     0     0     46       cSH     1700     1700     714     1700     177       Volume to Capacity     0.57     0.01     0.08     0.58     0.31       Queue Length 95th (m)     0.0     0.0     2.0     0.0     9.4       Control Delay (s)     0.0     0.0     34.2       Approach Delay (s)     0.0     0.6     34.2       Approach LOS     D     1.2								
Median storage veh)       Upstream signal (m)         DX, platoon unblocked       vC, conflicting volume       978       2076       963         vC1, stage 1 conf vol       vC2, stage 2 conf vol       vCu, unblocked vol       978       2076       963         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       1F (s)       2.2       3.5       3.3         p0 queue free %       92       84       85         cM capacity (veh/h)       714       55       313         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       963       14       59       99 4       54         Volume Right       0       0       59       0       9         Volume to Capacity       0.57       0.01       0.08       0.58       0.31         Queue Length 95th (m)       0.0       0.0       2.0       0.0       9.4         Control Delay (s)       0.0       0.0       34.2         Lane LOS       B       D         Approach Delay (s)       0.0       0.6       34.2         Approach LOS       D       Intersection Summary         Average Delay								
Upstream signal (m) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 8  CC, stage (s) tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane #  EB 1  EB 2  WB 1  WB 2  NB 1  Volume Total  Volume Right 0 0 14 0 0 0 46  CSH 1700 1700 1700 1701 1700 1707 1700 1707 1700 1707 1700 1707 1700		None			None			
pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, unblocked vol 978 2076 963 C2, stage (s) C3, stage (s) C4, stage (s) C5, stage (s) C5, stage (s) C5, stage (s) C6, stage (s) C7, stage (s) C8, stage (s) C8, stage (s) C9, sta								
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) tC, single (s) tC, 2 stage (s) tF (s) p0 queue free % p1 queue free % p2 queue free % p2 queue free % p3 queue free % p4 queue free % p2 queue free % p3 queue free % p4 queue free % p4 queue free % p5 queue free % p6 queue f								
vC1, stage 1 conf vol vC2, stage 2 conf vol vCu, unblocked vol tC, single (s) tC, single (s) tF (s) p0 queue free %								
vC2, stage 2 conf vol       vCu, unblocked vol     978     2076     963       tC, single (s)     4.1     6.4     6.2       tC, 2 stage (s)     tF (s)     2.2     3.5     3.3       pO queue free %     92     84     85       cM capacity (veh/h)     714     55     313       Direction, Lane #     EB 1     EB 2     WB 1     WB 2     NB 1       Volume Total     963     14     59     994     54       Volume Left     0     0     59     0     9       Volume Right     0     14     0     0     46       cSH     1700     1700     714     1700     177       Volume to Capacity     0.57     0.01     0.08     0.58     0.31       Queue Length 95th (m)     0.0     0.0     2.0     0.0     9.4       Control Delay (s)     0.0     0.0     10.5     0.0     34.2       Lane LOS     B     D       Approach Delay (s)     0.0     0.6     34.2       Approach LOS     D       Intersection Summary       Average Delay     1.2       Intersection Capacity Utilization     57.1%     ICU Level of Service     B <td></td> <td></td> <td></td> <td>978</td> <td></td> <td>2076</td> <td>963</td> <td></td>				978		2076	963	
vCu, unblocked vol     978     2076     963       tC, single (s)     4.1     6.4     6.2       tC, 2 stage (s)     15 (s)     2.2     3.5     3.3       pO queue free %     92     84     85       cM capacity (veh/h)     714     55     313       Direction, Lane #     EB 1     EB 2     WB 1     WB 2     NB 1       Volume Total     963     14     59     994     54       Volume Left     0     0     59     0     9       Volume Right     0     14     0     0     46       cSH     1700     770     714     1700     177       Volume to Capacity     0.57     0.01     0.08     0.58     0.31       Queue Length 95th (m)     0.0     0.0     2.0     0.0     9.4       Control Delay (s)     0.0     0.0     10.5     0.0     34.2       Lane LOS     B     D       Approach Delay (s)     0.0     0.6     34.2       Approach LOS     D       Intersection Summary       Average Delay     1.2       Intersection Capacity Utilization     57.1%     ICU Level of Service     B								
tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) tF (s) 2.2 3.5 3.3 p0 queue free % 92 84 85 cM capacity (veh/h) 714 55 313  Direction, Lane # EB 1 EB 2 WB 1 WB 2 NB 1  Volume Total 963 14 59 994 54  Volume Left 0 0 59 0 9  Volume Right 0 14 0 0 46 cSH 1700 1700 714 1700 177  Volume to Capacity 0.57 0.01 0.08 0.58 0.31  Queue Length 95th (m) 0.0 0.0 2.0 0.0 9.4  Control Delay (s) 0.0 0.0 10.5 0.0 34.2  Lane LOS B D  Approach Delay (s) 0.0 0.6 34.2  Approach LOS  Intersection Summary  Average Delay  Intersection Capacity Utilization 57.1% ICU Level of Service B								
tC, 2 stage (s) tF (s)	•							
tF (s)				4.1		6.4	6.2	
p0 queue free %								
CM capacity (veh/h)       714       55       313         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       963       14       59       994       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       714       1700       177         Volume to Capacity       0.57       0.01       0.08       0.58       0.31         Queue Length 95th (m)       0.0       0.0       2.0       0.0       9.4         Control Delay (s)       0.0       0.0       10.5       0.0       34.2         Lane LOS       B       D         Approach LOS       D         Intersection Summary       1.2         Intersection Capacity Utilization       57.1%       ICU Level of Service       B								
Direction, Lane #								
Volume Total       963       14       59       994       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       714       1700       177         Volume to Capacity       0.57       0.01       0.08       0.58       0.31         Queue Length 95th (m)       0.0       0.0       2.0       0.0       9.4         Control Delay (s)       0.0       0.0       10.5       0.0       34.2         Lane LOS       B       D         Approach Delay (s)       0.0       0.6       34.2         Approach LOS       D         Intersection Summary       1.2         Intersection Capacity Utilization       57.1%       ICU Level of Service       B	civi capacity (ven/n)			714		55	313	
Volume Left         0         0         59         0         9           Volume Right         0         14         0         0         46           cSH         1700         1700         714         1700         177           Volume to Capacity         0.57         0.01         0.08         0.58         0.31           Queue Length 95th (m)         0.0         0.0         2.0         0.0         9.4           Control Delay (s)         0.0         0.0         10.5         0.0         34.2           Lane LOS         B         D           Approach Delay (s)         0.0         0.6         34.2           Approach LOS         D           Intersection Summary         1.2           Intersection Capacity Utilization         57.1%         ICU Level of Service         B	Direction, Lane #	***************************************						
Volume Right         0         14         0         0         46           cSH         1700         1700         714         1700         177           Volume to Capacity         0.57         0.01         0.08         0.58         0.31           Queue Length 95th (m)         0.0         0.0         2.0         0.0         9.4           Control Delay (s)         0.0         0.0         10.5         0.0         34.2           Lane LOS         B         D           Approach Delay (s)         0.0         0.6         34.2           Approach LOS         D           Intersection Summary         1.2           Intersection Capacity Utilization         57.1%         ICU Level of Service         B								
CSH 1700 1700 714 1700 177  Volume to Capacity 0.57 0.01 0.08 0.58 0.31  Queue Length 95th (m) 0.0 0.0 2.0 0.0 9.4  Control Delay (s) 0.0 0.0 10.5 0.0 34.2  Lane LOS B D  Approach Delay (s) 0.0 0.6 34.2  Approach LOS D  Intersection Summary  Average Delay 1.2  Intersection Capacity Utilization 57.1% ICU Level of Service B								
Volume to Capacity         0.57         0.01         0.08         0.58         0.31           Queue Length 95th (m)         0.0         0.0         2.0         0.0         9.4           Control Delay (s)         0.0         0.0         10.5         0.0         34.2           Lane LOS         B         D           Approach Delay (s)         0.0         0.6         34.2           Approach LOS         D           Intersection Summary         D           Average Delay         1.2           Intersection Capacity Utilization         57.1%         ICU Level of Service         B								
Queue Length 95th (m)       0.0       0.0       2.0       0.0       9.4         Control Delay (s)       0.0       0.0       10.5       0.0       34.2         Lane LOS       B       D         Approach Delay (s)       0.0       0.6       34.2         Approach LOS       D         Intersection Summary       D         Average Delay       1.2         Intersection Capacity Utilization       57.1%       ICU Level of Service       B								
Control Delay (s) 0.0 0.0 10.5 0.0 34.2  Lane LOS B D  Approach Delay (s) 0.0 0.6 34.2  Approach LOS D  Intersection Summary  Average Delay 1.2  Intersection Capacity Utilization 57.1% ICU Level of Service B								
Lane LOS         B         D           Approach Delay (s)         0.0         0.6         34.2           Approach LOS         D           Intersection Summary         1.2           Intersection Capacity Utilization         57.1%         ICU Level of Service         B								
Approach Delay (s) 0.0 0.6 34.2 Approach LOS D  Intersection Summary  Average Delay 1.2 Intersection Capacity Utilization 57.1% ICU Level of Service B		U.U	0.0		0.0			
Approach LOS D  Intersection Summary  Average Delay 1.2  Intersection Capacity Utilization 57.1% ICU Level of Service B		0.0						
Average Delay 1.2 Intersection Capacity Utilization 57.1% ICU Level of Service B	Approach LOS	0.0		0.0				
Intersection Capacity Utilization 57.1% ICU Level of Service B	Intersection Summary	uga Byraka :				Nyissyi n		an processor programment in the second contraction of the second contr
	Average Delay							
Analysis Period (min) 15		ition			IC	U Level o	f Service	В
	Analysis Period (min)			15				

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Movement	WBL	WBR	NBT	NBR	SBL	SBT	one in the first of the Alberta Agreement of the Agreemen
Lane Configurations	N. W.		Þ			4	
Volume (veh/h)	16	5	125	8	2	206	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	18	6	139	9	2	229	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	377	143			148		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	377	143			148		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			100		
cM capacity (veh/h)	628	909			1446		
Direction, Lane #	WB 1	NB 1	SB 1	<u> </u>			
Volume Total	23	148	231				
Volume Left	18	0	2				
Volume Right	6	9	0				
cSH	678	1700	1446				
Volume to Capacity	0.03	0.09	0.00				
Queue Length 95th (m)	0.8	0.0	0.0				
Control Delay (s)	10.5	0.0	0.1				
Lane LOS	В		Α				
Approach Delay (s)	10.5	0.0	0.1				
Approach LOS	В						
Intersection Summary		પ્રેમિયું ક		granted:	s (NaNa)	hedbekej	evite hanne is Consever, perger extrancepag esq.
Average Delay			0.7				
Intersection Capacity Utilization	on		22.4%	ICL	Level of	Service	Α
Analysis Period (min)			15				

	¥~~	A.	Î	<i>[</i> **	1/2	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	A CONTRACTOR OF THE CONTRACTOR OF THE SECTION OF THE CONTRACTOR OF
Lane Configurations	N/A		T»			4	
Volume (veh/h)	13	3	192	18	4	209	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph) Pedestrians	14	3	213	20	4	232	
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)			NOILC			NONE	
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	464	223			233		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	464	223			233		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	100			100		
cM capacity (veh/h)	558	821			1346		
Direction, Lane #	WB 1	NB 1	SB 1		si i iinghy i	anin n	
Volume Total	18	233	237				
Volume Left	14	0	4				
Volume Right	3	20	0				
cSH	594	1700	1346				
Volume to Capacity	0.03	0.14	0.00				
Queue Length 95th (m)	0.7	0.0	0.1				
Control Delay (s)	11.3	0.0	0.2				
Lane LOS Approach Delay (s)	B 11.2	0.0	A				
Approach LOS	11.3 B	0.0	0.2				
Intersection Summary	<u> </u>			an ka	AUGAN.		
Average Delay			0.5				
Intersection Capacity Utilization			24.2%	IC	U Level o	f Service	Α
Analysis Period (min)			15				

				The same of the sa	is The secondary		*	Î	<i>M</i>	N Jan	ļ	4
Movement Advantage Advantage	EBL	EBT	EBR	WBL	WBT	WBR	NBL NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	N.	1		'n	ß		11/2	<b>1</b> >		N.	ß	
Volume (vph)	11	803	24	44	687	42	75	3	131	94	4	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1791		1825	1835		1825	1639		1825	1670	
Flt Permitted	0.26	1.00		0.19	1.00		0.74	1.00		0.66	1.00	
Satd. Flow (perm)	494	1791		361	1835		1416	1639		1272	1670	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	892	27	49	763	47	83	3	146	104	4	27
RTOR Reduction (vph)	0	2	0	0	3	0	0	126	0	0	23	0
Lane Group Flow (vph)	12	917	0	49	807	0	83	23	0	104	8	Ö
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2		. 0,,,,	6	
Permitted Phases	4			8			2			6	Ť	
Actuated Green, G (s)	33.9	33.9		33.9	33.9		7.3	7.3		7.3	7.3	
Effective Green, g (s)	33.9	33.9		33.9	33.9		7.3	7.3		7.3	7.3	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.13	0.13		0.13	0.13	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	308	1118		225	1146		190	220		171	225	
v/s Ratio Prot		c0.51			0.44			0.01			0.00	
v/s Ratio Perm	0.02			0.14			0.06			c0.08		
v/c Ratio	0.04	0.82		0.22	0.70		0.44	0.10		0.61	0.03	
Uniform Delay, d1	3.9	7.9		4.4	6.8		21.6	20.6		22.2	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.9		0.5	2.0		1.6	0.2		6.0	0.1	
Delay (s)	4.0	12.8		4.9	8.8		23.2	20.8		28.2	20.5	
Level of Service	Α	В		Α	Α		С	С		С	С	
Approach Delay (s)		12.7			8.6			21.7			26.4	
Approach LOS		В			Α			С			С	
Intersection Summary	gywa y				Hajiba,	nga ani	11124	ja Nijera je	a Alain		ysi terre	<u>,                                    </u>
HCM Average Control Delay			12.9	HC	M Level	of Service	<b>:</b>		В			•
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			54.3		m of lost				13.1			
Intersection Capacity Utilization	}		73.2%	ICI	J Level o	f Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

		annium (fig.	7		*(\$	4	*\	Î	M	<b>\</b>	ļ	41
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL NBL	NBT	NBR	SBL 1	SBT	SBR
Lane Configurations	×	ß		J.	ß		K	Þ		N <sub>1</sub>	þ	
Volume (vph)	23	949	79	143	1030	94	48	11	90	65 65	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1848		1825	1814		1825	1664		1825	1748	
Flt Permitted	0.09	1.00		0.14	1.00		0.74	1.00		0.69	1.00	
Satd. Flow (perm)	171	1848		277	1814		1417	1664		1325	1748	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1054	88	159	1144	104	53	12	100	72	12	18
RTOR Reduction (vph)	0	3	0	0	4	0	0	92	0	0	17	0
Lane Group Flow (vph)	26	1139	0	159	1244	0	53	20	0	72	13	Ō
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2		. 0	6	
Permitted Phases	4			8			2	_		6	Ü	
Actuated Green, G (s)	57.1	57.1		57.1	57.1		5.8	5.8		5.8	5.8	
Effective Green, g (s)	57.1	57.1		57.1	57.1		5.8	5.8		5.8	5.8	
Actuated g/C Ratio	0.75	0.75		0.75	0.75		0.08	0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	128	1388		208	1363		108	127		101	133	
v/s Ratio Prot		0.62			c0.69			0.01			0.01	
v/s Ratio Perm	0.15			0.57			0.04			c0.05	0,0.	
v/c Ratio	0.20	0.82		0.76	0.91		0.49	0.15		0.71	0.10	
Uniform Delay, d1	2.8	6.1		5.5	7.5		33.7	32.8		34.3	32.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.0	4.0		15.3	9.5		3.5	0.6		21.1	0.3	
Delay (s)	3.6	10.1		20.8	17.0		37.2	33.4		55.4	33.0	
Level of Service	Α	В		С	В		D	С		E	С	
Approach Delay (s)		10.0			17.4			34.6			48.8	
Approach LOS		Α			В			С			D	
Intersection Summary	Mayber.	BARBARA	anyaa ja			A PARAMET	N.S.A.E.A		a salak waki	Anoshu.	414130	ar nai
HCM Average Control Delay			16.5	H	CM Level	of Service			В	·····	***************************************	
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			76.0		ım of lost				13.1			
Intersection Capacity Utilization	1	•	90.3%	IC	U Level o	f Service			Ε			
Analysis Period (min)			15									
c Critical Lane Group												

			Market.	o Pigarera	**	p	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	and the first of the first of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section of the second section is a second section of the second section of the second section is a second section of the section of t
Lane Configurations	*	7	ሻ	李	M		
Volume (veh/h)	791	5	16	770	12	47	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph) Pedestrians Lane Width (m)	879	6	18	856	13	52	
Walking Speed (m/s) Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			884		1770	879	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			884		1770	879	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			98		85	85	
cM capacity (veh/h)			774		91	350	
Direction, Lane #	EB1	EB 2	WB 1	WB 2	NB 1		e en relación de la periodica de servición de la periodica en
Volume Total	879	6	18	856	66		
Volume Left	0	0	18	0	13		
Volume Right	0	6	0	0	52		
cSH	1700	1700	774	1700	221		
Volume to Capacity	0.52	0.00	0.02	0.50	0.30		
Queue Length 95th (m)	0.0	0.0	0.5	0.0	9.1		
Control Delay (s)	0.0	0.0	9.8	0.0	28.0		
Lane LOS			Α		D		
Approach Delay (s) Approach LOS	0.0		0.2		28.0 D		
Intersection Summary				Nakaj	eja kváti		
Average Delay		******	1.1				
Intersection Capacity Utilization Analysis Period (min)	1		51.9% 15	ICU	J Level of	Service	А

	<u>\</u>		War.	e Salaranas	***	P	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	$(S_{ij}(S_{ij}), S_{ij}(S_{ij}), S_{ij}(S_{ij}(S_{ij}), S_{ij}(S_{ij}), S_{i$
Lane Configurations	Ą	ř	186	4	M		
Volume (veh/h)	1010	13	53	1041	8	41	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	1122	14	59	1157	9	46	
Pedestrians Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			1137		2397	1122	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol vCu, unblocked vol			1137		2207	4400	
tC, single (s)			4.1		2397 6.4	1122 6.2	
tC, 2 stage (s)			4.1		0.4	0.2	
tF (s)			2.2		3.5	3.3	
p0 queue free %			91		74	82	
cM capacity (veh/h)			622		34	253	
Direction, Lane #	EB1	EB 2	WB 1	WB 2	NB 1		di samua a di Pikara, rabasa di ripara,
Volume Total	1122	14	59	1157	54		
Volume Left	0	0	59	0	9		
Volume Right	0	14	0	0	46		
cSH	1700	1700	622	1700	123		
Volume to Capacity	0.66	0.01	0.09	0.68	0.44		
Queue Length 95th (m)	0.0	0.0	2.4	0.0	14.7		
Control Delay (s) Lane LOS	0.0	0.0	11.4 B	0.0	55.6 F		
Approach Delay (s)	0.0		0.6		55.6		
Approach LOS	0.0		0.0		55.0 F		
Intersection Summary	Baran A.	haratiji				ig wate	Kurkup majik ka milandin den kemalak kanggunan meleb
Average Delay			1.5				
Intersection Capacity Utilization	n		64.8%	IC	U Level o	f Service	C
Analysis Period (min)			15				<del>-</del>

	· Samuel	4	Î	P	, Mar.	-					***************************************
Movement	WBL	WBR	NBT	NBR	SBL	SBT				to be the second	
Lane Configurations	N.		ß	***************************************		4					·····
Volume (veh/h)	16	5	143	8	2	233					
Sign Control	Stop		Free			Free					
Grade	0%		0%			0%					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90					
Hourly flow rate (vph)	18	6	159	9	2	259					
Pedestrians											
Lane Width (m)											
Walking Speed (m/s)											
Percent Blockage											
Right turn flare (veh)											
Median type			None			None					
Median storage veh)											
Upstream signal (m)											
pX, platoon unblocked											
vC, conflicting volume	427	163			168						
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	427	163			168						
tC, single (s)	6.4	6.2			4.1						
tC, 2 stage (s)											
tF (s)	3.5	3.3			2.2						
p0 queue free %	97	99			100						
cM capacity (veh/h)	588	887			1422						
	WB 1	140 1	SB 1	againe in	<u> Adamir</u>	i translation		Maria da de la composição	THE STAN AS		* ***
Volume Total	23	168	261								
Volume Left	18	0	2								
Volume Right	6	9	0								
cSH	639	1700	1422								
Volume to Capacity	0.04	0.10	0.00								
Queue Length 95th (m)	0.9	0.0	0.0								
Control Delay (s)	10.8	0.0	0.1								
Lane LOS	В		Α								
Approach Delay (s)	10.8	0.0	0.1								
Approach LOS	В										
	u Vieta	in eben				Majaria.	nii ningh				
Average Delay			0.6								
Intersection Capacity Utilization			23.9%	ICL	J Level o	f Service			Α		
Analysis Period (min)			15								

	War.	*	1	M	1	<b> </b>					
Movement	WBL	WBR	NBT	NBR	SBL	SBT		1.15-1.11	+ 5 - + 5 - 5	. N:**	i, 1
Lane Configurations	βĄ		1>			4					
Volume (veh/h)	13	3	217	18	4	238					
Sign Control	Stop		Free			Free					
Grade	0%		0%			0%					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90					
Hourly flow rate (vph)	14	3	241	20	4	264					
Pedestrians											
Lane Width (m)											
Walking Speed (m/s)											
Percent Blockage Right turn flare (veh)											
Median type			None			None					
Median storage veh)			IVOITE			NOTE					
Upstream signal (m)											
pX, platoon unblocked											
vC, conflicting volume	524	251			261						
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	524	251			261						
tC, single (s)	6.4	6.2			4.1						
tC, 2 stage (s)											
tF (s)	3.5	3.3			2.2						
p0 queue free %	97	100			100						
cM capacity (veh/h)	515	792			1315						
Direction, Lane #	WB 1	NB 1	SB 1					કહું કુ 'કે જુ કરાઈ		Maria M.	
Volume Total	18	261	269								
Volume Left	14	0	4								
Volume Right	3	20	0								
cSH Valuma to Canadity	551	1700	1315								
Volume to Capacity	0.03	0.15	0.00								
Queue Length 95th (m) Control Delay (s)	0.8 11.7	0.0 0.0	0.1 0.2								
Lane LOS	11.7 B	0.0	0.2 A								
Approach Delay (s)	11.7	0.0	0.2								
Approach LOS	В	0.0	0.2.								
Intersection Summary	48,346,47				<u> Karakan</u>	ek EJAÑA			New State	MARK	11 A 21 11 11 11 11 11 11 11 11 11 11 11 11
Average Delay			0.5								
Intersection Capacity Utilization	n		25.7%	IC	U Level of	of Servic	e	1	4		
Analysis Period (min)			15								

	_mark			Marin .	ristigariana.	A.	*	Î	M	1	1	
Movement Mariana and American	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	js.	Þ		ሻ	þ		W.	ß		Ŋ	ß	
Volume (vph)	11	882	24	44	757	42	7Ś	3	131	94	4	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1791		1825	1836		1825	1639		1825	1670	
Flt Permitted	0.22	1.00		0.15	1.00		0.74	1.00		0.66	1.00	
Satd. Flow (perm)	422	1791		284	1836		1416	1639		1272	1670	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	980	27	49	841	47	83	3	146	104	4	27
RTOR Reduction (vph)	0	1	0	0	3	0	0	117	0	0	24	0
Lane Group Flow (vph)	12	1006	0	49	885	0	83	32	0	104	7	0
Heavy Vehicles (%)	0%	7%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm		***************************************	Perm	···········		Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.9	36.9		36.9	36.9		7.1	7.1		7.1	7.1	
Effective Green, g (s)	36.9	36.9		36.9	36.9		7.1	7.1		7.1	7.1	
Actuated g/C Ratio	0.65	0.65		0.65	0.65		0.12	0.12		0.12	0.12	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	273	1157		184	1186		176	204	~~~~	158	208	
v/s Ratio Prot		c0.56			0.48			0.02			0.00	
v/s Ratio Perm	0.03			0.17			0.06			c0.08		
v/c Ratio	0.04	0.87		0.27	0.75		0.47	0.16		0.66	0.04	
Uniform Delay, d1	3.7	8.2		4.3	6.9		23.3	22.3		23.8	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	7.1		0.8	2.6		2.0	0.4		9.5	0.1	
Delay (s)	3.7	15.3		5.1	9.5		25.2	22.7		33.3	22.1	
Level of Service	Α	В		Α	Α		С	С		С	Ç	
Approach Delay (s)		15.2			9.3			23.6			30.8	
Approach LOS		В			Α			С			С	
Intersection Summary		pagas.	VHNQS		o been d	i Timak m		vijaigja	s is libra	i niyayii, b	HA QX	Parkers.
HCM Average Control Delay			14.5	H	CM Level	of Service	9		В			
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			57.1	St	um of lost	time (s)			13.1			
Intersection Capacity Utilization	1		77.3%	IC	U Level o	f Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

				Warner of the same	none and a	A	*	1	All the second	1	-	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	¥	Դ		J.C.	1		₩.	ĵ.		N.	ß	
Volume (vph)	23	1044	79	143	1132	94	48	11	90	65	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	1849		1825	1815		1825	1664		1825	1748	
Flt Permitted	0.07	1.00		0.12	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	127	1849		240	1815		1417	1664		1397	1748	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1160	88	159	1258	104	53	12	100	72	12	18
RTOR Reduction (vph)	0	3	0	0	3	0	0	94	0	0	17	0
Lane Group Flow (vph)	26	1245	0	159	1359	0	53	18	0	72	13	0
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm		***************************************	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	73.7	73.7		73.7	73.7		5.5	5.5		5.5	5.5	
Effective Green, g (s)	73.7	73.7		73.7	73.7		5.5	5.5		5.5	5.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.06	0.06		0.06	0.06	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.1	6.1		6.1	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	101	1476		192	1449		84	99		83	104	***************************************
v/s Ratio Prot		0.67			c0.75			0.01			0.01	
v/s Ratio Perm	0.20			0.66			0.04			c0.05		
v/c Ratio	0.26	0.84		0.83	0.94		0.63	0.18		0.87	0.13	
Uniform Delay, d1	2.4	5.7		5.5	7.5		42.4	41.3		43.0	41.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	4.6		24.4	11.7		14.4	0.9		56.5	0.5	
Delay (s)	3.7	10.3		30.0	19.2		56.8	42.1		99.6	41.7	
Level of Service	Α	В		С	В		E	D		F	D	
Approach Delay (s)		10.2			20.3			46.9			82.5	
Approach LOS		В			С			D			F	
Intersection Summary						d wiki ki	Maria de Car	A, A; 18, 414	1840 1865	n Alauja	n Algeria	<u> Anna E</u>
HCM Average Control Delay			19.6	H	CM Level	of Servic	e		В			
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			92.3		um of lost				13.1			
Intersection Capacity Utilizatio	n		95.6%	IC	U Level o	of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

		****	W.	***************************************		Par	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	, which is with the conjugate parameter $(1,1,1,2,\ldots,2,1)$
Lane Configurations	<b>^</b>	N.	ħ	Ŷ	W.W		
Volume (veh/h)	870	5	16	840	12	47	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	967	6	18	933	13	52	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)	Mana			Mana			
Median type	None			None			
Median storage veh) Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			972		1936	967	
vC1, stage 1 conf vol			012		1000	301	
vC2, stage 2 conf vol							
vCu, unblocked vol			972		1936	967	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			98		81	83	
cM capacity (veh/h)			717		71	311	
Direction, Lane#	EB 1	EB 2	WB 1	WB 2	NB 1		(A,A,B,B,B,B,B,B,B,B,B,B,B,B,B,B,B,B,B,B
Volume Total	967	6	18	933	66		
Volume Left	0	0	18	0	13		
Volume Right	0	6	0	0	52		
cSH	1700	1700	717	1700	185		
Volume to Capacity	0.57	0.00	0.02	0.55	0.35		
Queue Length 95th (m)	0.0	0.0	0.6	0.0	11.4		
Control Delay (s)	0.0	0.0	10.1	0.0	34.8		
Lane LOS	0.0		В		D		
Approach Delay (s)	0.0		0.2		34.8		
Approach LOS					D		
Intersection Summary	va ajulukije						
Average Delay			1.2	.~			m
Intersection Capacity Utilizatio Analysis Period (min)	n		56.0% 15	IC	U Level o	r Service	В

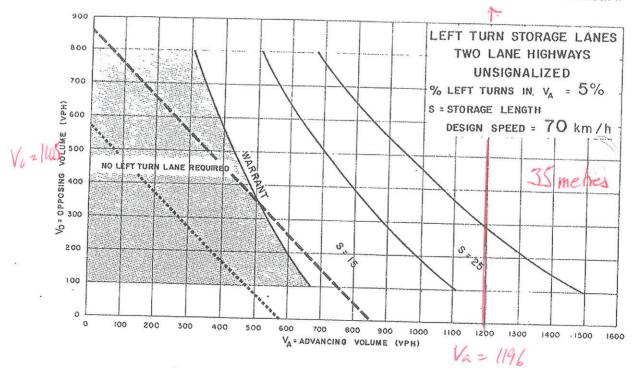
Movement		and the same	-	1		***	P	
Volume (veh/h)         1105         13         53         1143         8         41           Sign Control         Free Grade         Free Own With With With With With With With With	Movement All All All All All All All All All Al	EBT	EBR	WBL	WBT	NBL	NBR	$g_{\rm sp}(88.000)$ , where the former graph of specific form $\pi$
Sign Control         Free Grade         Stop Ow         Stop Ow         Control Ow         Free Grade         Stop Ow	Lane Configurations	*	78	*5				
Grade         0%         0,90	Volume (veh/h)		13			8	41	
Peak Hour Factor         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         Hourly flow rate (vph)         1228         14         59         1270         9         46         Percent Recent Rec						Stop		
Hourly flow rate (vph) 1228 14 59 1270 9 46 Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None None Median storage veh) Upstream signal (m) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 1 conf vol vC3, stage 1 conf vol vC4, unblocked vol tC, single (s) tC, 2 stage (s) tC								
Pedestrians   Lane Width (m)   Walking Speed (m/s)   Percent Blockage   Right turn flare (veh)   Median type   None   None   Median storage veh   Upstream signal (m)   pX, platoon unblocked   VC, conflicting volume   1242   2616   1228   VC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC1, insple (s)   4.1   6.4   6.2   4.2   4.1   6.4   6.2   4.1   6.4   6.2   4.1   6.4   6.2   4.1   6.4   6.2   4.1   6.4   6.2   4.1   6.4   6.2   6.2   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   79   6.3   6.3   79   6.3								
Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (m) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vCu, unblocked vol tC, single (s) tC, single (s) tF (s) p0 queue free % p0 63 79 cM capacity (veh/h) birection, Lane # EB 1 EB 2 WB 1 WB 2 NB 1 Volume Total 1228 NB 1 Volume Left 0 0 59 0 9 Volume Left 0 0 1700 567 1700 95 Volume Left 0 0 1700 567 1700 95 Volume Right 0 0 14 0 0 46 cSH 1700 1700 567 1700 95 Volume to Capacity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1228	14	59	1270	9	46	
Walking Speed (m/s)         Percent Blockage       Right turn flare (veh)         Median type       None       None         Median storage veh)       Upstream signal (m)       Volume Total       1242       2616       1228         VC1, stage 1 conf vol       VC2, stage 2 conf vol       VC2, stage 2 conf vol       VC2, stage 2 conf vol       VC2, stage (s)       4.1       6.4       6.2         IC, 2 stage (s)       2.2       3.5       3.3       3.3       90 queue free %       90       63       79       64       2.19         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1       NB 1         Volume Total       1228       14       59       1270       54       Volume Right       0       0       59       0       9       9       Volume Capacity       0       1700       567       1700       9       Volume Capacity       0       0       567       1700       9       0       9       0       9       0       9       0       9       0       9       0       9       0       9       0       9       0       9       0       0       0       9       0       0       9 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>								
Percent Blockage         Right turn flare (veh)           Median type         None         None           Median storage veh)         None         None           Upstream signal (m)         PX         PX           Upstream signal (m)         PX         PX           PX, platoon unblocked vC, conflicting volume         1242         2616         1228           VC1, stage 1 conf vol         VC2, stage 2 conf vol         VC2, stage 2 conf vol         VC1, unblocked vol         4.1         6.4         6.2           VC2, stage (s)         4.1         6.4         6.2         6.2         6.2         7.2         3.3         9.0 <t< td=""><td>` '</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	` '							
Right turn flare (veh)   Median type   None   None   Median type   None   None   Median storage veh								
Median type         None         None           Median storage veh)         Upstream signal (m)           pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC3, stage 2 conf vol vC4, unblocked vol tC5, single (s)         4.1         6.4         6.2         7.2         8.3         7.9         7.2         8.3         7.9         7.2         8.3         7.9         7.2         9.0								
Median storage veh)       Upstream signal (m)         pX, platoon unblocked       2616       1228         vC1, stage 1 conf vol       2616       1228         vC2, stage 2 conf vol       2616       1228         vCu, unblocked vol       1242       2616       1228         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       2.2       3.5       3.3         p0 queue free %       90       63       79         cM capacity (veh/h)       567       24       219         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       1228       14       59       1270       54         Volume Left       0       0       567       1700       95         Volume Right       0       14       0       0       46         cSH       1700       1700       567       1700       95         Volume to Capacity       0.72       0.01       0.10       0.75       0.57         Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0		None			None			
Upstream signal (m) pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol vCU, unblocked vol tC, single (s) tC, single (s) tC, 2 stage (s) tF (s) p0 end capacity (veh/h) 567 24 219  Direction, Lane # EB 1 EB 2 WB 1 WB 2 NB 1 Volume Total 1228 14 59 1270 54 Volume Left 0 0 14 0 0 46 cSH 1700 1700 567 1700 95 Volume to Capacity (0, 2, 2, 3, 3, 3, 3, 3, 4, 4, 4, 5, 4, 4, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	• •							
VC, conflicting volume       1242       2616       1228         vC1, stage 1 conf vol       VC2, stage 2 conf vol       VCu, unblocked vol       1242       2616       1228         tC, single (s)       4.1       6.4       6.2       6.2         tC, 2 stage (s)       tF (s)       3.5       3.3         p0 queue free %       90       63       79         cM capacity (veh/h)       567       24       219         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       1228       14       59       1270       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       567       1700       95         Volume to Capacity       0.72       0.01       0.10       0.75       0.57         Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0       84.7         Lane LOS       B       F								
VC1, stage 1 conf vol VC2, stage 2 conf vol VCu, unblocked vol VCu, ublocked vol VCu, vol VCu, ublocked vol VCu, vol VCu, ublocked vol VCu, vol	pX, platoon unblocked							
vC2, stage 2 conf vol         vCu, unblocked vol       1242       2616       1228         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       567       3.5       3.3         p0 queue free %       90       63       79         cM capacity (veh/h)       567       24       219         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       1228       14       59       1270       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       567       1700       95         Volume to Capacity       0.72       0.01       0.10       0.75       0.57         Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0       84.7         Lane LOS       B       F				1242		2616	1228	
vCu, unblocked vol       1242       2616       1228         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       567       22       3.5       3.3         p0 queue free %       90       63       79         cM capacity (veh/h)       567       24       219         Direction, Lane #       EB 1       EB 2       WB 1       WB 2       NB 1         Volume Total       1228       14       59       1270       54         Volume Left       0       0       59       0       9         Volume Right       0       14       0       0       46         cSH       1700       1700       567       1700       95         Volume to Capacity       0.72       0.01       0.10       0.75       0.57         Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0       84.7         Lane LOS       B       F								
tC, single (s)	<u> </u>			4040		0010	4000	
tC, 2 stage (s) tF (s)								
tF (s)				4.1		0.4	6.2	
p0 queue free % cM capacity (veh/h)         90 567         63 79           Direction, Lane #         EB 1 EB 2 WB 1 WB 2 NB 1           Volume Total         1228 14 59 1270 54           Volume Left         0 0 59 0 9           Volume Right         0 14 0 0 46           cSH         1700 1700 567 1700 95           Volume to Capacity         0.72 0.01 0.10 0.75 0.57           Queue Length 95th (m)         0.0 0.0 2.6 0.0 20.1           Control Delay (s)         0.0 0.0 12.1 0.0 84.7           Lane LOS         B         F				22		3.5	3 3	
CM capacity (veh/h)         567         24         219           Direction, Lane #         EB 1         EB 2         WB 1         WB 2         NB 1           Volume Total         1228         14         59         1270         54           Volume Left         0         0         59         0         9           Volume Right         0         14         0         0         46           cSH         1700         1700         567         1700         95           Volume to Capacity         0.72         0.01         0.10         0.75         0.57           Queue Length 95th (m)         0.0         0.0         2.6         0.0         20.1           Control Delay (s)         0.0         0.0         12.1         0.0         84.7           Lane LOS         B         F								
Direction, Lane #         EB 1         EB 2         WB 1         WB 2         NB 1           Volume Total         1228         14         59         1270         54           Volume Left         0         0         59         0         9           Volume Right         0         14         0         0         46           cSH         1700         1700         567         1700         95           Volume to Capacity         0.72         0.01         0.10         0.75         0.57           Queue Length 95th (m)         0.0         0.0         2.6         0.0         20.1           Control Delay (s)         0.0         0.0         12.1         0.0         84.7           Lane LOS         B         F	• •							
Volume Total         1228         14         59         1270         54           Volume Left         0         0         59         0         9           Volume Right         0         14         0         0         46           cSH         1700         1700         567         1700         95           Volume to Capacity         0.72         0.01         0.10         0.75         0.57           Queue Length 95th (m)         0.0         0.0         2.6         0.0         20.1           Control Delay (s)         0.0         0.0         12.1         0.0         84.7           Lane LOS         B         F		- FB 1 1	FB 2		1 WR 2			garagina kan bahasan panah beraran ayang ang kanapas sa
Volume Left         0         0         59         0         9           Volume Right         0         14         0         0         46           cSH         1700         1700         567         1700         95           Volume to Capacity         0.72         0.01         0.10         0.75         0.57           Queue Length 95th (m)         0.0         0.0         2.6         0.0         20.1           Control Delay (s)         0.0         0.0         12.1         0.0         84.7           Lane LOS         B         F		<del>~~~~~~</del>	<del> </del>					
cSH     1700     1700     567     1700     95       Volume to Capacity     0.72     0.01     0.10     0.75     0.57       Queue Length 95th (m)     0.0     0.0     2.6     0.0     20.1       Control Delay (s)     0.0     0.0     12.1     0.0     84.7       Lane LOS     B     F								
Volume to Capacity       0.72       0.01       0.10       0.75       0.57         Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0       84.7         Lane LOS       B       F	Volume Right	0	14	0	0	46		
Queue Length 95th (m)       0.0       0.0       2.6       0.0       20.1         Control Delay (s)       0.0       0.0       12.1       0.0       84.7         Lane LOS       B       F						95		
Control Delay (s) 0.0 0.0 12.1 0.0 84.7  Lane LOS B F								
Lane LOS B F								
	• • •	0.0	0.0		0.0			
Approach Delay (s) 0.0 0.5 84.7		0.0						
Approach LOS F		0.0		0.5				
			tera are laj	. 4	and Sec.			
Intersection Summary (1996) and the second s		signment.	raya Nikal	0.0	, kanganang tin	gydrenier.		
Average Delay 2.0 Intersection Capacity Utilization 70.2% ICU Level of Service C		n			17	الميط	of Consider	C
Intersection Capacity Utilization 70.2% ICU Level of Service C Analysis Period (min) 15		П			IC	o revel	of aet vice	;

	W	A.	Ť	Jan .	e die	4	
Movement	WBL	WBR	NBT	NBR 1	SBL	SBT	$(x,y) \mapsto \mathbb{I}_{\frac{1}{2}(x,y)}(x) \cdot (x,y) \cdot \mathbb{I}_{\frac{1}{2}(x,y)}(x,y) \cdot \mathbb{I}_{\frac{1}{2}(x,y)}(x,y) \cdot \mathbb{I}_{\frac{1}{2}(x,y)}(x,y) \cdot \mathbb{I}_{\frac{1}{2}(x,y)}(x,y)$
Lane Configurations	'NA'		Þ			4	
Volume (veh/h)	16	5	157	8	2	254	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	18	6	174	9	2	282	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage Right turn flare (veh)							
Median type			None			None	
Median storage veh)			IVONG			NOUG	
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	466	179			183		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	466	179			183		
tC, single (s)	6.4	6.2			41		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			100		
cM capacity (veh/h)	558	869			1404		
Direction, Lane #	~~~~	NB 1	SB 1	Resident			
Volume Total	23	183	284				
Volume Left	18	0	2				
Volume Right	6	9	0				
cSH Values to Consolity	610	1700	1404				
Volume to Capacity	0.04 0.9	0.11 0.0	0.00 0.0				
Queue Length 95th (m) Control Delay (s)	11.1	0.0	0.0				
Lane LOS	В	0.0	Ο.1				
Approach Delay (s)	11.1	0.0	0.1				
Approach LOS	В	0.0	0.1				
Intersection Summary	y Pak	Para			Walle.	Ng Ng Na	german apparen har en apparen anderes et apparen
Average Delay			0.6				
Intersection Capacity Utilization	1		25.0%	IC	U Level c	of Service	A A
Analysis Period (min)			15				

		A.	1	/ <sup>the</sup>	1/4	ļ	
Movement (1997)	WBL	WBR	NBT	NBR	SBL	SBT	sur structure sur sur sensor de la companya de la c
Lane Configurations	Ma		\$			ৰ	
Volume (veh/h)	13	3	236	18	4	262	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	14	3	262	20	4	291	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage Right turn flare (veh)							
Median type			Mana			Mana	
Median storage veh)			None			None	
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	572	272			282		
vC1, stage 1 conf vol					LVL		
vC2, stage 2 conf vol							
vCu, unblocked vol	572	272			282		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	100			100		
cM capacity (veh/h)	483	771			1292		
Direction, Lane #	WB 1	NB 1	SB 1			Ending.	
Volume Total	18	282	296				
Volume Left	14	0	4				
Volume Right	3	20	0				
cSH	520	1700	1292				
Volume to Capacity	0.03	0.17	0.00				
Queue Length 95th (m)	0.8	0.0	0.1				
Control Delay (s) Lane LOS	12.2	0.0	0.1				
Approach Delay (s)	B	0.0	A				
Approach LOS	12.2 B	0.0	0.1				
Intersection Summary		NG Pile	SISSES IN	18.514			en kan dan dan kangan salahan kangan kangan sa
Average Delay			0.4				
Intersection Capacity Utilization	on		27.0%	ICI	U Level of	Service	Α
Analysis Period (min)			15				

## APPENDIX D

Auxiliary Lane Analysis



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

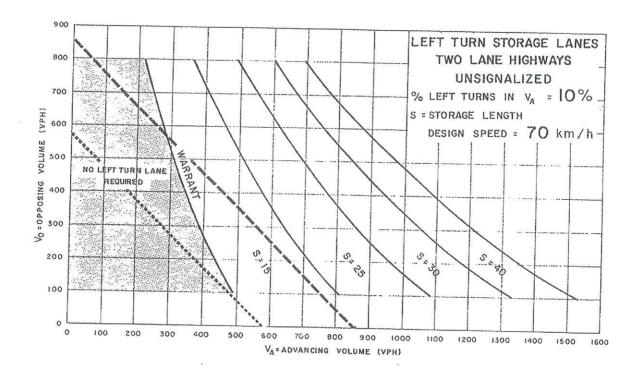
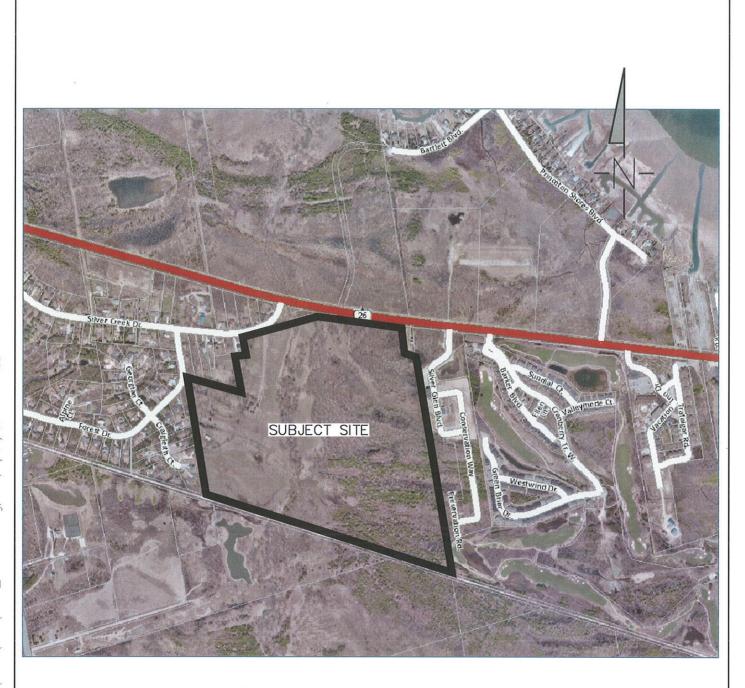


Figure EA-10

## **FIGURES**

Figure I:	Site Location Plan
Figure 2:	Draft Plan
Figure 3:	2008 Existing Traffic Volumes
Figure 4:	2021 Corridor Growth Traffic Volumes
Figure 5:	2026 Corridor Growth Traffic Volumes
Figure 6:	2031 Corridor Growth Traffic Volumes
Figure 7:	Other Background Developments Traffic Volumes
Figure 8:	2021 Future Background Traffic Volumes
Figure 9:	2026 Future Background Traffic Volumes
Figure 10:	2031 Future Background Traffic Volumes
Figure 11:	West Lands Residential Trip Distribution
Figure 12:	East Lands Residential Trip Distribution
Figure 13:	East Lands Primary Commercial Trip Distribution
Figure 14:	West Lands Residential Trip Assignment
Figure 15:	East Lands Residential Trip Assignment
Figure 16:	East Lands Primary Commercial Trip Assignment
Figure 17:	2021 Total Future Traffic Volumes
Figure 18:	2026 Total Future Traffic Volumes
Figure 19:	2031 Total Future Traffic Volumes



HUNTINGWOOD DEVELOPMENT TOWN OF COLLINGWOOD

Drawin

SITE LOCATION



110 PINE STREET, COLLINGWOOD, ON L9Y 2N9 705 446-3510 T 705 446-3520 F WWW.CFCROZIER.CA INFO®CFCROZIER.CA

Case N.T.S. Date 01/20/2011 Check By J.P./C.F.C. Drawing Fig. 1





## **CONCEPT PLAN**

LAND USE	UNITS	AREA
RESIDENTIAL SINGLE DETACHED LOTS	1 to 99	7.36 ha
BLOCK 1 - RESIDENTIAL SEMI'S (12 SEMI-DETACHED UNITS)	12	0.84 ha
BLOCK 2 - RESIDENTIAL TOWNHOUSES (18 TOWNHOUSE UNITS)	18	0.74 ha
BLOCK 3 - RESIDENTIAL TOWNHOUSES (12 TOWNHOUSE UNITS)	12	0.43 ha
BLOCK 4 - STORMWATER MANAGMENT (DEDICATED TO MUNICIPALITY)		1.20 ha
BLOCK 5 - RESIDENTIAL HIGH DENSITY (5 - 36 UNIT WALK UP APARTMENT BUILDINGS	144	2.05 ha
BLOCK 6 - STORMWATER MANAGMENT (TO BE DEDICATED TO MUNICIPALITY)		1.15 ha
BLOCK 7 - LOCAL COMMERCIAL		0.55 ha
BLOCK 8 - RESIDENTIAL TOWNHOUSES (75 TOWNHOUSE UNITS)	75	1.69 ha
BLOCK 9 - RESIDENTIAL TOWNHOUSES (33 TOWNHOUSE UNITS)	32	0.82 ha
BLOCK 10 - RESIDENTIAL TOWNHOUSES (12 TOWNHOUSE UNITS)	12	0.32 ha
BLOCK 11 - RESIDENTIAL SINGLE DETACHED (32 FREEHOLD SINGLE DETACHED LOTS)	32	2.67 ha
BLOCK 12 - SENIORS COMPLEX		0.40 ha
BLOCK 13 - COMMUNITY CENTER + OPEN SPA ENVIRONMENTAL PROTECTION (DEDICATED TO		7.61 ha
BLOCK 14 - OPEN SPACE + ENVIRONMENTAL PROTECTION (DEDICATED TO TOWN)		2.11 ha
BLOCK 15 - OPEN SPACE + ENVIRONMENTAL PROTECTION (DEDICATED TO TOWN)		14.33 ha
BLOCK 16+17 - WALKWAY (DEDICATED TO TOWN)		0.07 ha
ROADS		4.63 ha
TOTAL	436	48.97 ha



PROTECTED WETLANDS



30 METER SETBACK FROM SILVER CREEK



PUBLIC TRAIL

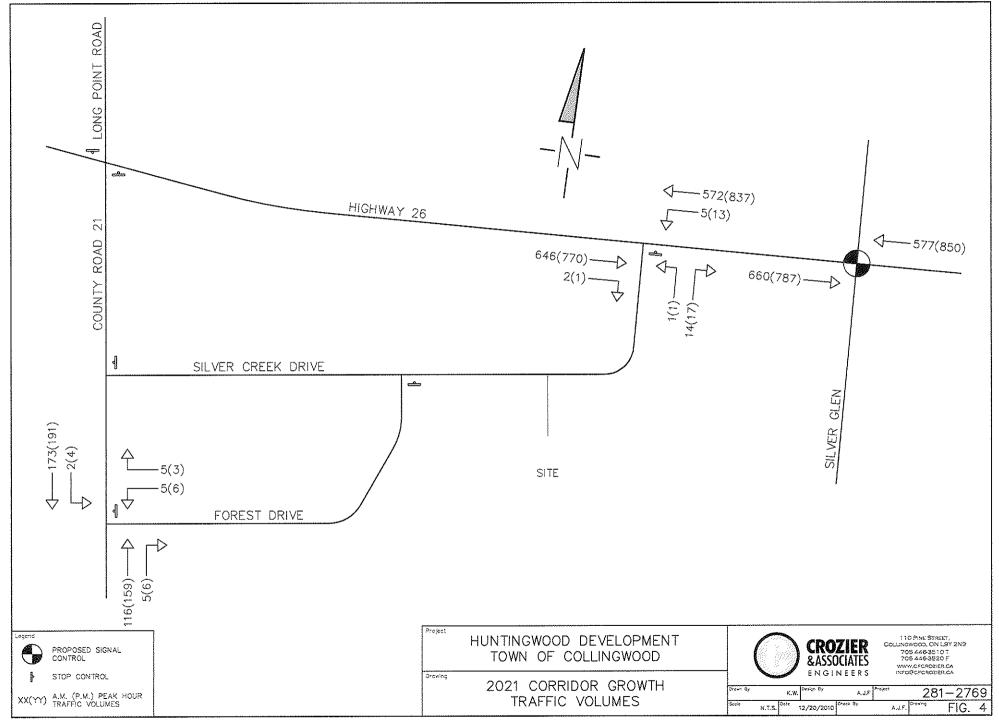
FIGURE 2

**SCALE 1:2000** 

METRIC
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY
DIVIDING BY 0.3048
PROJECT: 704-10 DRAWN: AP DATE: JAN 19/2010

DWG: 704-10-Concept Plan





TRAFFIC VOLUMES

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

K.W. Design By

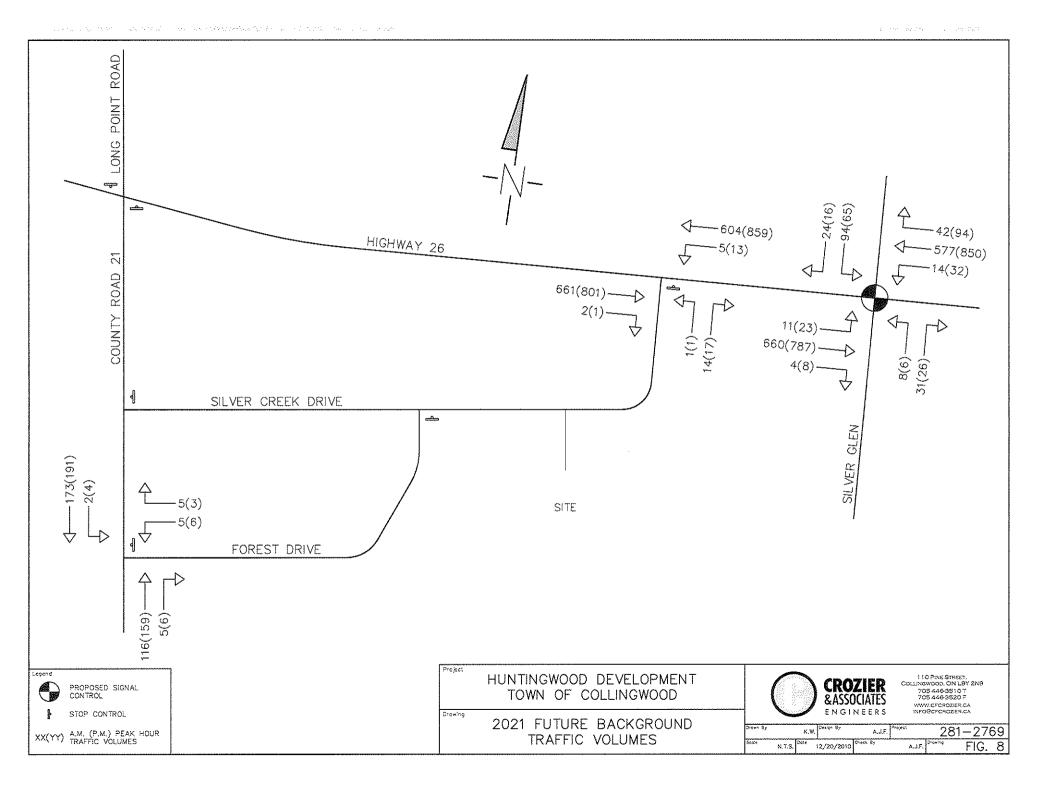
12/20/2010

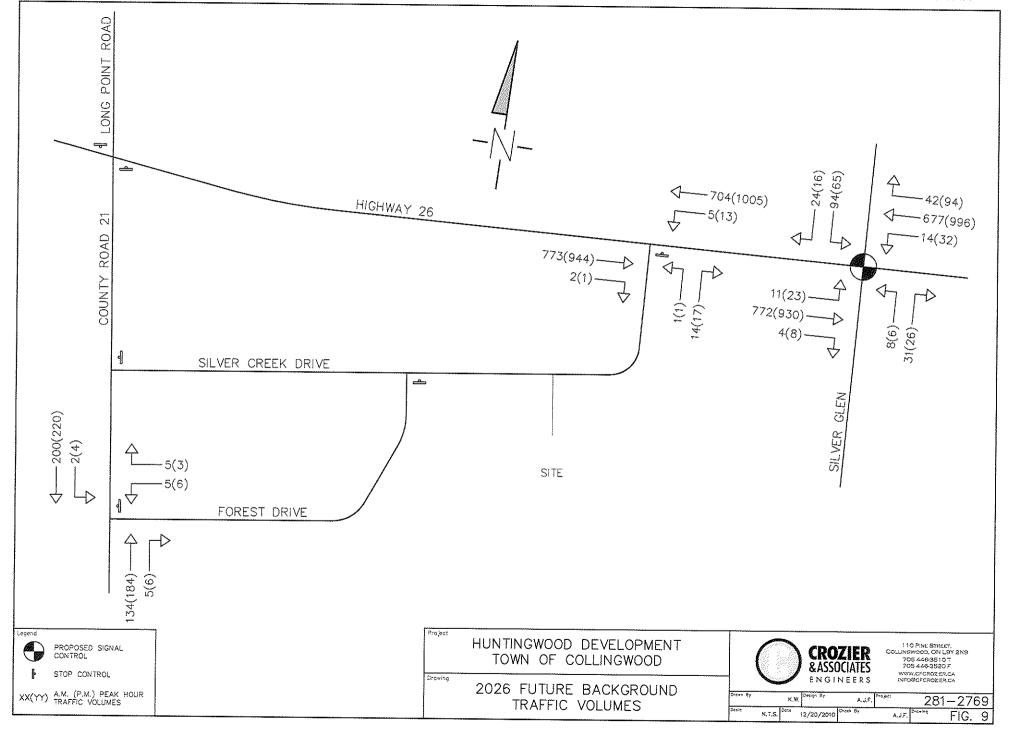
N.T.S.

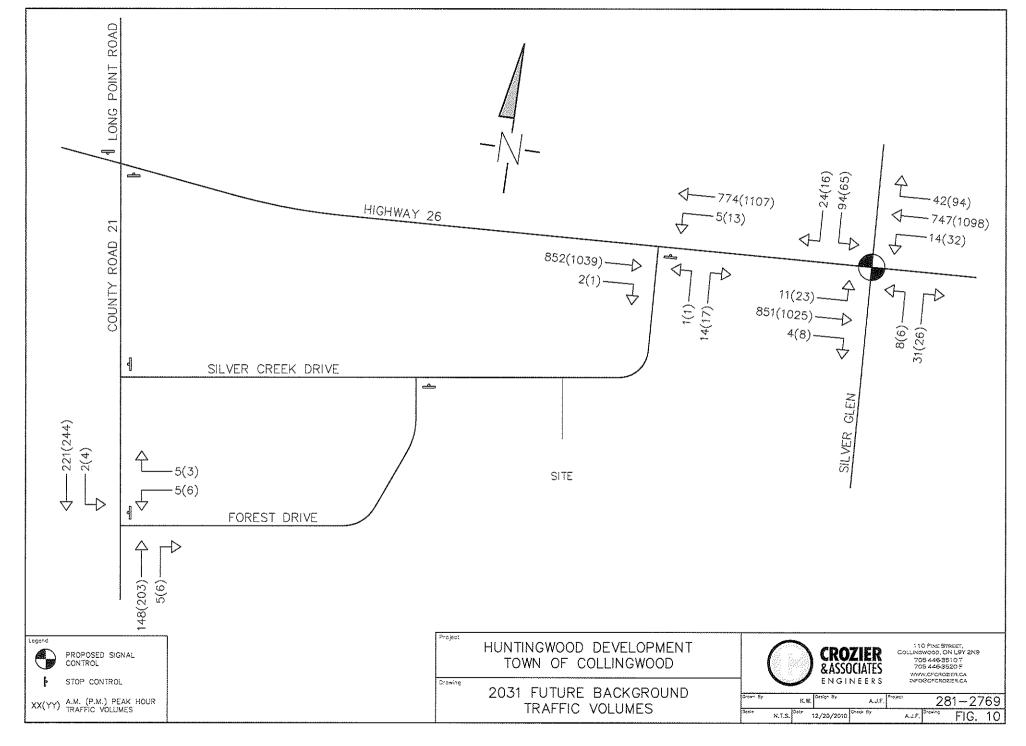
AJJ

281 - 2769

FIG. 6





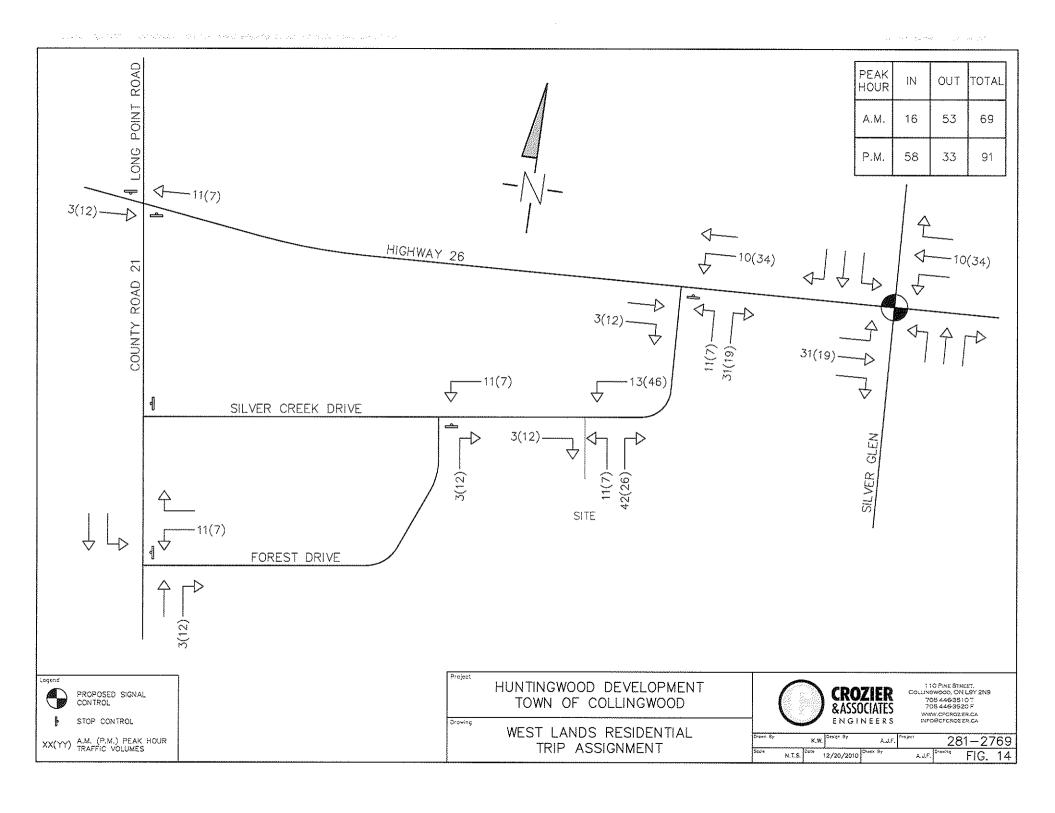


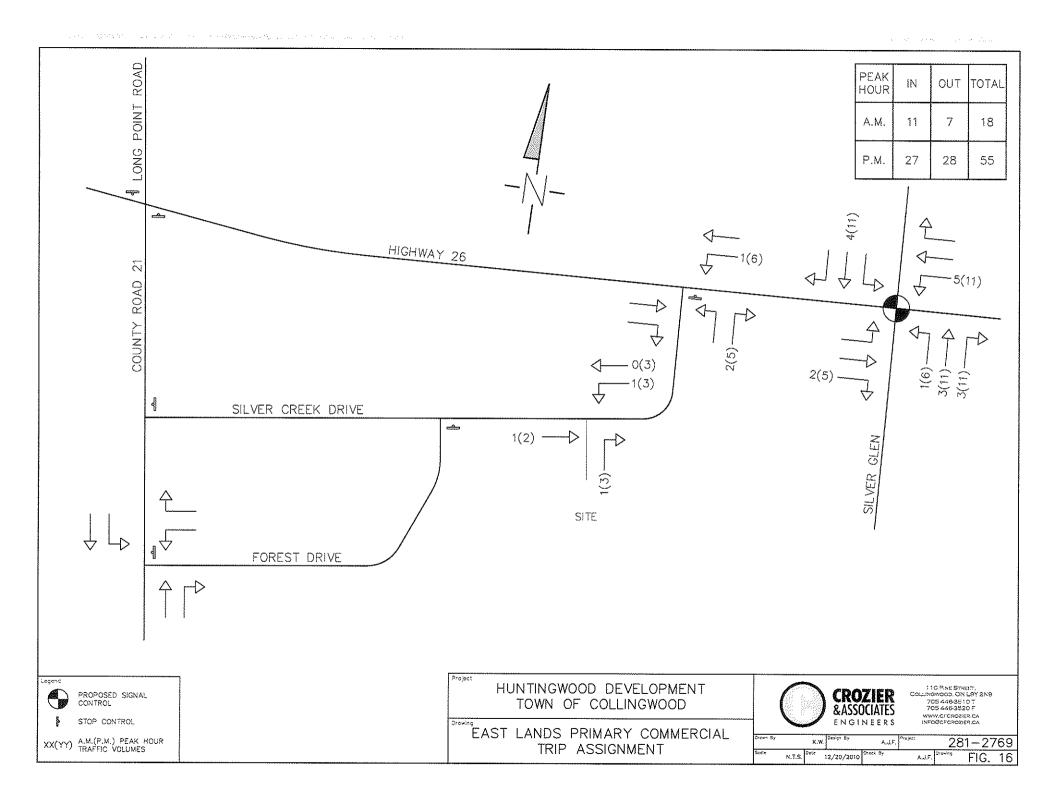
STOP CONTROL XX(YY) INBOUND (OUTBOUND)
TRIP DISTRIBUTION

EAST LANDS PRIMARY COMMERCIAL TRIP DISTRIBUTION



281-2769 A,J,F, FIG. 13 12/20/2010





TRAFFIC VOLUMES

A.J.F

12/20/2010

FIG. 17

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

