



## **New Minas Transportation Study Phase 2 Scenarios and Recommendations**

Prepared for:

The Municipality of the County of Kings

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Date: January 11, 2022

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## 1 Introduction

### 1.1 Study Context

The Growth Centre of New Minas is strategically located along Highway 1 between the population centres of Wolfville and Kentville. The Growth Centre is located within the Municipality of the County of Kings (“Municipality”) and the Village of New Minas (“Village”). Over the years, the Growth Centre of New Minas has experienced significant commercial, residential and industrial growth. Continued growth and substantial investment in community infrastructure has made New Minas an attractive place to live and work within the Municipality.

As a major population and service centre, New Minas is an important regional destination leading to the construction of the Granite Drive interchange on Highway 101. The opening of the Granite Drive interchange in 2018 has shifted travel patterns and enabled the opportunity for the potential development of a large area of undeveloped lands south of Highway 101.

The Municipal Planning Strategy adopted by the Municipality of the County of Kings provides a shared vision and approach to development within the Municipality. Recognizing that the Municipality encompasses a wide range of urban and rural communities, the Municipal Planning Strategy provides policy direction for the development of secondary planning strategies for communities where community-specific policy direction is required to address the unique aspects and context of the community.

The Municipality has partnered with the Village to engage UPLAND Planning and Design (“UPLAND”) to develop a Secondary Planning Strategy for the Growth Centre of New Minas. The Secondary Planning Strategy, amongst other things, will set the vision and policy direction for development in the lands south of Highway 101. Growth in the area south of Highway 101 will have an impact on the New Minas transportation network as well as the regional network, a thorough understanding of land use planning considerations will be important to ensure the transportation network is developed to meet future capacity needs.

Recognizing the two-way relationship between land use planning and transportation, the Municipality has initiated this technical transportation study to ensure that the Secondary Planning Strategy considers transportation infrastructure planning alongside land use planning. The objective of transportation study is to evaluate the impacts of potential development scenarios on the transportation network and inform the preferred development scenario for the Secondary Planning Strategy.

### 1.2 Study Objectives

The transportation study will be developed through two phases:

- Phase 1 Existing Conditions: The first phase is expected to build the understanding of existing conditions necessary to develop models and recommendations for the future.
- Phase 2 Scenarios and Recommendations: The second phase will evaluate the potential development scenarios for New Minas developed by UPLAND for their effect on the transportation network.



This report summarizes the outcomes of Phase 2. Phase 2 includes the following scope of work:

- Forecast traffic volumes for three development scenarios
- Develop preliminary conceptual transportation networks for three development scenarios
- Assess the three development scenarios and identify a preferred development scenario
- Develop the final conceptual transportation network for the preferred development scenario
- Identify priorities and phasing for the transportation network on the expansion lands
- Identify priority projects for improvements to the existing transportation network
- Provide policy recommendations for access control
- Provide policy recommendations for transportation demand management

## 2 Future Traffic Volume Forecasts

To develop future traffic forecasts in the study area, consideration was given to background traffic growth and the future development in the expansion lands.

### 2.1 Background Traffic Growth

The timeframe for the full-build of the development will depend on market demand, given the size of the expansion lands it is difficult to estimate a timeframe for full-build out. The Market Demand Study estimated 321 residential dwellings in the next 10 years, which would indicate 50 to 100 years for full build-out, depending on the density of the scenario.

With fluctuations in market demand and traffic growth over time, from a traffic modelling perspective, it is not reasonable to assume a fixed annual background traffic growth rate and apply it to such a long timeframe. Therefore, instead of using a defined timeframe, the existing traffic volumes were factored by 25.0% to reflect future background traffic growth. This would approximate to approximately 25 years at a 1.0% percent annual growth rate or 50 years at a 0.5% percent annual growth rate.

### 2.2 Expansion Lands Development

Future traffic generated by the development scenarios were estimated using a four-step: trip generation, trip distribution, modal choice and trip assignment.

#### 2.2.1 Trip Generation

The trip generation estimates for the three development scenarios were quantified using trip generation rates from the *Trip Generation Manual, 10<sup>th</sup> edition* published by the Institute of Transportation Engineers (ITE). The weekday morning (AM) and afternoon (PM) peak hour trip generation rates and directional distribution for the anticipated land uses are summarized in Table 1.





Table 1: Trip generation rates

Land Use	Unit	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Rate <sup>1</sup>	Entering	Exiting	Rate <sup>2</sup>	Entering	Exiting
210 Single-Family Detached Housing	Units	0.74	25%	75%	0.99	63%	37%
220 Multifamily Housing (Low-Rise)	Units	0.46	23%	77%	0.56	63%	37%
221 Multifamily Housing (Mid-Rise)	Units	0.36	26%	74%	0.44	61%	39%
710 General Office Building	1,000 ft <sup>2</sup>	1.16	86%	14%	1.15	16%	84%
815 Free-Standing Discount Store	1,000 ft <sup>2</sup>	1.17	69%	31%	4.83	50%	50%
820 Shopping Centre	1,000 ft <sup>2</sup>	0.94	62%	38%	3.81	48%	52%
932 High-Turnover (Sit-Down) Restaurant	1,000 ft <sup>2</sup>	9.94	55%	45%	9.77	62%	38%
934 Fast-Food Restaurant with Drive-Through	1,000 ft <sup>2</sup>	40.19	51%	49%	32.67	52%	48%
945 Gasoline Station with Convenience Market	Fueling Positions	12.47	51%	49%	13.99	51%	49%

1. Average Rate, Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 7 and 9 a.m. Rates are in 'vehicles per hour/unit.'
2. Average Rate, Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 p.m. Rates are in 'vehicles per hour/unit.'

The trip generation rates were adjusted to account for various trip types including internal capture trips, pass-by trips, diverted trips and primary trips.

At mixed-use development sites consisting of two or more land use types, there is potential for interaction between those uses, particularly where the trips can be made by walking. The interaction is known as *internal capture trips*. Since internal trips are made without using the off-site transportation system, the total generation of external trips entering and exiting the site may be less than the sum of the trip generated by each land use. Internal capture trips were estimated for Parcels 1, 12 and 13 using the methodology presented in the *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*.

External trips are trips entering and exiting the site, however, not all traffic entering and exiting the site is necessarily new traffic added to the transportation system. Commercial developments are often located adjacent to busy corridors and, as a result, these sites attract a portion of their trip from traffic passing the site.

A *pass-by trip* is made as an intermediate stop on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on adjacent roadway with direct access to the site. These intermediate trips do not add new traffic to the adjacent roadway. Pass-by trips from Granite Drive and the Granite/Highbury Collector Road were estimated for Parcels 4, 12 and 13.

Similar to a pass-by trip, a *diverted trip* is made as an intermediate stop on the way from an origin to a primary trip destination, however a diverted trip requires a route diversion. Diverted trips are attracted from traffic on roadways within the vicinity of the site but without direct access to the site. These intermediate trips add new traffic to the adjacent roadway but can remove traffic from the roadway from which it diverted. Diverted trips from the Granite/Highbury Collector Road were estimated for Parcel 1.

A primary trip is a trip made for the specific purpose of visiting the generator. If an intermediate stop is made along the way, the primary trip becomes a pass-by trip of a diverted trip as described above.



### 2.2.2 Trip Distribution

Trips generated by the development were distributed to the road network based on existing travel patterns observed in the traffic counts. The trip distributions for residential and commercial trips are summarized in Table 2 and Table 3.

Table 2: Residential trip distribution

Direction	Gateway	Distribution
North	Cornwallis River Crossing	10%
South	New Canaan Road/White Rock Road	5%
East	Highway 101	10%
	Trunk 1	15%
West	Highway 101	10%
	Trunk 1	15%
-	New Minas Centre	35%
<b>Total</b>		<b>100%</b>

Table 3: Commercial Trip Distribution

Direction	Gateway	Distribution
North	Cornwallis River Crossing	10%
South	New Canaan Road/White Rock Road	5%
East	Highway 101	15%
	Trunk 1	15%
West	Highway 101	20%
	Trunk 1	15%
-	New Minas Centre	20%
<b>Total</b>		<b>100%</b>

### 2.2.3 Modal Choice

The internal capture trips account for trips within the mixed-use development areas where trips can be made by walking. To remain conservative no further adjustments were made to the vehicle trip estimates to reflect trips made using non-auto transportation modes such as transit and active transportation.

### 2.2.4 Trip Assignment

Trips were assigned to the road network based on the conceptual transportation network developed for each of the three development scenarios.

## 3 Development Scenarios

Three potential development scenarios were developed by UPLAND for the expansion lands south of Highway 101 as part of the New Minas Secondary Planning Strategy. For each development scenario, future peak hour traffic volume forecasts and conceptual transportation networks were developed.





### 3.1 Scenario 1

#### 3.1.1 Land Use

Scenario 1 includes approximately 1651 residential units, 5,000 square feet of office, 155,000 square feet of commercial retail, 16,000 square feet of restaurant and 10,000 square feet of services.

#### 3.1.2 Trip Generation

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for Scenario 1 are summarized in Table 4. On a typical weekday, the development scenario is expected to generate approximately 2,058 vehicle trips in the morning peak hour (760 trips entering, 1,298 trips exiting) and 2,626 vehicle trips in the afternoon peak hour (1,532 trips entering, 1,094 trips exiting).

Table 4: Scenario 1 trip generation estimates

ID	Land Use	Unit <sup>1</sup>	Weekday AM Peak Hour <sup>2</sup>			Weekday PM Peak Hour <sup>2</sup>		
			Total	Entering	Exiting	Total	Entering	Exiting
1	820 Shopping Centre	20	19	12	7	76	36	40
	934 Fast-Food Restaurant with DT	3	121	61	60	98	51	47
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture (NCHRP)		-36	-18	-18	-68	-34	-34
2	210 Single-Family Detached Housing	106	78	19	59	105	66	39
3	210 Single-Family Detached Housing	31	23	6	17	31	19	12
4	820 Shopping Centre	10	9	5	4	38	18	20
5	210 Single-Family Detached Housing	196	145	36	109	194	122	72
6	210 Single-Family Detached Housing	143	106	26	80	142	89	53
7	210 Single-Family Detached Housing	223	165	41	124	221	139	82
8	210 Single-Family Detached Housing	386	286	71	215	382	241	141
9	210 Single-Family Detached Housing	204	151	38	113	202	127	75
10	210 Single-Family Detached Housing	191	141	35	106	189	119	70
11	210 Single-Family Detached Housing	36	27	7	20	36	22	14
12	210 Single-Family Detached Housing	135	100	25	75	134	84	50
13	710 General Office Building	5	6	5	1	6	1	5
	815 Free-Standing Discount Store	100	117	81	36	483	241	242
	820 Shopping Centre	25	24	15	9	95	45	50
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	934 Fast-Food Restaurant with DT	8	322	164	158	261	136	125
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture (NCHRP)		-96	-48	-48	-384	-192	-192
<b>Total External Trips</b>			<b>2058</b>	<b>760</b>	<b>1298</b>	<b>2626</b>	<b>1532</b>	<b>1094</b>
Commercial Pass-by/Diverted Trips (40%)			336	168	168	398	199	199
Primary Trips			1722	592	1130	2228	1333	895

1. Units are 'units' for residential land uses, '1,000 square feet' for commercial land uses and 'vehicle fueling positions' for gasoline stations.  
2. Trip generation estimates are in 'vehicles per hour.'

#### 3.1.3 Future Traffic Volumes

Table 5 summarizes the projected peak hour traffic volumes on Granite Drive, the New Minas Connector Road, New Canaan Road and the Granite/Highbury Collector Road with future background growth and full build out of Scenario 1.



Table 5: Scenario 1 estimated peak hour traffic volumes on major roadways

Weekday Peak Hour Traffic Volumes (vph) Roadway	AM Peak Hour			PM Peak Hour		
	Total	NB	SB	Total	NB	SB
Granite Drive - North of Highway 101 Interchange	1,055	655	400	1,520	625	895
Granite Drive - South of Highway 101 Interchange	935	585	350	1,195	490	705
New Minas Connector Road - North of Highway 101 Interchange	1,635	1,080	555	2,250	975	1,275
New Canaan Road - South of Highway 101 Interchange	1,030	730	300	1,335	520	815
Roadway	Total	EB	WB	Total	EB	WB
Granite/Highbury Collector Road - near Granite Drive	580	430	150	765	290	475
Granite/Highbury Collector Road - near New Canaan Road	730	195	535	960	595	365

### 3.1.4 Conceptual Transportation Network

A preliminary conceptual transportation network was developed for Scenario 1 (Figure 1). Key components of the transportation network include:

- **Granite/Highbury Collector Road:** The Granite/Highbury Collector Road includes a two-lane cross section with single lane roundabouts to provide access to the development parcels along the corridor.
- **Granite Drive Extension:** The Granite Drive Extension includes a four-lane cross section from the Highway 101 and Granite Drive interchange to the first development access to Parcel 13 (Commercial).
- **Highway 101 and Granite Drive Interchange:** The roundabouts at the Highway 101 and Granite Drive Interchange will need to be upgraded to multi-lane roundabouts, no changes will be required to the bridge structure.
- **Highway 101 and New Minas Connector Road Interchange:** There are existing operational issues at the interchange and the adjacent intersection of the New Minas Connector Road and Prospect Road. Upgrades are required at the interchange and at the New Minas Connector Road and Prospect Road intersection to accommodate current and future traffic volumes.

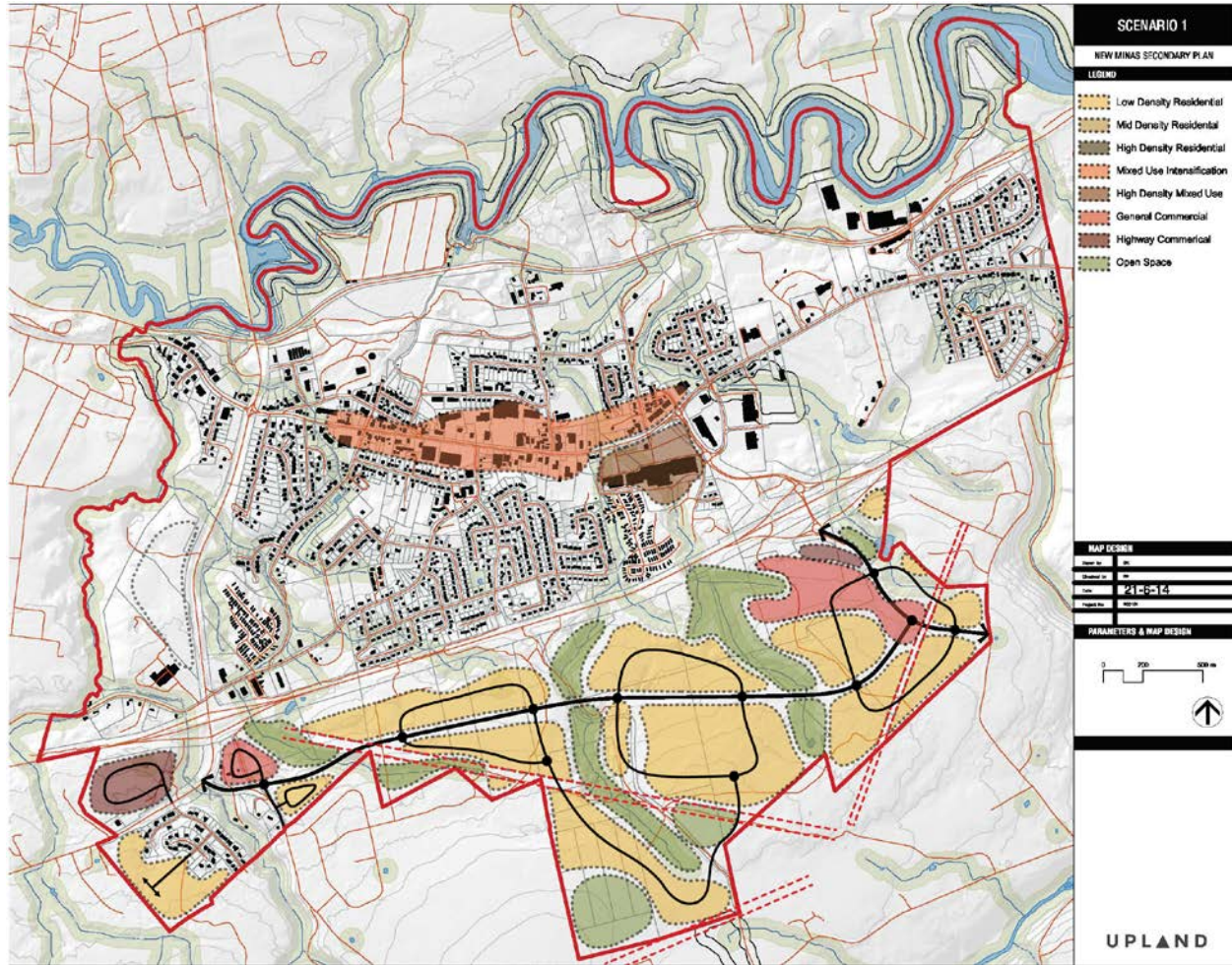


Figure 1: Conceptual transportation network for Scenario 1

### 3.2 Scenario 2

#### 3.2.1 Land Use

Scenario 2 includes approximately 2,735 residential units (including 1,289 single-family housing units, 907 low-rise multifamily housing units and 539 mid-rise multifamily housing units), 5,000 square feet of office, 155,000 square feet of commercial retail, 16,000 square feet of restaurant and 10,000 square feet of services.

#### 3.2.2 Trip Generation

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for Scenario 2 are summarized in Table 6. On a typical weekday, the development scenario is expected to generate approximately 2,345 vehicle trips in the morning peak hour (811 trips entering, 1,534 trips exiting) and 3,012 vehicle trips in the afternoon peak hour (1,772 trips entering, 1,240 trips exiting).



Table 6: Scenario 2 trip generation estimates

ID	Land Use	Unit <sup>1</sup>	Weekday AM Peak Hour <sup>2</sup>			Weekday PM Peak Hour <sup>2</sup>		
			Total	Entering	Exiting	Total	Entering	Exiting
1	820 Shopping Centre	20	19	12	7	76	36	40
	934 Fast-Food Restaurant with DT	3	121	61	60	98	51	47
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture (NCHRP)		-36	-18	-18	-68	-34	-34
2	210 Single-Family Detached Housing	106	78	19	59	105	66	39
3	210 Single-Family Detached Housing	31	23	6	17	31	19	12
4	820 Shopping Centre	10	9	5	4	38	18	20
5	210 Single-Family Detached Housing	196	145	36	109	194	122	72
6	210 Single-Family Detached Housing	143	106	26	80	142	89	53
7	210 Single-Family Detached Housing	223	165	41	124	221	139	82
8	210 Single-Family Detached Housing	386	286	71	215	382	241	141
9	210 Single-Family Detached Housing	204	151	38	113	202	127	75
10	220 Multifamily Housing (Low-Rise)	765	352	81	271	428	270	158
11	220 Multifamily Housing (Low-Rise)	142	65	15	50	80	50	30
12	221 Multifamily Housing (Mid-Rise)	539	194	50	144	237	145	92
13	710 General Office Building	5	6	5	1	6	1	5
	815 Free-Standing Discount Store	100	117	81	36	483	241	242
	820 Shopping Centre	25	24	15	9	95	45	50
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	934 Fast-Food Restaurant with DT	8	322	164	158	261	136	125
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture (NCHRP)		-152	-76	-76	-384	-192	-192
	<b>Total External Trips</b>		<b>2345</b>	<b>811</b>	<b>1534</b>	<b>3012</b>	<b>1772</b>	<b>1240</b>
Commercial Pass-by/Diverted Trips (40%)			314	157	157	398	199	199
Primary Trips			2031	654	1377	2614	1573	1041

1. Units are 'units' for residential land uses, '1,000 square feet' for commercial land uses and 'vehicle fueling positions' for gasoline stations.  
2. Trip generation estimates are in 'vehicles per hour.'

### 3.2.3 Future Traffic Volumes

Table 7 summarizes the projected peak hour traffic volumes on Granite Drive, the New Minas Connector Road, New Canaan Road and the Granite/Highbury Collector Road with future background growth and full build out of Scenario 2.

Table 7: Scenario 2 estimated peak hour traffic volumes on major roadways

Weekday Peak Hour Traffic Volumes (vph)	AM Peak Hour			PM Peak Hour		
	Total	NB	SB	Total	NB	SB
Granite Drive - North of Highway 101 Interchange	1,190	765	425	1,690	690	1,000
Granite Drive - South of Highway 101 Interchange	1,125	740	385	1,450	585	865
New Minas Connector Rd - North of Highway 101 Interchange	1,740	1,160	580	2,370	1,020	1,350
New Canaan Road - South of Highway 101 Interchange	1,135	810	325	1,455	565	890
Roadway	Total	EB	WB	Total	EB	WB
Granite/Highbury Collector Road - near Granite Drive	725	530	195	930	355	575
Granite/Highbury Collector Road - near New Canaan Road	830	215	615	1,080	670	410





### 3.2.4 Conceptual Transportation Network

A preliminary conceptual transportation network was developed for Scenario 2 (Figure 2). Key components of the transportation network include:

- **Granite/Highbury Collector Road:** The Granite/Highbury Collector Road includes a two-lane cross section with single-lane roundabouts to provide access to the development parcels along the corridor.
- **Granite Drive Extension:** The Granite Drive Extension includes a four-lane cross section from the Highway 101 and Granite Drive interchange to the first development access to Parcel 13 (Commercial).
- **Highway 101 and Granite Drive Interchange:** The roundabouts at the Highway 101 and Granite Drive Interchange will need to be upgraded to multi-lane roundabouts, no changes will be required to the bridge structure.
- **Highway 101 and New Minas Connector Road Interchange:** There are existing operational issues at the interchange and the adjacent intersection of the New Minas Connector Road and Prospect Road. Upgrades are required at the interchange and at the New Minas Connector Road and Prospect Road intersection to accommodate current and future traffic volumes.

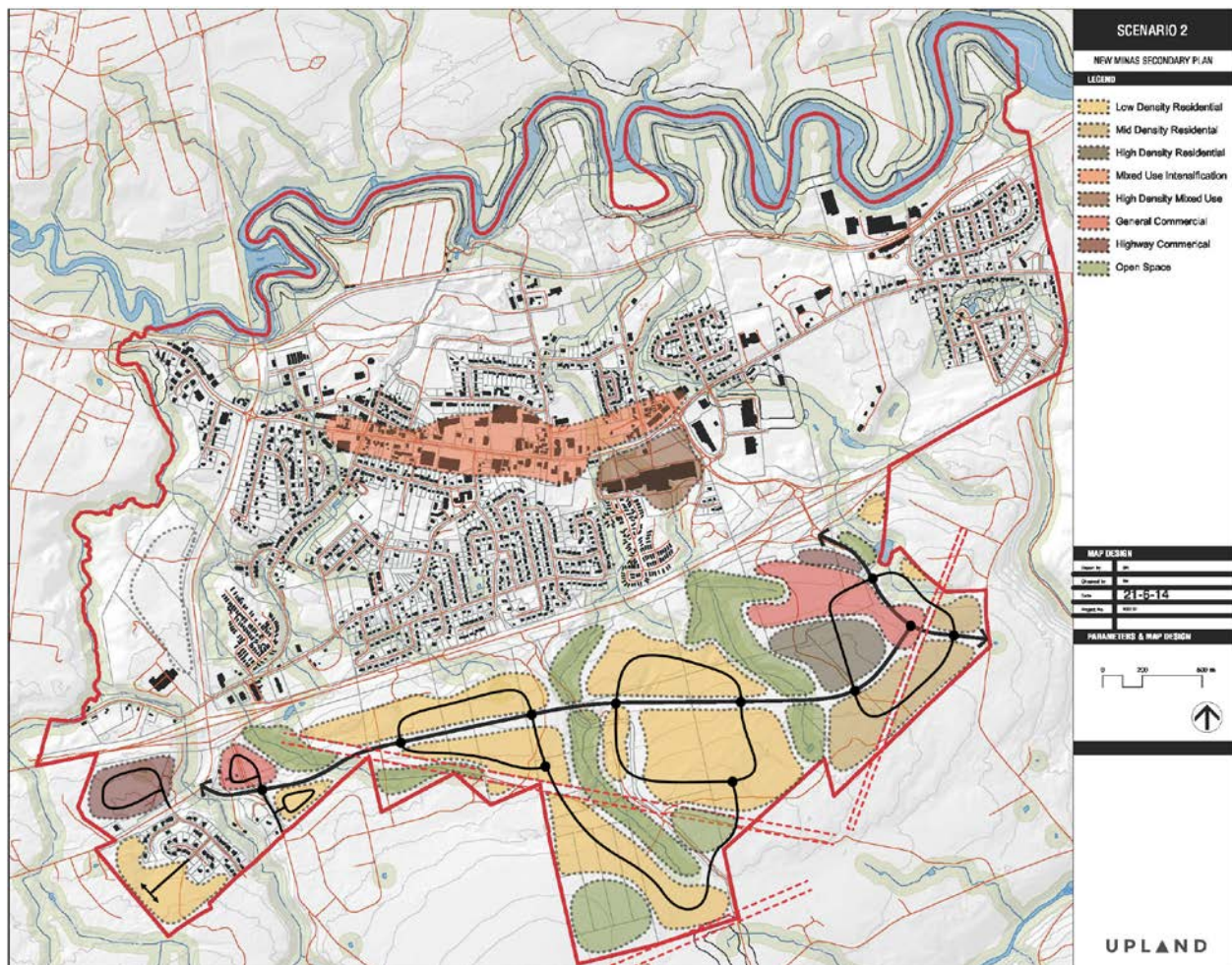


Figure 2: Conceptual transportation network for Scenario 2



### 3.3 Scenario 3

#### 3.3.1 Land Use

Scenario 3 includes approximately 3,491 residential units (including 1,155 single-family housing units, 1,338 low-rise multifamily housing units and 998 mid-rise multifamily housing units), 15,000 square feet of office, 215,000 square feet of commercial retail, 21,000 square feet of restaurant and 10,000 square feet of services.

#### 3.3.2 Trip Generation

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for Scenario 3 are summarized in Table 8. On a typical weekday, the development scenario is expected to generate approximately 2,701 vehicle trips in the morning peak hour (940 trips entering, 1,761 trips exiting) and 3,325 vehicle trips in the afternoon peak hour (1,964 trips entering, 1,361 trips exiting).

Table 8: Scenario 3 trip generation estimates

ID	Land Use	Unit <sup>1</sup>	Weekday AM Peak Hour <sup>2</sup>			Weekday PM Peak Hour <sup>2</sup>		
			Total	Entering	Exiting	Total	Entering	Exiting
1	820 Shopping Centre	20	19	12	7	76	36	40
	934 Fast-Food Restaurant with DT	3	121	61	60	98	51	47
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture		-36	-18	-18	-68	-34	-34
2	210 Single-Family Detached Housing	106	78	19	59	105	66	39
3	210 Single-Family Detached Housing	31	23	6	17	31	19	12
4	820 Shopping Centre	10	9	5	4	38	18	20
5	210 Single-Family Detached Housing	163	121	30	91	161	101	60
	220 Multifamily Housing (Low-Rise)	111	51	12	39	62	39	23
6	210 Single-Family Detached Housing	109	81	20	61	108	68	40
	220 Multifamily Housing (Low-Rise)	109	50	11	39	61	38	23
7	210 Single-Family Detached Housing	223	165	41	124	221	139	82
8	210 Single-Family Detached Housing	319	236	59	177	316	199	117
	220 Multifamily Housing (Low-Rise)	211	97	22	75	118	74	44
9	210 Single-Family Detached Housing	204	151	38	113	202	127	75
10	220 Multifamily Housing (Low-Rise)	765	352	81	271	428	270	158
11	220 Multifamily Housing (Low-Rise)	142	65	15	50	80	50	30
12	221 Multifamily Housing (Mid-Rise)	998	359	93	266	439	268	171
	710 General Office Building	10	12	10	2	12	2	10
	815 Free-Standing Discount Store	50	59	41	18	242	121	121
	820 Shopping Centre	10	9	6	3	38	18	20
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	710 General Office Building	5	6	5	1	6	1	5
13	815 Free-Standing Discount Store	100	117	81	36	483	241	242
	820 Shopping Centre	25	24	15	9	95	45	50
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	934 Fast-Food Restaurant with DT	8	322	164	158	261	136	125
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture		-190	-95	-95	-722	-361	-361
<b>Total External Trips</b>			<b>2701</b>	<b>940</b>	<b>1761</b>	<b>3325</b>	<b>1964</b>	<b>1361</b>
Commercial Pass-by/Diverted Trips			350	175	175	398	199	199
Primary Trips			2351	765	1586	2927	1765	1162

1. Units are 'units' for residential land uses, '1,000 square feet' for commercial land uses and 'vehicle fueling positions' for gasoline stations.
2. Trip generation estimates are in 'vehicles per hour.'





### 3.3.3 Future Traffic Volumes

Table 9 summarizes the projected peak hour traffic volumes on Granite Drive, the New Minas Connector Road, New Canaan Road and the Granite/Highbury Collector Road with future background growth and full build-out of Scenario 3.

Table 9: Scenario 3 estimated peak hour traffic volumes on key roadways

Weekday Peak Hour Traffic Volumes (vph)	AM Peak Hour			PM Peak Hour		
Roadway	Total	NB	SB	Total	NB	SB
Granite Drive - North of Highway 101 Interchange	1,335	855	480	1,815	735	1,080
Granite Drive - South of Highway 101 Interchange	1,325	865	460	1,625	650	975
New Minas Connector Road - North of Highway 101 Interchange	1,830	1,235	595	2,480	1,060	1,420
New Canaan Road - South of Highway 101 Interchange	1,235	890	345	1,575	610	965
Roadway	Total	EB	WB	Total	EB	WB
Granite/Highbury Collector Road - near Granite Drive	880	650	230	1,120	430	690
Granite/Highbury Collector Road - near New Canaan Road	940	240	700	1,200	750	450

### 3.3.4 Conceptual Transportation Network

A preliminary conceptual transportation network was developed for Scenario 3 (Figure 3). Key components of the transportation network include:

- **Granite/Highbury Collector Road:** The Granite/Highbury Collector Road includes a two-lane cross section with roundabouts to provide access to the development parcels along the corridor. Some roundabouts may require multi-lane entries along the corridor.
- **Granite Drive Extension:** The Granite Drive Extension includes a four-lane cross section from the Highway 101 and Granite Drive interchange to the Granite/Highbury Collector Road.
- **Highway 101 and Granite Drive Interchange:** The roundabouts at the Highway 101 and Granite Drive Interchange will need to be upgraded to multi-lane roundabouts, no changes will be required to the bridge structure.
- **Highway 101 and New Minas Connector Road Interchange:** There are existing operational issues at the interchange and the adjacent intersection of the New Minas Connector Road and Prospect Road. Upgrades are required at the interchange and at the New Minas Connector Road and Prospect Road intersection to accommodate current and future traffic volumes.

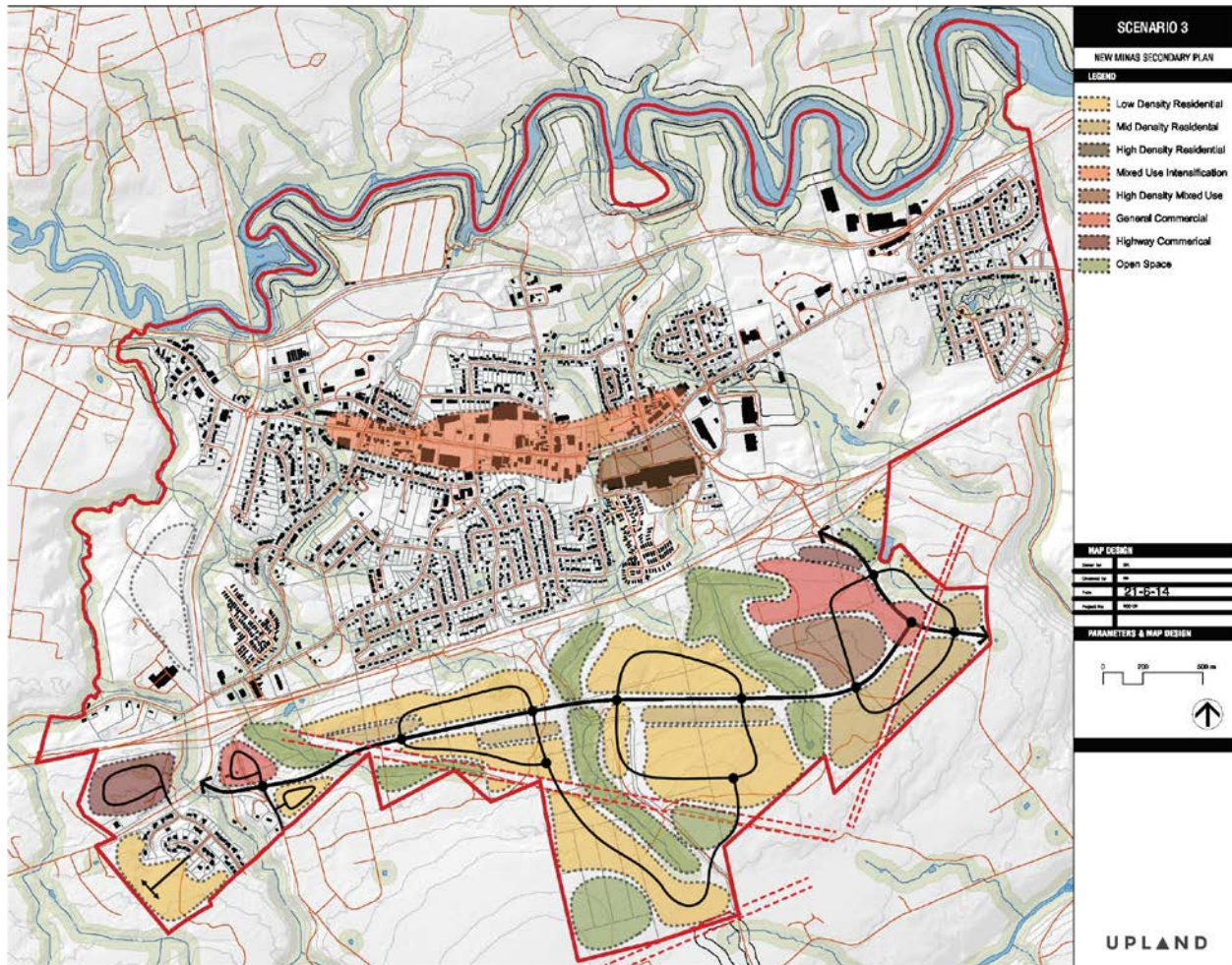


Figure 3: Conceptual transportation network for Scenario 3

### 3.4 Identification of a Preferred Development Scenario

The preliminary analysis of the three scenarios based on a review development of traffic volume forecasts and preliminary conceptual transportation networks for each scenario indicate that from a transportation perspective any of the three development scenarios could be accommodate with improvements to the Highway 101 and New Minas Connector Road Interchange and modifications to the roundabout configurations at the Granite Drive Interchange. A fourth higher density development scenario was developed by UPLAND for the preferred scenario.

## 4 Preferred Development Scenario

### 4.1 Land Use

The preferred development scenario includes approximately 4,654 residential units (including 1,487 single-family housing units, 515 low-rise multifamily housing units and 2,652 mid-rise multifamily housing units), 15,000 square feet of office, 270,000 square feet of commercial retail, 23,000 square feet of restaurant and 10,000 square feet of services.



## 4.2 Trip Generation

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for the preferred development scenario are summarized in Table 10. On a typical weekday, the development scenario is expected to generate approximately 3,375 vehicle trips in the morning peak hour (1,170 trips entering, 2,205 trips exiting) and 4,265 vehicle trips in the afternoon peak hour (2,514 trips entering, 1,751 trips exiting).

Table 10: Preferred Development Scenario trip generation estimates

ID	Land Use	Unit <sup>1</sup>	Weekday AM Peak Hour <sup>2</sup>			Weekday PM Peak Hour <sup>2</sup>		
			Total	Entering	Exiting	Total	Entering	Exiting
-	820 Shopping Centre	20	19	12	7	76	36	40
	934 Fast-Food Restaurant with DT	3	121	61	60	98	51	47
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	Internal Trip Capture (NCHRP)		-36	-18	-18	-68	-34	-34
-	210 Single-Family Detached Housing	106	78	19	59	105	66	39
1	210 Single-Family Detached Housing	57	42	10	32	56	35	21
2	210 Single-Family Detached Housing	47	35	9	26	47	29	18
3	210 Single-Family Detached Housing	216	160	40	120	214	135	79
	220 Multifamily Housing (Low-Rise)	118	54	12	42	66	42	24
4	210 Single-Family Detached Housing	259	192	48	144	256	161	95
	220 Multifamily Housing (Low-Rise)	127	58	13	45	71	45	26
5	210 Single-Family Detached Housing	627	464	116	348	621	391	230
	220 Multifamily Housing (Low-Rise)	270	124	29	95	151	95	56
6	210 Single-Family Detached Housing	281	208	52	156	278	175	103
7/	815 Free-Standing Discount Store	200	234	161	73	966	483	483
8	820 Shopping Centre	20	19	12	7	76	36	40
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	934 Fast-Food Restaurant with DT	10	402	205	197	327	170	157
	945 Gas Station with Convenience	12	150	76	74	168	86	82
	221 Multifamily Housing (Mid-Rise)	900	324	84	240	396	242	154
	710 General Office Building	5	6	5	1	6	1	5
	820 Shopping Centre	10	9	6	3	38	18	20
	932 High-Turnover Restaurant	5	50	27	23	49	30	19
	Internal Trip Capture (NCHRP)		-194	-97	-97	-776	-388	-388
9	221 Multifamily Housing (Mid-Rise)	1209	435	113	322	532	325	207
	710 General Office Building	5	6	5	1	6	1	5
	820 Shopping Centre	10	9	6	3	38	18	20
	Internal Trip Capture (NCHRP)		-2	-1	-1	-16	-8	-8
10	221 Multifamily Housing (Mid-Rise)	543	195	51	144	239	146	93
	710 General Office Building	5	6	5	1	6	1	5
	820 Shopping Centre	10	9	6	3	38	18	20
	Internal Trip Capture (NCHRP)		-2	-1	-1	-16	-8	-8
<b>Total External Trips</b>			<b>3375</b>	<b>1170</b>	<b>2205</b>	<b>4265</b>	<b>2514</b>	<b>1751</b>
Commercial Pass-by/Diverted Trips (40%)			290	145	145	362	181	181
Primary Trips			3085	1025	2060	3903	2333	1570

1. Units are 'units' for residential land uses, '1,000 square feet' for commercial land uses and 'vehicle fueling positions' for gasoline stations.  
2. Trip generation estimates are in 'vehicles per hour.'



### 4.3 Future Traffic Volumes

Table 11 summarizes the projected peak hour traffic volumes on Granite Drive, the New Minas Connector Road, New Canaan Road and the Granite/Highbury Collector Road with future background growth and full build out of the preferred development scenario.

Table 11: Preferred Development Scenario estimated peak hour traffic volumes on major roadways

Weekday Peak Hour Traffic Volumes (vph)	AM Peak Hour			PM Peak Hour		
Roadway	Total	NB	SB	Total	NB	SB
Granite Drive - North of Highway 101 Interchange	1,490	975	515	2,055	820	1,235
Granite Drive - South of Highway 101 Interchange	1,700	1,100	600	2,170	885	1,285
New Minas Connector Road - North of Highway 101 Interchange	2,120	1,415	705	2,845	1,220	1,625
New Canaan Road - South of Highway 101 Interchange	1,450	1,045	405	1,840	710	1,130
Roadway	Total	EB	WB	Total	EB	WB
Granite/Highbury Collector Road - near Granite Drive	1,035	750	285	1,330	530	800
Granite/Highbury Collector Road - near New Canaan Road	1,150	295	855	1,475	920	555

### 4.4 Conceptual Transportation Network

A preliminary conceptual transportation network was developed for the preferred development scenario (Figure 4). Key components of the transportation network include:

- Granite/Highbury Collector Road:** The Granite/Highbury Collector Road includes a two-lane cross section with roundabouts to provide access to the development parcels along the corridor. Some roundabouts may require multi-lane entries along the corridor.
- Granite Drive Extension:** The Granite Drive Extension includes a four-lane cross section from the Highway 101 and Granite Drive interchange to the Granite/Highbury Collector Road.
- Highway 101 and Granite Drive Interchange:** The roundabouts at the Highway 101 and Granite Drive Interchange will need to be upgraded to multi-lane roundabouts, no changes will be required to the bridge structure.
- Highway 101 and New Minas Connector Road Interchange:** There are existing operational issues at the interchange and the adjacent intersection of the New Minas Connector Road and Prospect Road. Upgrades are required at the interchange and at the New Minas Connector Road and Prospect Road intersection to accommodate current and future traffic volumes.



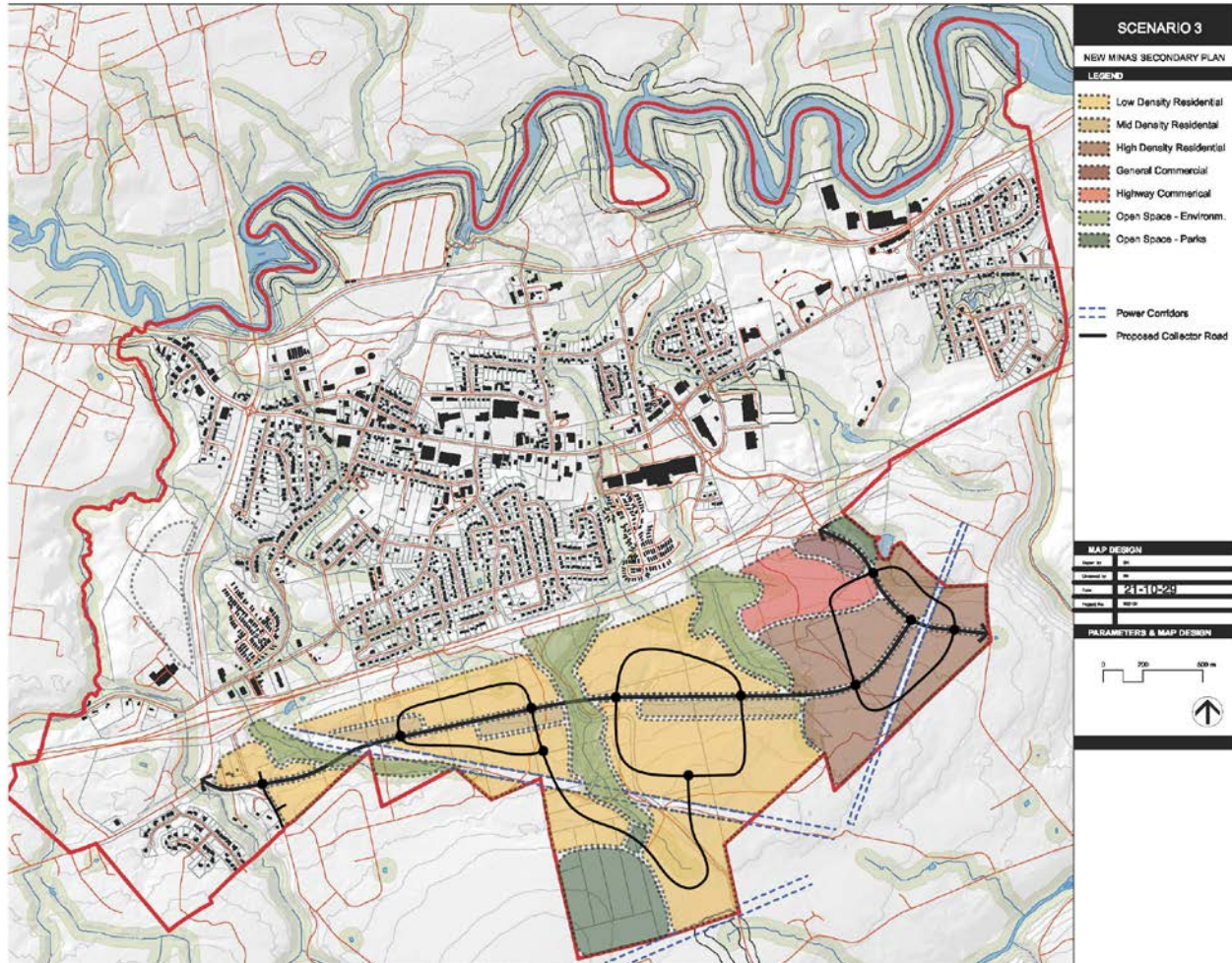


Figure 4: Conceptual transportation network for the preferred development scenario

## 5 Traffic Operations

### 5.1 Measures of Performance

The performance of an intersection can be evaluated using a number of measures of effectiveness (MOEs), including level of service (LOS), delay, volume-to-capacity ratio (v/c) and vehicle queuing.

Level of service is a qualitative measure used to describe the level of performance of an intersection in terms of traffic movement. Level of service for intersections is defined in terms of delay, which is a measure of driver discomfort, frustration and increased travel time. The quality of traffic movement is divided into six levels ranging from A to F. Level of service A represents the best quality of traffic where there are essentially free flow conditions, and level of service F represents the worst quality of traffic where the level of congestion is considered unacceptable to most drivers. The level of service criteria for intersections (Table 12) are stated in terms of average control delay per vehicle, where control delay is additional travel time experienced by a motor vehicle attributable to the presence of traffic control (unsignalized or signalized intersection) and conflicting traffic.



Table 12: Level of service criteria

Level of Service	Description	Signalized Delay	Unsignalized Delay
A	No congestion; most vehicles do not stop. (Excellent)	≤ 10 sec/veh	≤ 10 sec/veh
B	Very light congestion; some vehicles stop. (Very Good)	10-20 sec/veh	10-15 sec/veh
C	Light congestion; most vehicles stop. (Good)	20-35 sec/veh	15-25 sec/veh
D	Noticeable congestion; vehicles must sometimes wait through more than one red light. No long-standing queues. (Satisfactory)	35-55 sec/veh	25-35 sec/veh
E	Congestion; vehicles must sometimes wait through more than one red light. Long-standing queues are formed. (Unsatisfactory)	55-80 sec/veh	35-50 sec/veh
F	Severe congestion; demand exceeds the capacity of the approach/intersection. (Unacceptable)	≥ 80 sec/veh	≥ 50 sec/veh

The volume-to-capacity (v/c) ratio is a measure of how the peak hour traffic volume on an approach to an intersection compares to the theoretical maximum volume that could be accommodated on that intersection approach. As the v/c ratio approaches 1.0, the movement has reduced ability to accommodate any additional volume of traffic.

The 95<sup>th</sup> percentile queue (95<sup>th</sup>% queue) is the estimated length, in metres, of the vehicles queued on an intersection approach which is only exceeded five percent of the time. The average vehicle occupies approximately seven metres of queue length so, for example, a 95<sup>th</sup> percentile queue of 14 metres on any particular approach indicates that less than five times of out 100 there may be more than two vehicles stopped on that approach. The 95<sup>th</sup> percentile queue is typically used to determine if sufficient vehicle storage is available to maintain efficient traffic flow.

## 5.2 Analysis Scenarios

The weekday peak hour operations at the study intersections were evaluated under three scenarios to quantify the impact of the future growth and the preferred development scenario on the study area road network. The assessment scenarios included:

- **Scenario 2A Background Growth Conditions:** A projection of future background traffic growth reflecting normal increases in traffic on the study area road network. This scenario provides an assessment of future operations without the preferred development scenario.
- **Scenario 2B Background Growth Conditions with Improvements:** A projection of future background traffic growth with proposed improvements required to accommodate background traffic growth.
- **Scenario 3 Future Development Conditions:** The projection of background traffic growth from Scenario 2, with the addition of the projected traffic volumes associated with the full build-out of the preferred development scenario.

The following sections summarize the results of the intersection analysis.

## 5.3 Scenario 2A Future Background Growth Conditions

Scenario 2A is an assessment of future traffic operations without the proposed development in the expansion lands. The traffic volumes for this scenario reflect to the existing traffic volumes from Scenario 1 factored by 25.0 percent to account for background traffic growth. The road network for this scenario consists of the existing intersections with no proposed improvements to accommodate background growth.





Future traffic operations at the sixteen study intersections were evaluated during the weekday morning and afternoon peak one-hour period of traffic. The results of the analysis including delay, level of service, volume-to-capacity ratio and vehicle queuing are summarized in Table 13. The detailed Synchro and SimTraffic reports are included in Appendix A and the detailed Arcady reports are included in Appendix B.

With background traffic growth, six of the study intersections are expected to experience operational deficiencies with one or more individual movements at these intersections experiencing longer delays and/or queues. The operations at the six intersections with operational deficiencies are described below. All other intersections are expected to operate at acceptable levels of service (LOS D or better) during the weekday morning and afternoon peak hours.

**Commercial Street & Silver Fox Avenue:** During the morning peak hour, all movements at the signalized intersection are expected to operate at acceptable levels of service.

During the afternoon peak hour, the signalized intersection is expected to experience very light congestion (LOS B). While the overall intersection operations are considered acceptable, the northbound left and through movements on the Silver Fox Avenue approach are expected to experience congestion (LOS E).

**Recommended improvement:** Operations for the Silver Fox Avenue approach can be improved to acceptable levels of service with modifications to the signal timings.

**Commercial Street & Jones Road:** During the morning peak hour, the unsignalized intersection is expected to experience no congestion (LOS A); all movements are expected to operate at acceptable levels of service.

During the afternoon peak hour, the unsignalized intersection is expected to experience no congestion (LOS A). While the overall intersection operations are considered acceptable, the southbound left and right movements on the Jones Road approach are expected to experience congestion (LOS E).

**Recommended improvement:** Providing a separate left turn storage lane on the Jones Road approach will improve operations for the right turn movement. Operations for the left turn movement on Jones Road will continue to experience congestion, however, the left turning volume is less than 50 vehicles per hour. While the traffic volumes at the intersection will meet the threshold for traffic signals, because of the high through volumes on Commercial Street and proximity of the intersection to adjacent traffic signals a traffic signal is not recommended. Introducing a traffic signal with only one through lane in each direction will create significant queues on Commercial Street that will spill back into the adjacent signalized intersection at Valley View Drive.

**Commercial Street & Prospect Road:** During the morning peak hour, the signalized intersection is expected to experience very light congestion (LOS B); all movements are expected to operate at acceptable levels of service.

During the afternoon peak hour, the signalized intersection is expected to experience light congestion (LOS C). While the overall intersection operations are considered acceptable, the southbound left movement on the commercial driveway approach is expected to experience congestion (LOS E). The 95<sup>th</sup> percentile queue lengths for the westbound left movement (Commercial Street) will exceed the storage capacity of the left turn lane and extend into the two-way left turn lane.



**Recommended improvement:** Queuing on Commercial Street can be improved with modifications to the signal timings. Since the southbound left turning volume is approximately 50 vehicles per hour and on the minor street approach, no additional improvements are recommended to improve the level of service for the southbound movement at this time.

**Commercial Street & New Minas Connector Road:** During the morning peak hour, the signalized intersection is expected to experience congestion (LOS E). Operations at the intersection will be considered unacceptable. The southbound left movement will be over capacity and experience severe congestion (LOS F). The 95<sup>th</sup> percentile queue lengths for the southbound left movement and the northbound left movement will exceed the storage capacity of the left turn lanes.

During the afternoon peak hour, the signalized intersection is expected to experience noticeable congestion (LOS D). The southbound left movement will be over capacity and experience severe congestion (LOS F), the southbound through movement will experience congestion (LOS E). The 95<sup>th</sup> percentile queue lengths for the southbound left will exceed the storage capacity of the left turn lane, queue lengths for the northbound left and westbound right movements will be approaching the storage capacity of their respective turning lanes.

**Recommended improvement:** The intersection experiences operational issues and under existing and background growth conditions. While modifications to the signal timings can improve operations on some approaches, there are safety deficiencies that need to be addressed through a complete redesign of the intersection. Converting the signalized intersection to a multi-lane roundabout will improve operations to acceptable levels of service and improve safety.

**New Minas Connector Road & Prospect Road:** The intersection is expected to operate at acceptable levels of service during both the morning and afternoon peak hours. While operations are expected to remain acceptable, the 95<sup>th</sup> percentile queue lengths for the northbound approach are expected to exceed the storage capacity of the approach during both peak hours and impact operations at the adjacent Highway 101 ramps intersections.

The 95<sup>th</sup> percentile queue lengths for the southbound left movement and the northbound left movement will exceed the storage capacity of the left turn lanes.

**Recommended improvement:** Converting the signalized intersection to a roundabout will improve traffic operations and reduce queuing on the northbound approach.

**New Minas Connector Road & Highway 101 Eastbound Ramps:** During the morning peak hour, the unsignalized intersection is expected to operate at acceptable levels of service, with the Highway 102 Eastbound Off-Ramp approach experiencing noticeable congestion (LOS D).

During the afternoon peak hour, the unsignalized intersection is expected to experience severe congestion (LOS F). Operations at the intersection will be considered unacceptable. The Highway 101 Eastbound Off-Ramp approach will be over capacity and experience severe congestion (LOS F).

**Recommended improvement:** Upgrading the unsignalized intersection to a roundabout will improve traffic operations.



Table 13: Scenario 2A intersection results

Scenario 2A Background Growth		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Deep Hollow Road</b>		<b>408</b>	<b>2.5</b>	<b>A</b>			<b>3.0</b>	<b>A</b>		<b>531</b>	<b>2.6</b>	<b>A</b>			<b>4.7</b>	<b>A</b>	
Commercial Street	EB-T	298	0.0	A	-	-	3.5	A	1.9	500	0.0	A	-	-	5.4	A	3.6
	EB-R	41	0.0	A	-	-	3.4	A		83	0.0	A	-	-	4.9	A	
	WB-L	15	8.2	A	0.02	0.0	3.4	A	10.3	35	9.1	A	0.04	0.8	6.7	A	30.0
	WB-T	285	0.0	A	-	-	0.5	A		404	0.0	A	-	-	1.5	A	
Deep Hollow Road	NB-L	75	16.2	C	0.28	8.4	8.6	A	22.3	64	28.7	D	0.41	14.4	15.0	B	21.9
	NB-R	33					4.5	A		28					8.4	A	
<b>Commercial Street &amp; Silver Fox Avenue</b>		<b>1179</b>	<b>7.9</b>	<b>A</b>			<b>7.0</b>	<b>A</b>		<b>1696</b>	<b>17.1</b>	<b>B</b>			<b>14.9</b>	<b>B</b>	
Commercial Street	EB-L	6	6.7	A	0.01	2.0	11.1	B	8.0	15	11.5	B	0.03	4.5	16.9	B	13.6
	EB-T	406	8.1	A	0.33	54.5	4.8	A	40.3	519	17.3	B	0.52	96.3	13.9	B	88.5
	EB-R	66	2.0	A	0.06	4.7	2.8	A	0.0	163	2.3	A	0.18	9.1	3.3	A	0.0
	WB-L	69	2.6	A	0.10	5.3	8.3	A	16.2	98	6.3	A	0.19	11.1	14.7	B	23.2
	WB-T	475	3.6	A	0.34	37.6	6.8	A	44.8	500	8.7	A	0.41	61.2	11.1	B	64.8
	WB-R	6					6.4	A		9					11.2	B	
Silver Fox Avenue	NB-L	38	45.7	D	0.36	18.5	33.3	C	21.9	211	58.5	E	0.78	81.1	42.5	D	69.0
	NB-T	6					32.6	C		8					35.1	D	
	NB-R	66	14.3	B	0.34	11.9	2.1	A	0.0	151	7.6	A	0.33	15.8	2.3	A	0.0
Bonavista Avenue	SB-L	6	24.1	C	0.25	12.7	28.5	C	18.5	8	24.9	C	0.06	8.7	27.9	C	12.5
	SB-T	10					33.6	C		6					35.4	D	
	SB-R	25					9.3	A		8					10.3	B	
<b>Commercial Street &amp; Granite Drive</b>		<b>1169</b>	<b>2.1</b>	<b>A</b>			<b>-</b>	<b>-</b>		<b>1715</b>	<b>2.6</b>	<b>A</b>			<b>-</b>	<b>-</b>	
Commercial Street	EB-L	20	2.0	A	0.22	8.4	-	-	-	28	2.3	A	0.33	16.0	-	-	-
	EB-T	449					-	-	-	663					-	-	-
	EB-R	69					-	-	-	118					-	-	-
	WB-L	23	2.1	A	0.24	9.1	-	-	-	31	2.5	A	0.34	18.2	-	-	-
	WB-T	450					-	-	-	656					-	-	-
	WB-R	6					-	-	-	8					-	-	-
Granite Drive	NB-L	111	2.0	A	0.07	3.8	-	-	-	95	2.3	A	0.08	3.8	-	-	-
	NB-T	6					-	-	-	6					-	-	-
	NB-R	10					-	-	-	25					-	-	-
Old Dyke Road	SB-L	6	4.6	A	0.03	3.8	-	-	-	21	5.9	A	0.13	3.8	-	-	-
	SB-T	6					-	-	-	21					-	-	-
	SB-R	13					-	-	-	43					-	-	-



New Minas Transportation Study  
Phase 2 Scenarios and Recommendations

Scenario 2A Background Growth		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Granite Drive &amp; Silver Fox Avenue/County Fair</b>		<b>497</b>	<b>2.6</b>	<b>A</b>			-	-	-	<b>801</b>	<b>2.9</b>	<b>A</b>			-	-	-
County Fair Mall	EB-L	6	3.5	A	0.06	3.8	-	-	-	13	4.2	A	0.17	3.8	-	-	-
	EB-T	19					-	-	-	20					-	-	-
	EB-R	25					-	-	-	119					-	-	-
	EB-HR	6					-	-	-	6					-	-	-
Silver Fox Avenue	WB-L	50	3.6	A	0.08	3.8	-	-	-	113	4.0	A	0.15	3.8	-	-	-
	WB-BL	6					-	-	-	6					-	-	-
	WB-T	13					-	-	-	24					-	-	-
	WB-R	6					-	-	-	6					-	-	-
Old Granite Drive	NEB-HL	6	3.5	A	0.03	3.8	-	-	-	6	4.0	A	0.03	3.8	-	-	-
	NEB-L	6					-	-	-	6					-	-	-
	NEB-T	6					-	-	-	6					-	-	-
	NEB-R	9					-	-	-	9					-	-	-
Granite Drive	NB-HL	8	2.2	A	0.14	3.8	-	-	-	6	2.2	A	0.16	3.8	-	-	-
	NB-L	44					-	-	-	104					-	-	-
	NB-T	114					-	-	-	103					-	-	-
	NB-R	74					-	-	-	71					-	-	-
	SB-L	6	1.8	A	0.05	3.8	-	-	-	11	1.9	A	0.09	3.8	-	-	-
	SB-T	81					-	-	-	158					-	-	-
	SB-BR	6					-	-	-	6					-	-	-
	SB-R	6					-	-	-	8					-	-	-
<b>Granite Drive &amp; Highway 101 Westbound Ramps</b>		<b>405</b>	<b>2.5</b>	<b>A</b>			-	-	-	<b>680</b>	<b>1.8</b>	<b>A</b>			-	-	-
Highway 101 Westbound Off-Ramp	WB-L	1	3.0	A	0.00	3.8	-	-	-	0	0.0	A	0.00	0.0	-	-	-
	WB-R	125					-	-	-	133					-	-	-
Granite Drive	NB-L	0	3.2	A	0.10	3.8	-	-	-	5	3.3	A	0.13	3.8	-	-	-
	NB-T	114					-	-	-	148					-	-	-
	SB-T	100	1.7	A	0.08	3.8	-	-	-	188	1.8	A	0.18	3.8	-	-	-
	SB-R	65					-	-	-	206					-	-	-
<b>Granite Drive &amp; Highway 101 Eastbound Ramps</b>		<b>215</b>	<b>3.3</b>	<b>A</b>			-	-	-	<b>341</b>	<b>3.5</b>	<b>A</b>			-	-	-
Highway 101 Eastbound Off-Ramp	EB-L	114	3.4	A	0.11	3.8	-	-	-	153	3.7	A	0.15	3.8	-	-	-
	EB-R	0					-	-	-	0					-	-	-
Granite Drive	NB-T	0	0.0	A	0.00	0.0	-	-	-	0	0.0	A	0.00	0.0	-	-	-
	NB-R	0					-	-	-	0					-	-	-
	SB-L	101	3.2	A	0.09	3.8	-	-	-	188	3.4	A	0.16	3.8	-	-	-
	SB-T	0					-	-	-	0					-	-	-



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Scenario 2A Background Growth		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Cornwallis Avenue</b>		<b>1224</b>	<b>8.4</b>	<b>A</b>			<b>6.3</b>	<b>A</b>		<b>1835</b>	<b>13.6</b>	<b>B</b>			<b>11.9</b>	<b>B</b>	
Commercial Street	EB-L	11	8.5	A	0.02	3.3	11.9	B	9.4	25	11.7	B	0.07	7.1	19.5	B	16.2
	EB-T	475					5.3	A	27.7	689					11.9	B	56.7
	EB-R	18	7.2	A	0.22	31.0	3.4	A	27.4	23	12.3	B	0.41	58.3	10.3	B	46.5
	WB-L	23	4.0	A	0.04	3.0	6.1	A	7.4	94	5.8	A	0.22	10.9	9.3	A	25.1
	WB-T	550					4.6	A	40.3	658					8.9	A	78.6
	WB-R	23					3.5	A		24					7.0	A	
County Fair Mall	NB-L	16					18.3	B		80					26.2	C	
	NB-T	6	27.6	C	0.11	8.9	18.6	B	9.2	18	38.2	D	0.51	29.8	25.1	C	27.7
	NB-R	18	0.4	A	0.06	0.0	4.6	A	5.6	99	8.7	A	0.31	12.1	5.5	A	17.6
Cornwallis Avenue	SB-L	63					22.8	C		75					26.0	C	
	SB-T	8	33.0	C	0.45	23.5	24.4	C	25.3	24	37.9	D	0.59	34.6	24.5	C	35.9
	SB-R	13					12.3	B		26					15.2	B	
<b>Commercial Street &amp; Valley View Drive</b>		<b>688</b>	<b>8.6</b>	<b>A</b>			<b>5.9</b>	<b>A</b>		<b>1081</b>	<b>17.2</b>	<b>B</b>			<b>13.1</b>	<b>B</b>	
Commercial Street	EB-T	536	8.5	A	0.45	86.8	4.2	A	45.1	704	16.9	B	0.67	175.1	10.2	B	81.9
	EB-R	64	3.1	A	0.06	6.4	2.5	A	19.0	206	4.7	A	0.22	19.7	5.9	A	46.7
	WB-L	6	3.7	A	0.01	1.3	8.7	A	5.6	13	6.8	A	0.04	3.1	18.3	B	14.2
	WB-T	593	6.3	A	0.47	59.1	6.0	A	55.5	806	15.4	B	0.73	143.8	14.1	B	112.0
Valley View Drive	NB-L	83	30.5	C	0.37	24.5	21.0	C	23.7	251	34.6	C	0.67	61.2	23.8	C	53.4
	NB-R	6	16.2	B	0.03	3.3	5.2	A	4.8	11	12.5	B	0.03	3.8	8.0	A	5.5
<b>Commercial Street &amp; Jones Road</b>		<b>867</b>	<b>3.8</b>	<b>A</b>			<b>5.6</b>	<b>A</b>		<b>1112</b>	<b>2.1</b>	<b>A</b>			<b>9.9</b>	<b>A</b>	
Commercial Street	EB-L	103	10.1	B	0.14	3.8	10.1	B	20.3	29	11.5	B	0.06	1.5	14.2	B	13.2
	EB-T	651	0.0	A	-	-	3.5	A	5.3	941	0.0	A	-	-	3.6	A	11.3
	WB-T	621	0.0	A	-	-	3.2	A	6.4	943	0.0	A	-	-	5.9	A	68.8
	WB-R	94	0.0	A	-	-	2.3	A		80	0.0	A	-	-	4.6	A	
Jones Road	SB-L	66					32.0	D	44.9	44	46.7	<b>E</b>	0.56	22.8	133.6	<b>F</b>	81.4
	SB-R	86	33.5	D	0.59	26.6	20.0	C		45				98.4	<b>F</b>		
<b>Commercial Street &amp; Prospect Road</b>		<b>1655</b>	<b>13.4</b>	<b>B</b>			<b>14.6</b>	<b>B</b>		<b>2073</b>	<b>20.7</b>	<b>C</b>			<b>25.3</b>	<b>C</b>	
Commercial Street	EB-L	20	10.6	B	0.05	5.7	23.4	C	18.5	9	15.1	B	0.04	4.1	34.1	C	15.0
	EB-T	581					16.9	B	95.6	620					17.5	B	
	EB-R	20	16.7	B	0.64	123.4	17.4	B		25	30.1	C	0.83	185.2	18.9	B	103.2
	WB-L	110	5.2	A	0.27	10.9	15.9	B	28.4	214	18.5	B	0.63	40.1	41.0	D	32.7
	WB-T	535					8.8	A	68.7	769					30.9	C	274.9
	WB-R	6	6.1	A	0.45	58.0	8.1	A		8	11.6	B	0.69	136.6	29.6	C	
Prospect Road	NB-L	64	36.2	D	0.39	21.3	27.9	C	28.3	60	34.8	C	0.33	20.3	30.7	C	26.9
	NB-T	19	12.4	B	0.60	21.2	24.7	C	44.4	24	11.4	B	0.61	20.0	26.3	C	52.5
	NB-R	210					13.8	B		234				15.5	B		
Driveway	SB-L	41	46.0	D	0.46	16.2	31.1	C	19.5	56	74.3	<b>E</b>	0.73	22.6	37.1	D	22.0
	SB-T	30					22.1	C		33				23.0	C		
	SB-R	19	22.1	C	0.21	13.7	9.3	A	17.8	21	21.8	C	0.21	14.3	13.7	B	22.4



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Scenario 2A Background Growth		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Highbury Road</b>		<b>1256</b>	<b>12.5</b>	<b>B</b>			<b>9.8</b>	<b>A</b>		<b>1978</b>	<b>21.8</b>	<b>C</b>			<b>17.4</b>	<b>B</b>	
Commercial Street	EB-L	15	4.6	A	0.03	2.5	13.3	B	10.2	19	5.5	A	0.06	3.2	22.2	C	14.9
	EB-T	554	11.7	B	0.52	97.5	9.5	A	238.3	763	22.1	C	0.78	201.4	15.0	B	252.9
	EB-R	18					8.9	A		48					14.0	B	
	WB-L	20	4.5	A	0.04	3.0	12.1	B	13.4	45	5.9	A	0.14	5.8	24.0	C	21.4
	WB-T	431	8.0	A	0.37	67.9	7.4	A	53.8	838	19.5	B	0.76	210.4	18.2	B	127.1
	WB-R	6					7.2	A		6					13.0	B	
Highbury Road	NB-L	45	28.0	C	0.51	25.3	23.5	C	28.7	46	31.0	C	0.50	27.4	24.0	C	28.5
	NB-T	20					23.5	C		31					23.9	C	
	NB-R	45					11.0	B		34					14.6	B	
	SB-L	28	22.4	C	0.44	21.2	23.9	C	25.9	59	32.7	C	0.60	34.0	27.7	C	36.3
	SB-T	24					20.7	C		29					24.7	C	
	SB-R	50					10.0	A		60					16.8	B	
<b>Commercial Street &amp; New Minas Connector Road</b>		<b>2027</b>	<b>65.9</b>	<b>E</b>			<b>65.5</b>	<b>E</b>		<b>2895</b>	<b>47.4</b>	<b>D</b>			<b>56.6</b>	<b>E</b>	
Commercial Street	EB-L	18	13.4	B	0.04	6.0	15.7	B	13.5	48	11.8	B	0.11	10.8	27.8	C	38.4
	EB-T	284	24.0	C	0.37	78.7	18.0	B	64.3	480	27.5	C	0.59	133.4	32.7	C	161.2
	EB-R	88	0.5	A	0.12	0.6	5.4	A	30.6	205	7.3	A	0.27	24.1	19.7	B	38.3
	WB-L	79	13.4	B	0.17	18.6	19.2	B	33.7	171	13.4	B	0.40	31.0	25.5	C	49.0
	WB-T	308	18.9	B	0.33	80.9	17.4	B	59.8	471	22.4	C	0.51	118.6	24.0	C	122.5
	WB-R	203	3.4	A	0.23	14.2	6.0	A	18.6	513	7.3	A	0.54	49.7	11.6	B	67.0
New Minas Connector Road	NB-L	260	39.9	D	0.68	75.6	35.5	D	59.0	153	36.4	D	0.49	45.6	36.8	D	49.7
	NB-T	169	32.2	C	0.42	34.4	44.9	D	75.4	151	27.9	C	0.49	29.5	49.0	D	60.0
	NB-R	88					9.8	A	108	10.0					A	44.8	
Cornwallis River Crossing	SB-L	350	264.8	<b>F</b>	<b>1.48</b>	154.1	273.0	<b>F</b>	104.2	371	219.3	<b>F</b>	<b>1.37</b>	143.6	276.0	<b>F</b>	108.1
	SB-T	120	42.5	D	0.55	29.4	70.5	<b>E</b>	226.5	190	51.0	D	0.58	39.4	72.8	<b>E</b>	242.8
	SB-R	60					16.3	B	40.7	34					21.1	C	38.4
<b>New Minas Connector Road &amp; Prospect Road</b>		<b>1290</b>	<b>13.6</b>	<b>B</b>			<b>10.5</b>	<b>B</b>		<b>1819</b>	<b>19.7</b>	<b>B</b>			<b>15.9</b>	<b>B</b>	
Prospect Road	EB-L	21	17.5	B	0.30	16.9	21.9	C	24.8	16	11.5	B	0.21	16.9	17.9	B	22.7
	EB-T	44					20.1	C		55					18.7	B	
	EB-R	23					3.0	A		46					2.8	A	
	WB-L	143	28.0	C	0.53	30.4	24.8	C	35.7	325	34.2	C	0.78	67.2	29.9	C	63.4
	WB-T	24	9.6	A	0.27	12.1	20.6	C	14.6	54	8.6	A	0.23	15.5	22.0	C	55.2
	WB-R	69					3.4	A		78					4.3	A	
New Minas Connector Road	NB-L	18	6.8	A	0.03	3.7	9.7	A	8.5	53	13.2	B	0.15	12.6	21.9	C	22.8
	NB-T	426	13.4	B	0.69	104.0	11.1	B	54.3	318	19.8	B	0.73	141.0	16.0	B	59.5
	NB-R	235					3.1	A		308					3.8	A	
	SB-L	46	8.8	A	0.17	8.7	15.4	B	13.4	88	19.6	B	0.38	24.0	21.5	C	27.9
	SB-T	215	7.2	A	0.25	28.0	6.6	A	24.4	449	15.7	B	0.53	88.2	14.7	B	58.9
	SB-R	26					2.5	A		29					8.0	A	





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Scenario 2A Background Growth		Weekday AM Peak Hour								Weekday PM Peak Hour							
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>New Minas Connector Road &amp; Highway 101</b>		<b>1120</b>	<b>4.5</b>	<b>A</b>			<b>6.4</b>	<b>A</b>		<b>1544</b>	<b>3.9</b>	<b>A</b>			<b>8.3</b>	<b>A</b>	
Highway 101 Westbound Off-Ramp	WB-L	10	17.3	C	0.50	21.3	20.7	C	52.1	26	20.2	C	0.56	26.6	34.5	D	79.0
	WB-R	256					16.3	C		264					25.2	D	
New Minas Connector Road	NB-L	50	8.3	A	0.05	0.8	4.6	A	11.2	19	9.7	A	0.03	0.8	9.0	A	10.1
	NB-T	423	0.0	A	-	-	3.6	A	9.2	415	0.0	A	-	-	3.9	A	12.5
	SB-T	206	0.0	A	-	-	3.2	A	5.9	482	0.0	A	-	-	5.2	A	19.4
	SB-R	175	0.0	A	-	-	1.6	A		338	0.0	A	-	-	2.5	A	
<b>New Minas Connector Road &amp; Highway 101</b>		<b>726</b>	<b>13.5</b>	<b>B</b>			<b>5.9</b>	<b>A</b>		<b>989</b>	<b>89.3</b>	<b>F</b>			<b>9.2</b>	<b>A</b>	
Highway 101 Eastbound Off-Ramp	EB-L	256	31.1	D	0.69	38.0	12.3	B	37.0	293	261.1	F	1.44	148.2	22.2	C	62.4
	EB-R	18					7.7	A		36					14.8	B	
New Minas Connector Road	NB-T	217	0.0	A	-	-	1.9	A	0.5	141	0.0	A	-	-	1.8	A	0.0
	NB-R	19	0.0	A	-	-	0.4	A		11	0.0	A	-	-	0.2	A	
	SB-L	158	8.2	A	0.13	3.0	3.2	A	16.1	294	8.2	A	0.21	6.1	4.0	A	19.1
	SB-T	58	0.0	A	-	-	2.0	A	0.0	214	0.0	A	-	-	3.1	A	0.0
<b>New Canaan Road &amp; Highbury School Road</b>		<b>324</b>	<b>4.8</b>	<b>A</b>			<b>1.7</b>	<b>A</b>		<b>414</b>	<b>4.3</b>	<b>A</b>			<b>1.3</b>	<b>A</b>	
Highbury School Road	WB-L	6	9.8	A	0.16	4.6	5.7	A	18.9	6	9.6	A	0.10	2.3	5.3	A	13.7
	WB-R	126					3.3	A		71					2.5	A	
New Canaan Road	NB-T	110	0.0	A	-	-	0.7	A	0.0	81	0.0	A	-	-	0.5	A	0.0
	NB-R	6	0.0	A	-	-	0.0	A		6	0.0	A	-	-	0.1	A	
	SB-L	35	7.6	A	0.03	0.8	1.0	A	5.8	134	7.7	A	0.11	2.3	1.6	A	9.9
	SB-T	41	0.0	A	-	-	0.3	A	0.0	116	0.0	A	-	-	0.5	A	0.0



### 5.3.1 Traffic Signal Warrants

A traffic signal warrant analysis is completed to determine if the installation of traffic signals at an intersection will provide a positive impact on an intersection operation, meaning that the benefits of reduced delay and improved safety for the minor street vehicles will outweigh the impacts of increased delay and potential additional collisions for the major street vehicles.

The Transportation Association of Canada developed the Canadian Traffic Signal Warrant Matrix Procedure in 2005 to provide a basis for making rational, defensible decisions on the installation of traffic signals. The matrix uses a “cumulative factors methodology” to evaluate vehicle to vehicle and vehicle to pedestrian interactions while considering local factors such as demographics and roadway characteristics. The Canadian Traffic Signal Warrant Matrix Procedure considers 100 warrant points as an indication that traffic signals will provide a positive impact.

Traffic signal warrants were completed for the five unsignalized intersections to determine if traffic signals will be warranted with future background traffic growth. The traffic signal warrant worksheets can be found in Appendix C. The scores generated by the signal warrants for each intersection are summarized in Table 14.

Traffic signals will not be warranted at three unsignalized intersections based on future traffic volumes:

- Commercial Street & Deep Hollow Road
- New Minas Connector Roadway & Highway 101 WB
- New Canaan Road & Highbury School Road

Traffic signals will be warranted at the intersection of Commercial Street & Jones Road and approaching the warrant threshold at the intersection of the New Minas Connector Roadway & Highway 101 EB.

Table 14: Traffic signal warrant scores

Intersection	Warrant Points <sup>1</sup>
Commercial Street & Deep Hollow Road	36 points
Commercial Street & Jones Road	103 points
New Minas Connector Roadway & Highway 101 WB	44 points
New Minas Connector Roadway & Highway 101 EB	96 points
New Canaan Road & Highbury School Road	3 points
1. Traffic signals are warranted when an intersection scores a value $\geq 100$ points.	

### 5.4 Scenario 2B Future Background Growth Conditions with Improvements

Scenario 2B is an assessment of future traffic operations without the proposed development in the expansion lands. The traffic volumes for this scenario reflect to the existing traffic volumes from Scenario 1 factored by 25.0 percent to account for background traffic growth.

The road network for this scenario includes the proposed improvements required to accommodate background growth. These improvements include:

- Signal timing modifications at signalized intersections
- Dedicated left turn storage lane on Jones Road
- Roundabout at Commercial Street & New Minas Connector Road
- Roundabout at New Minas Connector Road & Prospect Road
- Roundabouts at the New Minas Connector Road and Highway 101 Interchange Ramps



Future traffic operations at the study intersections were evaluated during the weekday morning and afternoon peak one-hour period of traffic. The results of the analysis including delay, level of service, volume-to-capacity ratio and vehicle queuing are summarized in Table 15. The detailed Synchro and SimTraffic reports are included in Appendix A and the detailed Arcady reports are included in Appendix B.

The proposed improvements will restore operations to acceptable levels of service (LOS D or better) during the weekday morning and afternoon peak hours at the following intersections:

- Commercial Street & Silver Fox Avenue
- Commercial Street & New Minas Connector Road
- New Minas Connector Road & Prospect Road
- New Minas Connector Road & Highway 101 Eastbound Ramps

Only two of the study intersections are expected to continue to experience operational deficiencies with one or more individual movements at these intersections experiencing longer delays and/or queues. The operations at the two intersections with operational deficiencies are described below.

**Commercial Street & Jones Road:** With the dedicated left turn lane on the Jones Road approach, operations for the southbound right turn movement will improve to acceptable levels of service during the peak hours. As expected, the southbound left movement on the Jones Road approach is expected to continue to operate at LOS E.

**Commercial Street & Prospect Road:** The southbound left movement on the commercial driveway approach is expected to continue to operate at LOS E.



Table 15: Scenario 2B intersection analysis results

Scenario 2B Growth with Improvements		Weekday AM Peak Hour							Weekday PM Peak Hour								
		Volume (veh/hr)	Synchro/Arcady			SimTraffic			Volume (veh/hr)	Synchro/Arcady			SimTraffic				
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS		95th% Queue (m)	Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Deep Hollow Road</b>		<b>408</b>	<b>2.5</b>	<b>A</b>			<b>3.0</b>	<b>A</b>		<b>531</b>	<b>2.6</b>	<b>A</b>			<b>4.3</b>	<b>A</b>	
Commercial Street	EB-T	298	0.0	A	-	-	3.5	A	1.2	500	0.0	A	-	-	5.1	A	1.6
	EB-R	41	0.0	A	-	-	3.2	A		83	0.0	A	-	-	4.7	A	
	WB-L	15	8.2	A	0.02	0.0	3.3	A	6.9	35	9.1	A	0.04	0.8	5.4	A	22.8
	WB-T	285	0.0	A	-	-	0.4	A		404	0.0	A	-	-	1.2	A	
Deep Hollow Road	NB-L	75					8.8	A	22.4	64					14.5	B	21.3
	NB-R	33	16.2	C	0.28	8.4	5.0	A		28	28.7	D	0.41	14.4	7.4	A	
<b>Commercial Street &amp; Silver Fox Avenue</b>		<b>1179</b>	<b>7.6</b>	<b>A</b>			<b>6.7</b>	<b>A</b>		<b>1696</b>	<b>15.1</b>	<b>B</b>			<b>11.9</b>	<b>B</b>	
Commercial Street	EB-L	6	6.8	A	0.01	1.9	7.6	A	8.0	15	11.8	B	0.03	4.6	13.5	B	12.9
	EB-T	406	8.6	A	0.35	51.1	4.5	A	42.4	519	15.7	B	0.51	96.6	9.6	A	63.0
	EB-R	66	1.8	A	0.07	4.1	2.8	A	0.0	163	2.7	A	0.18	9.8	3.3	A	0.0
	WB-L	69	2.9	A	0.11	5.3	9.6	A	17.2	98	7.6	A	0.21	13.5	14.0	B	21.3
	WB-T	475					6.8	A		500					11.3	B	
	WB-R	6	4.1	A	0.35	37.4	6.0	A	43.1	9	9.8	A	0.44	73.3	9.7	A	60.4
Silver Fox Avenue	NB-L	38					27.6	C	21.2	211					30.1	C	56.6
	NB-T	6	36.5	D	0.33	15.6	27.2	C		8	44.6	D	0.75	55.5	33.7	C	
	NB-R	66	11.7	B	0.31	10.1	2.2	A	5.1	151	6.2	A	0.32	12.9	2.3	A	0.0
Bonavista Avenue	SB-L	6					27.2	C	15.3	8					22.2	C	12.3
	SB-T	10	19.9	B	0.23	10.9	27.5	C		6	18.1	B	0.06	7.0	24.5	C	
	SB-R	25					7.0	A		8					8.1	A	
<b>Commercial Street &amp; Granite Drive</b>		<b>1169</b>	<b>2.1</b>	<b>A</b>			<b>-</b>	<b>-</b>		<b>1715</b>	<b>2.6</b>	<b>A</b>			<b>-</b>	<b>-</b>	
Commercial Street	EB-L	20					-	-	-	28					-	-	-
	EB-T	449	2.0	A	0.22	8.4	-	-	-	663	2.3	A	0.33	16.0	-	-	-
	EB-R	69					-	-	-	118					-	-	-
	WB-L	23					-	-	-	31					-	-	-
	WB-T	450	2.1	A	0.24	9.1	-	-	-	656	2.5	A	0.34	18.2	-	-	-
	WB-R	6					-	-	-	8					-	-	-
Granite Drive	NB-L	111					-	-	-	95					-	-	-
	NB-T	6	2.0	A	0.07	3.8	-	-	-	6	2.3	A	0.08	3.8	-	-	-
	NB-R	10					-	-	-	25					-	-	-
Old Dyke Road	SB-L	6					-	-	-	21					-	-	-
	SB-T	6	4.6	A	0.03	3.8	-	-	-	21	5.9	A	0.13	3.8	-	-	-
	SB-R	13					-	-	-	43					-	-	-



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Scenario 2B Growth with Improvements		Weekday AM Peak Hour								Weekday PM Peak Hour							
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Granite Drive &amp; Silver Fox Avenue/County Fair</b>		<b>497</b>	<b>2.6</b>	<b>A</b>			-	-	-	<b>801</b>	<b>2.9</b>	<b>A</b>			-	-	-
County Fair Mall	EB-L	6	3.5	A	0.06	3.8	-	-	-	13	4.2	A	0.17	3.8	-	-	-
	EB-T	19					-	-	-	20					-	-	-
	EB-R	25					-	-	-	119					-	-	-
	EB-HR	6					-	-	-	6					-	-	-
Silver Fox Avenue	WB-L	50	3.6	A	0.08	3.8	-	-	-	113	4.0	A	0.15	3.8	-	-	-
	WB-BL	6					-	-	-	6					-	-	-
	WB-T	13					-	-	-	24					-	-	-
	WB-R	6					-	-	-	6					-	-	-
Old Granite Drive	NEB-HL	6	3.5	A	0.03	3.8	-	-	-	6	4.0	A	0.03	3.8	-	-	-
	NEB-L	6					-	-	-	6					-	-	-
	NEB-T	6					-	-	-	6					-	-	-
	NEB-R	9					-	-	-	9					-	-	-
Granite Drive	NB-HL	8	2.2	A	0.14	3.8	-	-	-	6	2.2	A	0.16	3.8	-	-	-
	NB-L	44					-	-	-	104					-	-	-
	NB-T	114					-	-	-	103					-	-	-
	NB-R	74					-	-	-	71					-	-	-
	SB-L	6	1.8	A	0.05	3.8	-	-	-	11	1.9	A	0.09	3.8	-	-	-
	SB-T	81					-	-	-	158					-	-	-
	SB-BR	6					-	-	-	6					-	-	-
	SB-R	6					-	-	-	8					-	-	-
<b>Granite Drive &amp; Highway 101 Westbound Ramps</b>		<b>405</b>	<b>2.5</b>	<b>A</b>			-	-	-	<b>680</b>	<b>1.8</b>	<b>A</b>			-	-	-
Highway 101 Westbound Off-Ramp	WB-L	1	3.0	A	0.00	3.8	-	-	-	0	0.0	A	0.00	0.0	-	-	-
	WB-R	125					-	-	-	133					-	-	-
Granite Drive	NB-L	0	3.2	A	0.10	3.8	-	-	-	5	3.3	A	0.13	3.8	-	-	-
	NB-T	114					-	-	-	148					-	-	-
	SB-T	100	1.7	A	0.08	3.8	-	-	-	188	1.8	A	0.18	3.8	-	-	-
	SB-R	65					-	-	-	206					-	-	-
<b>Granite Drive &amp; Highway 101 Eastbound Ramps</b>		<b>215</b>	<b>3.3</b>	<b>A</b>			-	-	-	<b>341</b>	<b>3.5</b>	<b>A</b>			-	-	-
Highway 101 Eastbound Off-Ramp	EB-L	114	3.4	A	0.11	3.8	-	-	-	153	3.7	A	0.15	3.8	-	-	-
	EB-R	0					-	-	-	0					-	-	-
Granite Drive	NB-T	0	0.0	A	0.00	0.0	-	-	-	0	0.0	A	0.00	0.0	-	-	-
	NB-R	0					-	-	-	0					-	-	-
	SB-L	101	3.2	A	0.09	3.8	-	-	-	188	3.4	A	0.16	3.8	-	-	-
	SB-T	0					-	-	-	0					-	-	-



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Scenario 2B Growth with Improvements		Weekday AM Peak Hour								Weekday PM Peak Hour							
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Cornwallis Avenue</b>		<b>1224</b>	<b>8.4</b>	<b>A</b>			<b>6.8</b>	<b>A</b>		<b>1835</b>	<b>13.3</b>	<b>B</b>			<b>11.5</b>	<b>B</b>	
Commercial Street	EB-L	11	8.5	A	0.02	3.3	12.8	B	9.0	25	11.0	B	0.07	6.7	20.6	C	17.7
	EB-T	475	6.9	A	0.21	31.0	5.4	A	29.5	689	11.5	B	0.39	55.1	11.0	B	59.7
	EB-R	18					4.6	A	28.7	23					8.2	A	47.0
	WB-L	23	3.9	A	0.04	3.0	5.6	A	7.0	94	5.7	A	0.22	10.9	10.4	B	16.5
	WB-T	550	5.4	A	0.42	54.2	4.9	A	43.7	658	8.5	A	0.57	93.7	7.9	A	68.4
	WB-R	23					2.7	A	24	5.6					A	24	
County Fair Mall	NB-L	16	28.7	C	0.12	8.8	23.3	C	9.3	80	39.7	D	0.53	29.6	27.5	C	29.6
	NB-T	6					28.5	C	18	27.2					C	27.2	C
	NB-R	18	0.4	A	0.06	0.0	4.4	A	6.4	99	8.7	A	0.32	12.1	5.9	A	18.6
Cornwallis Avenue	SB-L	63	35.4	D	0.49	23.1	27.8	C		75	38.9	D	0.62	33.8	27.8	C	
	SB-T	8					25.2	C	27.6	24					29.1	C	32.0
	SB-R	13					13.7	B	26	17.0					B		
<b>Commercial Street &amp; Valley View Drive</b>		<b>688</b>	<b>8.3</b>	<b>A</b>			<b>6.0</b>	<b>A</b>		<b>1081</b>	<b>16.4</b>	<b>B</b>			<b>12.5</b>	<b>B</b>	
Commercial Street	EB-T	536	7.2	A	0.42	86.9	3.9	A	43.4	704	13.8	B	0.61	144.8	9.0	A	87.1
	EB-R	64	2.1	A	0.06	5.1	2.5	A	14.3	206	2.9	A	0.20	13.7	5.3	A	48.3
	WB-L	6	3.3	A	0.01	1.3	6.9	A	4.5	13	5.7	A	0.03	2.7	18.5	B	14.8
	WB-T	593	5.3	A	0.44	60.6	5.0	A	48.6	806	12.4	B	0.67	124.0	10.9	B	96.2
Valley View Drive	NB-L	83	41.4	D	0.44	27.6	31.6	C	32.2	251	48.5	D	0.77	66.6	34.3	C	62.5
	NB-R	6	19.5	B	0.04	3.7	5.3	A	6.6	11	15.0	B	0.04	4.2	8.7	A	8.4
<b>Commercial Street &amp; Jones Road</b>		<b>867</b>	<b>2.8</b>	<b>A</b>			<b>5.3</b>	<b>A</b>		<b>1112</b>	<b>1.5</b>	<b>A</b>			<b>7.4</b>	<b>A</b>	
Commercial Street	EB-L	103	10.1	B	0.14	3.8	10.0	A	19.4	29	11.5	B	0.06	1.5	14.5	B	14.1
	EB-T	651	0.0	A	-	-	3.4	A	5.3	941	0.0	A	-	-	3.8	A	10.6
	WB-T	621	0.0	A	-	-	3.2	A	5.7	943	0.0	A	-	-	4.4	A	31.6
	WB-R	94	0.0	A	-	-	2.1	A		80	0.0	A	-	-	3.7	A	
Jones Road	SB-L	66	30.5	D	0.35	11.4	37.7	E	23.6	44	40.9	E	0.34	10.6	122.3	F	27.4
	SB-R	86	16.8	C	0.24	6.8	8.2	A	27.6	45	24.2	C	0.22	6.1	32.1	D	54.6
<b>Commercial Street &amp; Prospect Road</b>		<b>1655</b>	<b>12.9</b>	<b>B</b>			<b>14.0</b>	<b>B</b>		<b>2073</b>	<b>19.2</b>	<b>B</b>			<b>23.5</b>	<b>C</b>	
Commercial Street	EB-L	20	9.5	A	0.05	5.3	18.7	B	17.8	9	13.4	B	0.04	3.7	30.9	C	10.6
	EB-T	581	14.4	B	0.59	117.3	14.4	B	85.9	620	25.6	C	0.78	153.7	17.0	B	118.1
	EB-R	20					10.5	B	25	17.1					B	17.1	
	WB-L	110	5.2	A	0.26	11.8	14.4	B	28.2	214	16.5	B	0.65	31.4	35.5	D	32.9
	WB-T	535	6.1	A	0.44	62.8	8.0	A	67.1	769	11.5	B	0.69	119.2	24.3	C	237.2
	WB-R	6					6.1	A	8	19.7					B	19.7	
Prospect Road	NB-L	64	38.7	D	0.40	21.8	33.6	C	26.2	60	34.8	C	0.33	20.6	37.5	D	32.0
	NB-T	19	12.7	B	0.61	21.5	32.3	C	41.4	24	11.3	B	0.61	20.3	32.6	C	54.7
	NB-R	210					14.6	B	234	18.7					B	18.7	
Driveway	SB-L	41	53.8	D	0.52	16.9	41.7	D	23.0	56	79.6	E	0.75	25.6	66.8	E	37.6
	SB-T	30	23.4	C	0.22	14.0	31.3	C	20.9	33	21.9	C	0.21	14.5	27.8	C	22.0
	SB-R	19					11.5	B	21	13.6					B	13.6	



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Scenario 2B Growth with Improvements		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Highbury Road</b>		<b>1256</b>	<b>12.4</b>	<b>B</b>			<b>9.3</b>	<b>A</b>		<b>1978</b>	<b>21.3</b>	<b>C</b>			<b>17.3</b>	<b>B</b>	
Commercial Street	EB-L	15	4.5	A	0.03	2.5	10.2	B	9.3	19	5.5	A	0.06	3.2	23.2	C	14.6
	EB-T	554	11.4	B	0.51	97.7	8.4	A	61.1	763	21.3	C	0.77	201.9	16.8	B	118.3
	EB-R	18					6.6	A		48					14.1	B	
	WB-L	20	4.4	A	0.04	2.9	13.0	B	12.4	45	5.8	A	0.14	5.8	23.8	C	21.8
	WB-T	431	7.8	A	0.37	67.9	7.0	A	52.1	838	18.9	B	0.75	213.0	15.8	B	113.8
	WB-R	6					5.7	A		6					15.1	B	
Highbury Road	NB-L	45	29.0	C	0.52	25.8	25.2	C	30.5	46	31.7	C	0.51	27.8	28.2	C	29.4
	NB-T	20					23.5	C		31					27.2	C	
	NB-R	45					12.4	B		34					16.7	B	
	SB-L	28	22.8	C	0.44	21.5	23.1	C	24.9	59	33.8	C	0.61	34.6	26.1	C	32.9
	SB-T	24					23.1	C		29					26.0	C	
	SB-R	50					10.0	A		60					17.4	B	
<b>Commercial Street &amp; New Minas Connector Road</b>		<b>2027</b>	<b>2.8</b>	<b>A</b>			-	-		<b>2895</b>	<b>3.5</b>	<b>A</b>			-	-	
Commercial Street	EB-L	18	2.8	A	0.21	6.8	-	-	-	48	3.9	A	0.39	21.3	-	-	-
	EB-T	284					-	-	-	480					-	-	-
	EB-R	88					-	-	-	205					-	-	-
	WB-L	79	2.9	A	0.26	10.6	-	-	-	171	3.4	A	0.40	20.5	-	-	-
	WB-T	308					-	-	-	471					-	-	-
	WB-R	203					-	-	-	513					-	-	-
New Minas Connector Road	NB-L	260	2.8	A	0.30	12.9	-	-	-	153	3.0	A	0.28	11.4	-	-	-
	NB-T	169					-	-	-	151					-	-	-
	NB-R	88					-	-	-	108					-	-	-
Cornwallis River Crossing	SB-L	350	2.8	A	0.32	13.7	-	-	-	371	3.3	A	0.37	21.3	-	-	-
	SB-T	120					-	-	-	190					-	-	-
	SB-R	60					-	-	-	34					-	-	-
<b>New Minas Connector Road &amp; Prospect Road</b>		<b>1290</b>	<b>2.4</b>	<b>A</b>			-	-		<b>1819</b>	<b>2.7</b>	<b>A</b>			-	-	
Prospect Road	EB-L	21	4.2	A	0.10	3.8	-	-	-	16	5.3	A	0.16	3.8	-	-	-
	EB-T	44					-	-	-	55					-	-	-
	EB-R	23					-	-	-	46					-	-	-
	WB-L	143	2.6	A	0.16	3.8	-	-	-	325	2.9	A	0.29	10.6	-	-	-
	WB-T	24					-	-	-	54					-	-	-
	WB-R	69					-	-	-	78					-	-	-
New Minas Connector Road	NB-L	18	2.3	A	0.32	15.2	-	-	-	53	2.4	A	0.33	16.7	-	-	-
	NB-T	426					-	-	-	318					-	-	-
	NB-R	235					-	-	-	308					-	-	-
	SB-L	46	1.9	A	0.14	3.8	-	-	-	88	2.5	A	0.30	12.2	-	-	-
	SB-T	215					-	-	-	449					-	-	-
	SB-R	26					-	-	-	29					-	-	-





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Scenario 2B Growth with Improvements		Weekday AM Peak Hour								Weekday PM Peak Hour							
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>New Minas Connector Road &amp; Highway 101</b>		<b>1120</b>	<b>2.3</b>	<b>A</b>			-	-	-	<b>1544</b>	<b>2.3</b>	<b>A</b>			-	-	-
Highway 101 Westbound Off-Ramp	WB-L	10	3.6	A	0.01	3.8	-	-	-	26	3.7	A	0.03	3.8	-	-	-
	WB-R	256					-	-	-	264					-	-	-
New Minas Connector Road	NB-L	50	1.9	A	0.22	7.6	-	-	-	19	1.9	A	0.20	3.8	-	-	-
	NB-T	423					-	-	-	415					-	-	-
	SB-T	206	1.8	A	0.10	3.8	-	-	-	482	1.9	A	0.22	8.4	-	-	-
	SB-R	175					-	-	-	338					-	-	-
<b>New Minas Connector Road &amp; Highway 101</b>		<b>726</b>	<b>2.2</b>	<b>A</b>			-	-	-	<b>989</b>	<b>2.3</b>	<b>A</b>			-	-	-
Highway 101 Eastbound Off-Ramp	EB-L	256	2.3	A	0.16	3.8	-	-	-	293	2.9	A	0.22	9.1	-	-	-
	EB-R	18					-	-	-	36					-	-	-
New Minas Connector Road	NB-T	217	2.5	A	0.15	3.8	-	-	-	141	2.5	A	0.11	3.8	-	-	-
	NB-R	19					-	-	-	11					-	-	-
	SB-L	158	1.7	A	0.10	3.8	-	-	-	294	1.9	A	0.23	9.1	-	-	-
	SB-T	58					-	-	-	214					-	-	-
<b>New Canaan Road &amp; Highbury School Road</b>		<b>384</b>	<b>4.8</b>	<b>A</b>			<b>1.7</b>	<b>A</b>		<b>414</b>	<b>4.3</b>	<b>A</b>			<b>1.3</b>	<b>A</b>	
Highbury School Road	WB-L	66	9.8	A	0.16	4.6	5.2	A	19.7	6	9.6	A	0.10	2.3	5.5	A	14.1
	WB-R	126					3.2	A		71					2.7	A	
New Canaan Road	NB-T	110	0.0	A	-	-	0.7	A	0.0	81	0.0	A	-	-	0.5	A	0.0
	NB-R	6	0.0	A	-	-	0.1	A		6	0.0	A	-	-	0.1	A	
	SB-L	35	7.6	A	0.03	0.8	0.8	A	6.9	134	7.7	A	0.11	2.3	1.7	A	9.0
	SB-T	41	0.0	A	-	-	0.1	A	0.0	116	0.0	A	-	-	0.2	A	0.0



## 5.5 Scenario 3A Preferred Development Scenario Conditions

Scenario 3A is an assessment of future traffic operations with background traffic growth from Scenario 2 and the proposed development in the expansion lands.

The road network for this scenario includes:

- the proposed improvements from Scenario 2B
- the extension of Granite Drive south of Highway 101 with a roundabout intersection as the main access to the commercial area and a roundabout intersection with the Granite/Highbury Collector Road
- the Granite/Highbury Collector Road with a roundabout intersection on New Canaan Road
- Signal timing modifications at signalized intersections

Future traffic operations at the study intersections were evaluated during the weekday morning and afternoon peak one-hour period of traffic. The results of the analysis including delay, level of service, volume-to-capacity ratio and vehicle queuing are summarized in Table 16. The detailed Synchro and SimTraffic reports are included in Appendix A and the detailed Arcady reports are included in Appendix B.

With the full build-out of the expansion lands, eight of the study intersections are expected to experience operational deficiencies with one or more individual movements at these intersections experiencing longer delays and/or queues. The operations at the eight intersections with operational deficiencies are described below. All other intersections are expected to operate at acceptable levels of service (LOS D or better) during the weekday morning and afternoon peak hours.

**Commercial Street & Deep Hollow Road:** During the morning peak hour, while the overall unsignalized intersection is expected to operate at an acceptable level of service (LOS A), the northbound left and right movements on the Deep Hollow Road approach are expected to operate at LOS E.

During the afternoon peak hour, while the overall unsignalized intersection is expected to operate at an acceptable level of service (LOS A), the northbound left and right movements on the Deep Hollow Road approach are expected to operate at LOS F. Operations on the approach will be considered unacceptable.

**Recommended improvement:** Providing a separate left turn storage lane on the Deep Hollow Road approach will improve operations for the right turn movement. Operations for the left turn movement on Deep Hollow Road will continue to experience congestion, however, with the extension of Granite Drive and a connection to Forsythe Road, a proportion of the left turning traffic is expected to redistribute to Granite Drive.

**Commercial Street Silver Fox Avenue:** The signalized intersection is expected to operate at acceptable levels of service during both the morning and afternoon peak hours. While operations are expected to remain acceptable, the 95<sup>th</sup> percentile queue lengths indicate that significant queues may form on the eastbound approach, extending upwards of 100 metres during both peak hours

There is approximately 150 metres of storage from the eastbound stop bar at the signalized intersection to the start of the splitter island at the Commercial Street and Granite Drive roundabout. The analysis indicates that 95<sup>th</sup> percentile queue during the afternoon peak hour could extend to approximately 147 metres which would impact operations at the adjacent roundabout.



**Recommended improvement:** The intersection should be monitored as development occurs and the traffic signal timings modified as required to minimize queuing on Commercial Street. If significant queues materialize on the eastbound approach to the traffic signal and impact operations at the adjacent roundabout, converting the signalized intersection to a roundabout will be required to reduce queuing on the Commercial Street.

**Granite Drive & Highway 101 Westbound Ramps:** The roundabout is expected to operate at acceptable levels of service during both peak hours, however, the northbound approach (Granite Drive - from bridge) will experience significant queues that will spill back into the adjacent roundabout at the Eastbound Ramps.

**Recommended improvement:** Operations on the Granite Drive northbound approach from the overpass bridge can be improved by flaring to two lanes after the bridge. The current approach configuration appears wide enough to provide two entry lanes at the roundabout, minor modification may be required to provide two circulating lanes. With this improvement 95<sup>th</sup> percentile queues are expected to remain below 25 meters.

**Granite Drive & Highway 101 Eastbound Ramps:** During the morning peak hour, all movements at the roundabout are expected to operate at acceptable levels of service.

During the afternoon peak hour, the roundabout is expected to experience congestion (LOS E). The southbound movements (Granite Drive - from bridge) are expected to be over capacity and experience severe congestion (LOS F). The approach will experience significant queues that will spill back into the adjacent roundabout at the Westbound Ramps

**Recommended improvement:** Operations on the Granite Drive southbound approach from the overpass bridge can be improved by flaring to two lanes after the bridge. The current approach configuration appears wide enough to provide two entry lanes at the roundabout, minor modification may be required to provide two circulating lanes. With this improvement 95<sup>th</sup> percentile queues are expected to remain below 30 meters.

**Commercial Street:** The SimTraffic analysis which detects influences between intersections, indicates that during the afternoon peak hour the westbound movements on Commercial Street will experience severe congestion (LOS F) and westbound queues at the Prospect Road traffic signal will extend into adjacent intersections creating gridlock from Prospect Road to Granite Drive.

**Commercial Street & Prospect Road:** During the morning peak hour, all movements at the signalized intersection are expected to operate at acceptable levels of service.

During the afternoon peak hour, while the overall intersection is expected to operate at an acceptable level of service, the westbound left movement on Commercial Street is expected to operate at LOS E with volumes approaching capacity and the southbound left movement is expected to operate at LOS F with volumes approaching capacity. The volume of the eastbound through movement will reach capacity and significant queues are expected on the eastbound approach.

**Recommended improvement:** The intersection experiences operational issues and creates major gridlock in the westbound direction on Commercial Street. Converting the signalized intersection to a multi-lane roundabout will improve operations to acceptable levels of service reduce queuing on Commercial Street.



**Commercial Street & Jones Road:** The unsignalized intersection is expected to operate at acceptable levels of service during both peak hours, however, the southbound left movement on the Jones Road approach is expected to experience severe congestion (LOS F) during both peak hours.

**Recommended improvement:** There is no recommended improvement at the intersection. Reduce traffic volumes on Jones Road approach through alternative route connection to Commercial Street at Valley View Drive

**Commercial Street & Valley View Drive:** The signalized intersection is expected to operate at acceptable levels of service during the morning peak hour.

During the afternoon peak hour, while the overall intersection is expected to operate at an acceptable level of service, the northbound left movement on the Valley View Drive approach is expected to operate at LOS E with volumes approaching capacity. The volume of the eastbound through movement is also approaching capacity and significant queues are expected on the eastbound approach (Commercial Street) extending to the Jones Road Intersection.

**Recommended improvement:** The intersection experiences operational issues and creates gridlock in both directions on Commercial Street. Converting the signalized intersection to a multi-lane roundabout will improve operations to acceptable levels of service reduce queuing on Commercial Street. The roundabout should include a new road connection from the residential neighbourhood to the north of Commercial Street to alleviate traffic volumes on Jones Road and Cornwallis Avenue and increase connectivity in the road network.

**Commercial Street & Cornwallis Avenue:** The signalized intersection is expected to operate at acceptable levels of service during both the morning and afternoon peak hours. While operations are expected to remain acceptable, the 95<sup>th</sup> percentile queue lengths indicate that significant queues may form on the westbound approach (Commercial Street), extending upwards of 150 metres during both peak hours

There is approximately 130 metres of storage from the westbound stop bar at the signalized intersection to the crosswalk at the Commercial Street and Granite Drive roundabout. The analysis indicates that 95<sup>th</sup> percentile queue both peak hours are expected to impact operations at the adjacent roundabout.

**Recommended improvement:** Reduce traffic volumes on Cornwallis Avenue approach through alternative route connection to Commercial Street at Valley View Drive. Convert intersection to right-in right, right-out access.



Table 16: Scenario 3 intersection analysis results

Scenario 3 Full-Build Out of Development		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady			SimTraffic			Volume (veh/hr)	Synchro/Arcady			SimTraffic				
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS		95th% Queue (m)	Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Deep Hollow Road</b>		<b>535</b>	<b>3.6</b>	<b>A</b>			<b>4.3</b>	<b>A</b>		<b>849</b>	<b>8.7</b>	<b>A</b>			<b>6.0</b>	<b>A</b>	
Commercial Street	EB-T	581	0.0	A	-	-	4.8	A	3.1	700	0.0	A	-	-	6.0	A	3.1
	EB-R	46	0.0	A	-	-	4.4	A		88	0.0	A	-	-	5.6	A	
	WB-L	15	9.2	A	0.02	0.8	5.3	A	16.7	35	10.1	B	0.05	1.5	8.5	A	56.0
	WB-T	407	0.0	A	-	-	0.7	A		717	0.0	A	-	-	2.6	A	
Deep Hollow Road	NB-L	80					15.7	C	26.5	69					35.9	E	30.4
	NB-R	33	35.7	E	0.53	21.3	9.0	A		28	143.7	F	0.96	46.4	19.6	C	
<b>Commercial Street &amp; Silver Fox Avenue</b>		<b>1634</b>	<b>8.8</b>	<b>A</b>			<b>8.0</b>	<b>A</b>		<b>2269</b>	<b>18.0</b>	<b>B</b>			<b>15.7</b>	<b>B</b>	
Commercial Street	EB-L	11	6.1	A	0.02	2.5	11.7	B	8.7	20	11.3	B	0.08	5.5	31.4	C	17.2
	EB-T	704	10.7	B	0.58	105.2	6.7	A	75.7	744	19.2	B	0.70	146.7	13.1	B	105.4
	EB-R	66	1.5	A	0.06	3.8	2.9	A	16.4	163	2.2	A	0.17	8.6	3.3	A	28.5
	WB-L	69	3.3	A	0.17	5.3	12.7	B	19.9	98	8.2	A	0.31	11.3	21.7	C	45.3
	WB-T	622					8.1	A		838					16.9	B	
	WB-R	6	4.9	A	0.46	55.4	7.9	A	51.5	9	14.1	B	0.70	140.2	13.1	B	110.1
Silver Fox Avenue	NB-L	38					29.9	C		211					34.0	C	
	NB-T	6	38.0	D	0.34	16.2	32.9	C	19.9	8	53.5	D	0.80	65.3	41.7	D	58.3
	NB-R	66	11.9	B	0.32	10.2	2.1	A	0.0	151	6.9	A	0.34	14.0	2.4	A	5.5
Bonavista Avenue	SB-L	6					32.4	C		8					26.4	C	
	SB-T	10	19.7	B	0.26	11.7	28.2	C	18.3	6	18.3	B	0.08	8.1	22.5	C	12.8
	SB-R	30					9.0	A		13					11.7	B	
<b>Commercial Street &amp; Granite Drive</b>		<b>2139</b>	<b>3.0</b>	<b>A</b>			-	-		<b>2947</b>	<b>3.9</b>	<b>A</b>			-	-	
Commercial Street	EB-L	20					-	-	-	28					-	-	-
	EB-T	463	2.2	A	0.24	9.9	-	-	-	679	2.9	A	0.39	21.3	-	-	-
	EB-R	231					-	-	-	514					-	-	-
	WB-L	175					-	-	-	374					-	-	-
	WB-T	450	3.0	A	0.37	20.5	-	-	-	656	4.4	A	0.58	13.7	-	-	-
	WB-R	6					-	-	-	8					-	-	-
Granite Drive	NB-L	464					-	-	-	358					-	-	-
	NB-T	6	3.5	A	0.45	16.7	-	-	-	6	3.5	A	0.39	22.0	-	-	-
	NB-R	299					-	-	-	239					-	-	-
Old Dyke Road	SB-L	6					-	-	-	21					-	-	-
	SB-T	6	7.3	A	0.05	3.8	-	-	-	21	14.4	B	0.27	11.4	-	-	-
	SB-R	13					-	-	-	43					-	-	-





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Scenario 3 Full-Build Out of Development		Weekday AM Peak Hour								Weekday PM Peak Hour							
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Granite Drive &amp; Silver Fox Avenue/County Fair</b>		<b>1581</b>	<b>4.2</b>	<b>A</b>			-	-	-	<b>2179</b>	<b>4.3</b>	<b>A</b>			-	-	-
County Fair Mall	EB-L	6	4.3	A	0.08	3.8	-	-	-	13	9.2	A	0.37	20.5	-	-	-
	EB-T	19					-	-	-	20					-	-	-
	EB-R	39					-	-	-	166					-	-	-
	EB-HR	6					-	-	-	6					-	-	-
Silver Fox Avenue	WB-L	64	6.0	A	0.14	3.8	-	-	-	160	6.2	A	0.27	9.1	-	-	-
	WB-BL	6					-	-	-	6					-	-	-
	WB-T	13					-	-	-	24					-	-	-
	WB-R	6					-	-	-	6					-	-	-
Old Granite Drive	NEB-HL	6	4.3	A	0.04	3.8	-	-	-	6	7.6	A	0.07	3.8	-	-	-
	NEB-L	6					-	-	-	6					-	-	-
	NEB-T	6					-	-	-	6					-	-	-
	NEB-R	14					-	-	-	14					-	-	-
Granite Drive	NB-HL	13	4.8	A	0.59	14.4	-	-	-	11	3.6	A	0.48	10.6	-	-	-
	NB-L	89					-	-	-	133					-	-	-
	NB-T	756					-	-	-	580					-	-	-
	NB-R	119					-	-	-	100					-	-	-
	SB-L	6	2.3	A	0.22	9.1	-	-	-	11	3.4	A	0.49	11.4	-	-	-
	SB-T	395					-	-	-	897					-	-	-
	SB-R	6					-	-	-	6					-	-	-
	SB-HR	6					-	-	-	8					-	-	-
<b>Granite Drive &amp; Highway 101 Westbound Ramps</b>		<b>1787</b>	<b>18.9</b>	<b>C</b>			-	-	-	<b>2459</b>	<b>8.2</b>	<b>A</b>			-	-	-
Highway 101 Westbound Off-Ramp	WB-L	91	6.2	A	0.15	3.8	-	-	-	186	6.5	A	0.27	7.6	-	-	-
	WB-R	125					-	-	-	133					-	-	-
Granite Drive	NB-L	208	29.9	D	0.91	372.4	-	-	-	220	13.2	B	0.78	121.6	-	-	-
	NB-T	851					-	-	-	688					-	-	-
	SB-T	430	2.4	A	0.27	11.4	-	-	-	1010	4.9	A	0.65	24.3	-	-	-
	SB-R	82					-	-	-	222					-	-	-
<b>Granite Drive &amp; Highway 101 Eastbound Ramps</b>		<b>1911</b>	<b>4.1</b>	<b>A</b>			-	-	-	<b>2510</b>	<b>47.2</b>	<b>E</b>			-	-	-
Highway 101 Eastbound Off-Ramp	EB-L	114	4.4	A	0.13	3.8	-	-	-	153	8.0	A	0.27	8.4	-	-	-
	EB-R	177					-	-	-	278					-	-	-
Granite Drive	NB-T	945	3.5	A	0.54	11.4	-	-	-	755	3.1	A	0.45	14.4	-	-	-
	NB-R	154					-	-	-	128					-	-	-
	SB-L	101	5.3	A	0.46	14.4	-	-	-	188	93.9	F	1.03	764.6	-	-	-
	SB-T	420					-	-	-	1008					-	-	-



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Scenario 3 Full-Build Out of Development		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Cornwallis Avenue</b>		<b>1753</b>	<b>10.5</b>	<b>B</b>			<b>8.7</b>	<b>A</b>		<b>2510</b>	<b>17.1</b>	<b>B</b>			<b>23.5</b>	<b>C</b>	
Commercial Street	EB-L	11	9.3	A	0.04	3.6	23.0	C	9.0	25	13.9	B	0.15	7.9	47.2	D	18.6
	EB-T	641					6.0	A	32.9	1091					17.4	B	134.5
	EB-R	18	7.5	A	0.28	44.4	4.9	A	32.5	23	15.1	B	0.62	103.8	14.3	B	52.0
	WB-L	23	4.2	A	0.04	3.2	6.8	A	35.6	94	7.9	A	0.33	11.5	18.5	B	154.8
	WB-T	898					8.4	A	92.2	916					31.2	C	157.5
	WB-R	28	9.8	A	0.68	141.4	5.9	A		29	15.9	B	0.80	226.5	28.0	C	
County Fair Mall	NB-L	16					26.9	C		80					30.8	C	
	NB-T	6	29.3	C	0.11	9.0	24.7	C	8.3	18	38.3	D	0.51	29.6	28.6	C	26.6
	NB-R	18	0.4	A	0.06	0.0	4.5	A	5.1	99	8.4	A	0.31	12.1	7.5	A	18.5
Cornwallis Avenue	SB-L	73					29.1	C		85					29.9	C	
	SB-T	8	38.1	D	0.53	26.6	37.0	D	30.6	24	40.6	D	0.64	37.0	30.3	C	34.4
	SB-R	13					21.5	C		26					26.8	C	
<b>Commercial Street &amp; Valley View Drive</b>		<b>1016</b>	<b>10.2</b>	<b>B</b>			<b>7.7</b>	<b>A</b>		<b>1294</b>	<b>24.8</b>	<b>C</b>			<b>35.9</b>	<b>D</b>	
Commercial Street	EB-T	682	8.7	A	0.53	126.4	5.0	A	57.7	1051	27.9	C	0.90	279.3	20.0	B	193.7
	EB-R	64	2.3	A	0.06	5.6	3.0	A	19.5	206	3.9	A	0.20	15.9	14.8	B	63.9
	WB-L	11	3.5	A	0.02	1.8	12.0	B	10.4	18	4.9	A	0.09	2.6	60.5	E	22.0
	WB-T	911	9.0	A	0.67	135.9	8.0	A	81.3	1009	15.3	B	0.79	164.7	48.0	D	296.5
Valley View Drive	NB-L	83	41.9	D	0.44	27.7	31.7	C	27.9	251	69.6	E	0.89	86.1	73.1	E	76.7
	NB-R	11	17.7	B	0.06	4.6	7.9	A	5.5	16	15.2	B	0.06	5.5	25.8	C	22.2
<b>Commercial Street &amp; Jones Road</b>		<b>1110</b>	<b>3.6</b>	<b>A</b>			<b>8.7</b>	<b>A</b>		<b>1300</b>	<b>2.4</b>	<b>A</b>			<b>43.0</b>	<b>E</b>	
Commercial Street	EB-L	103	11.7	B	0.18	4.6	16.5	C	22.3	29	12.9	B	0.07	1.5	37.9	E	17.0
	EB-T	762	0.0	A	-	-	3.8	A	15.8	1203	0.0	A	-	-	6.3	A	27.4
	WB-T	849	0.0	A	-	-	4.0	A		1111	0.0	A	-	-	38.5	E	
	WB-R	99	0.0	A	-	-	3.1	A	12.8	90	0.0	A	-	-	38.1	E	287.8
Jones Road	SB-L	76	50.2	F	0.53	19.8	95.3	F	30.4	54	76.8	F	0.58	21.3	854.0	F	35.3
	SB-R	86	24.1	C	0.34	11.4	29.7	D	68.6	45	32.6	D	0.29	8.4	593.9	F	136.9
<b>Commercial Street &amp; Prospect Road</b>		<b>1975</b>	<b>15.6</b>	<b>B</b>			<b>16.8</b>	<b>B</b>		<b>2490</b>	<b>37.3</b>	<b>D</b>			<b>65.1</b>	<b>E</b>	
Commercial Street	EB-L	25	9.8	A	0.07	6.4	27.2	C	19.0	9	12.9	B	0.06	3.7	54.1	D	12.9
	EB-T	725					18.3	B		845					37.4	D	
	EB-R	20	20.7	C	0.77	187.9	15.0	B	123.4	25	52.0	D	0.99	273.8	38.5	D	272.3
	WB-L	120	7.6	A	0.40	13.1	20.7	C	29.8	234	69.8	E	0.94	82.6	112.1	F	31.2
	WB-T	686					9.7	A		931					87.8	F	
	WB-R	6	7.8	A	0.57	95.8	10.4	B	88.1	8	16.2	B	0.81	171.6	91.5	F	447.8
Prospect Road	NB-L	64	38.1	D	0.39	21.7	38.3	D	30.5	60	43.5	D	0.30	25.3	52.5	D	40.5
	NB-T	19	12.4	B	0.62	21.9	34.9	C	50.6	24	12.5	B	0.61	25.8	52.3	D	83.4
	NB-R	220					20.1	C		244					35.0	C	
Driveway	SB-L	41	53.8	D	0.52	17.0	48.1	D	24.5	56	149.2	F	0.97	38.9	172.3	F	57.1
	SB-T	30	23.1	C	0.21	13.9	29.6	C	21.3	33	27.4	C	0.20	17.6	38.2	D	24.4
	SB-R	19					12.1	B		21					18.7	B	



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Scenario 3 Full-Build Out of Development		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>Commercial Street &amp; Highbury Road</b>		<b>1545</b>	<b>14.6</b>	<b>B</b>			<b>11.0</b>	<b>B</b>		<b>2189</b>	<b>23.8</b>	<b>C</b>			<b>19.9</b>	<b>B</b>	
Commercial Street	EB-L	15	4.7	A	0.03	2.6	14.9	B	14.1	19	5.7	A	0.08	3.5	25.4	C	14.5
	EB-T	739					11.4	B		848					16.7	B	
	EB-R	18	15.6	B	0.68	173.9	9.1	A	83.6	48	22.8	C	0.81	249.7	13.7	B	120.3
	WB-L	20	4.6	A	0.05	3.0	15.1	B	11.8	50	6.5	A	0.18	6.8	30.2	C	20.8
	WB-T	520					7.9	A		944					20.3	C	
	WB-R	6	8.8	A	0.44	87.7	9.2	A	60.3	6	21.4	C	0.81	270.4	17.7	B	163.8
Highbury Road	NB-L	45					26.7	C		46					30.8	C	
	NB-T	20	28.2	C	0.54	26.8	24.1	C	31.7	31	36.2	D	0.55	33.3	29.6	C	31.4
	NB-R	55					15.5	B		44					20.2	C	
	SB-L	33					26.4	C		64					30.3	C	
	SB-T	24	24.9	C	0.48	23.3	25.1	C	26.3	29	42.5	D	0.67	41.6	32.3	C	40.7
	SB-R	50					11.3	B		60					21.8	C	
<b>Commercial Street &amp; New Minas Connector Road</b>		<b>2945</b>	<b>4.7</b>	<b>A</b>			-	-		<b>4066</b>	<b>5.6</b>	<b>A</b>			-	-	
Commercial Street	EB-L	18					-	-	-	48					-	-	-
	EB-T	284	3.1	A	0.22	9.1	-	-	-	480	5.3	A	0.46	22.0	-	-	-
	EB-R	236					-	-	-	548					-	-	-
	WB-L	117					-	-	-	295					-	-	-
	WB-T	308	4.3	A	0.36	19.8	-	-	-	471	5.5	A	0.56	11.4	-	-	-
	WB-R	203					-	-	-	513					-	-	-
New Minas Connector Road	NB-L	562					-	-	-	380					-	-	-
	NB-T	371	6.0	A	0.68	27.4	-	-	-	303	5.4	A	0.59	12.9	-	-	-
	NB-R	220					-	-	-	202					-	-	-
Cornwallis River Crossing	SB-L	350					-	-	-	371					-	-	-
	SB-T	216	4.0	A	0.43	22.0	-	-	-	421	6.3	A	0.61	13.7	-	-	-
	SB-R	60					-	-	-	34					-	-	-
<b>New Minas Connector Road &amp; Prospect Road</b>		<b>2350</b>	<b>4.2</b>	<b>A</b>			-	-		<b>3165</b>	<b>5.2</b>	<b>A</b>			-	-	
Prospect Road	EB-L	21					-	-	-	16					-	-	-
	EB-T	44	5.1	A	0.12	3.8	-	-	-	55	14.7	B	0.35	15.2	-	-	-
	EB-R	23					-	-	-	46					-	-	-
	WB-L	186					-	-	-	431					-	-	-
	WB-T	24	4.0	A	0.25	10.6	-	-	-	54	4.4	A	0.43	21.3	-	-	-
	WB-R	69					-	-	-	78					-	-	-
New Minas Connector Road	NB-L	18					-	-	-	53					-	-	-
	NB-T	1062	4.9	A	0.68	32.7	-	-	-	791	4.0	A	0.60	16.7	-	-	-
	NB-R	334					-	-	-	377					-	-	-
	SB-L	46					-	-	-	88					-	-	-
	SB-T	497	2.3	A	0.29	9.9	-	-	-	1147	5.9	A	0.70	31.9	-	-	-
	SB-R	26					-	-	-	29					-	-	-



New Minas Transportation Study  
Phase 2 Scenarios and Recommendations

Scenario 3 Full-Build Out of Development		Weekday AM Peak Hour							Weekday PM Peak Hour								
Intersection		Volume (veh/hr)	Synchro/Arcady				SimTraffic			Volume (veh/hr)	Synchro/Arcady				SimTraffic		
			Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)		Delay (s/veh)	LOS	v/c	95th% Queue (m)	Delay (s/veh)	LOS	95th% Queue (m)
<b>New Minas Connector Road &amp; Highway 101</b>		<b>2285</b>	<b>3.6</b>	<b>A</b>			-	-	-	<b>3018</b>	<b>3.9</b>	<b>A</b>			-	-	-
Highway 101 Westbound Off-Ramp	WB-L	54	6.6	A	0.10	3.8	-	-	-	108	5.8	A	0.16	3.8	-	-	-
	WB-R	300					-	-	-	338					-	-	-
New Minas Connector Road	NB-L	111	3.5	A	0.57	13.7	-	-	-	65	2.7	A	0.44	15.2	-	-	-
	NB-T	1114					-	-	-	883					-	-	-
	SB-T	531	2.2	A	0.26	10.6	-	-	-	1286	4.2	A	0.62	20.5	-	-	-
	SB-R	175					-	-	-	338					-	-	-
<b>New Minas Connector Road &amp; Highway 101</b>		<b>1936</b>	<b>5.2</b>	<b>A</b>			-	-	-	<b>2501</b>	<b>4.6</b>	<b>A</b>			-	-	-
Highway 101 Eastbound Off-Ramp	EB-L	256	2.9	A	0.21	7.6	-	-	-	293	6.1	A	0.43	25.1	-	-	-
	EB-R	49					-	-	-	106					-	-	-
New Minas Connector Road	NB-T	969	7.6	A	0.71	31.9	-	-	-	655	4.8	A	0.51	12.2	-	-	-
	NB-R	77					-	-	-	53					-	-	-
	SB-L	232	2.1	A	0.27	11.4	-	-	-	372	4.1	A	0.64	24.3	-	-	-
	SB-T	353					-	-	-	1022					-	-	-
<b>New Canaan Road &amp; Collector Road</b>		<b>1553</b>	<b>3.3</b>	<b>A</b>			-	-	-	<b>1957</b>	<b>3.9</b>	<b>A</b>			-	-	-
Collector Road	WB-L	67	3.5	A	0.07	3.8	-	-	-	45	3.3	A	0.04	3.8	-	-	-
	WB-R	786					-	-	-	508					-	-	-
New Canaan Road	NB-T	260	4.6	A	0.30	12.9	-	-	-	200	7.6	A	0.39	22.0	-	-	-
	NB-R	38					-	-	-	76					-	-	-
	SB-L	257	1.9	A	0.19	3.8	-	-	-	841	3.3	A	0.53	11.4	-	-	-
	SB-T	145					-	-	-	287					-	-	-
<b>Granite Drive &amp; Commercial Development</b>		<b>1812</b>	<b>3.1</b>	<b>A</b>			-	-	-	<b>2296</b>	<b>4.6</b>	<b>A</b>			-	-	-
Commercial Development	EB-L	261	4.7	A	0.30	12.9	-	-	-	288	10.5	B	0.55	26.6	-	-	-
	EB-T	5					-	-	-	5					-	-	-
	EB-R	25					-	-	-	81					-	-	-
Residential Development	WB-L	5	6.2	A	0.03	3.8	-	-	-	5	5.0	A	0.04	3.8	-	-	-
	WB-T	5					-	-	-	5					-	-	-
	WB-R	5					-	-	-	5					-	-	-
Granite Drive	NB-L	68	3.2	A	0.47	12.2	-	-	-	37	2.5	A	0.32	14.4	-	-	-
	NB-T	836					-	-	-	579					-	-	-
	NB-R	5					-	-	-	5					-	-	-
	SB-L	9	2.2	A	0.29	9.9	-	-	-	10	4.0	A	0.61	19.8	-	-	-
	SB-T	288					-	-	-	869					-	-	-
	SB-R	300					-	-	-	407					-	-	-
<b>Granite Drive &amp; Collector Road</b>		<b>1334</b>	<b>7.4</b>	<b>A</b>			-	-	-	<b>1712</b>	<b>4.8</b>	<b>A</b>			-	-	-
Collector Road	EB-L	690	9.5	A	0.68	37.2	-	-	-	458	6.6	A	0.52	12.9	-	-	-
	EB-R	58					-	-	-	71					-	-	-
Granite Drive	NB-L	57	6.4	A	0.35	18.2	-	-	-	73	4.9	A	0.26	11.4	-	-	-
	NB-T	215					-	-	-	159					-	-	-
	SB-T	86	3.2	A	0.08	3.8	-	-	-	727	3.7	A	0.20	8.4	-	-	-
	SB-R	228					-	-	-	224					-	-	-



## 6 Expansion Lands Transportation Network

### 6.1 Final Conceptual Transportation Network

The conceptual transportation network for the preferred development scenario is shown in Figure 5.

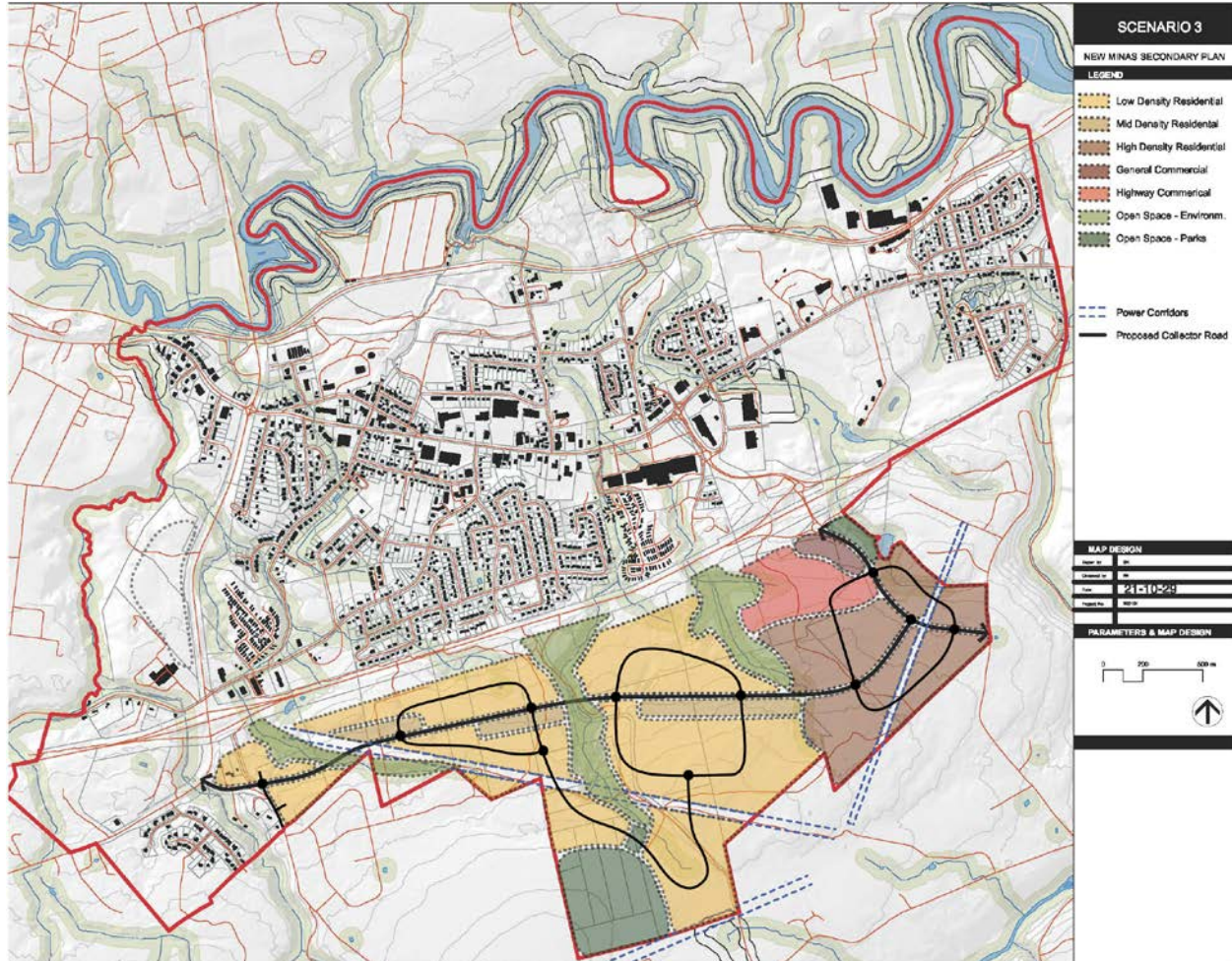


Figure 5: Conceptual transportation network for the preferred development scenario

#### 6.1.1 Granite Drive Extension

The proposed cross section for the Granite Drive Extension between the Highway 101 Interchange and the Granite/Highbury Collector Road consists of two travel lanes in each direction separated by a raised centreline median with a multi-use-path on one side and sidewalk on the other side. The recommended cross section is shown in Figure 6.

South of the Granite/Highbury Collector Road the Granite Drive Extension cross section can be reduced to one travel lane in each direction separated by a raised centreline median with a multi-use-path on one side and sidewalk on the other side.



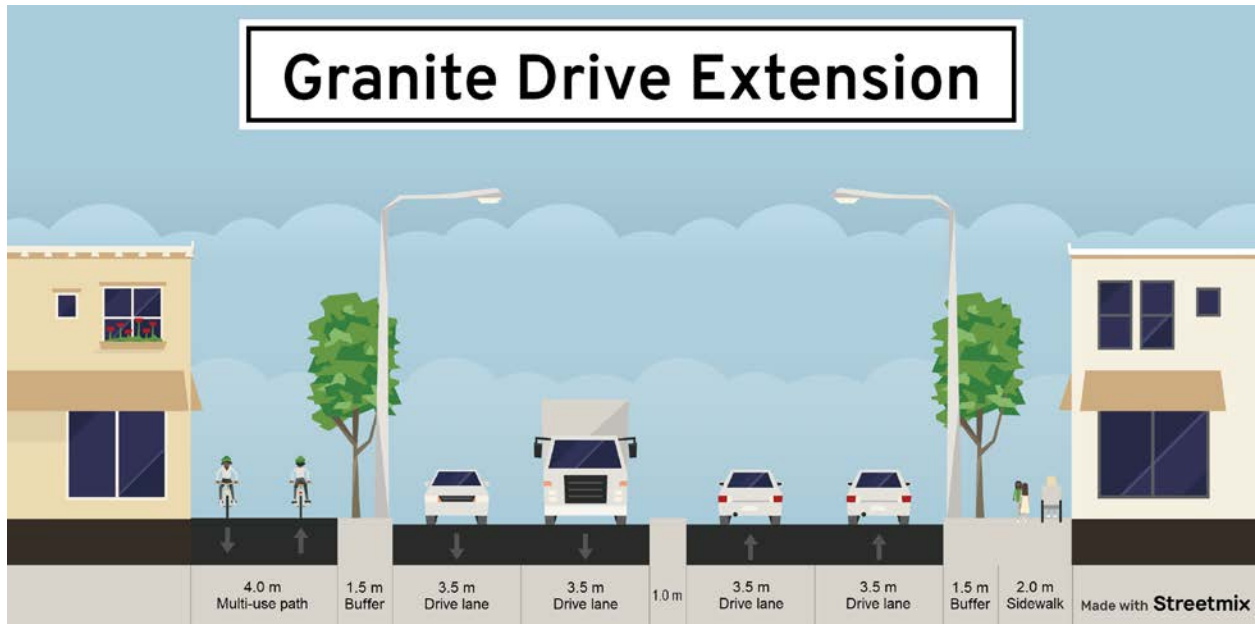


Figure 6: Granite Drive Extension cross section

### 6.1.2 Granite/Highbury Collector Roadway

The recommended cross section for the Granite/Highbury Collector Road consists of one travel lane in each direction separated by a raised centreline median with a multi-use path on one side and sidewalk on the other side. The recommended cross section is shown in Figure 7.



Figure 7: Granite/Highbury Collector Road cross section



The Granite/Highbury Collector Road will have limited direct access to development parcels, its primary role will be to move traffic. It is recommended that each development area be accessed through a minimum of two fully directional access points, consisting of single-lane roundabouts. A raised centre line median is recommended to restrict any additional access points between the roundabouts to right-in, right-out access control. In each development area, the two roundabout access points should be connected through a secondary collector roadway which will form the backbone of the local roadway network in the area.

## 6.2 Priorities and Phasing

The preferred development scenario will include three phases, the proposed phasing plan is shown in Figure 8. A prioritized phasing plan for the expansion lands transportation network was developed to ensure that the transportation network is strategically implemented as development demands occur.

Class "D" cost estimates were developed for the transportation network. **The cost estimates do not include allowances for inflation, engineering, property acquisitions, utility pole relocations or harmonized sales tax (HST).** The preliminary design of improvements should be completed to refine the cost estimates before using the cost estimates for the capital works budget. Summaries of the transportation network components and associated costs for each phase are provided in the following sections.

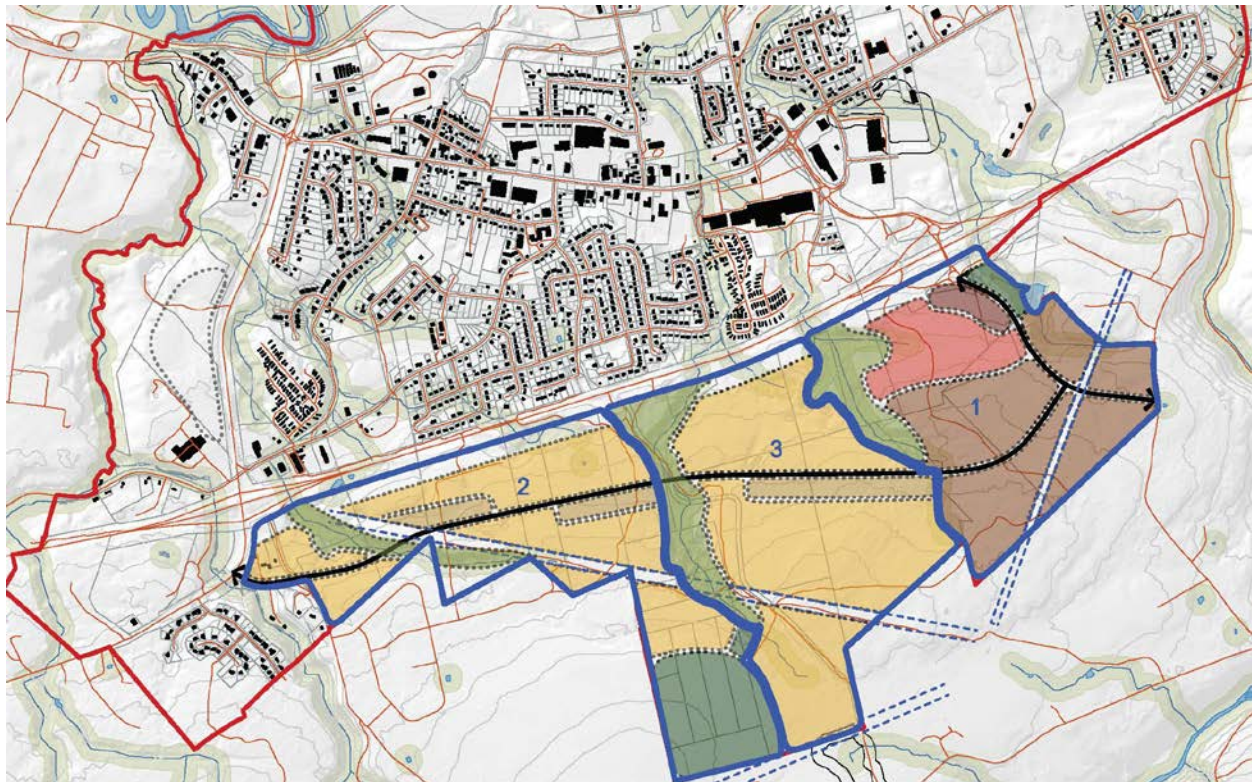


Figure 8: Preferred development scenario phasing plan

### 6.2.1 Phase 1 High Density Residential and Commercial near Granite Drive

The Phase 1 transportation network components are summarized in Table 17. The total cost of the Phase 1 transportation network is estimated at approximately \$11,650,000 plus HST. It should be noted that this cost does not include internal roadways on each development parcel.



Table 17: Phase 1 transportation network

Project	Description	Estimated Cost
Granite Drive Extension to Granite/Highbury Collector Road	4-lane roadway from interchange to Granite/Highbury Collector Road Includes 1 roundabout access to development.	\$3,200,000.00
Granite Drive & Granite/Highbury Collector Road intersection	Multi-lane roundabout	\$2,000,000.00
Granite/Highbury Collector Road	2-lane roadway from Granite Drive to Phase 3. Includes 1 roundabout access to development parcels.	\$3,700,000.00
Granite Drive Connection to Forsythe Road	2-lane roadway from Granite/Highbury Collector Road to Forsythe Road. Includes 1 roundabout access to development parcels.	\$2,750,000.00
<b>Total</b>		<b>\$11,650,000.00</b>

### 6.2.2 Phase 2 Low and Mid Density Residential near New Canaan Road

The Phase 2 transportation network components are summarized in Table 18. The total cost of the Phase 2 transportation network is estimated at approximately \$9,600,000 plus HST.

Table 18: Phase 2 transportation network

Project	Description	Estimated Cost
New Canaan Road & Granite/Highbury Collector Road Intersection	Multi-lane roundabout	\$2,000,000.00
Granite/Highbury Collector Road	2-lane roadway from New Canaan Road to Phase 2. Includes new roundabout intersection with Highbury School Road and 2 roundabout accesses to development parcels.	\$7,600,000.00
<b>Total</b>		<b>\$9,600,000.00</b>

### 6.2.3 Phase 3 - Low and Mid Density Residential in Central Area

The Phase 3 transportation network components are summarized in Table 19. The total cost of the Phase 3 transportation network is estimated at approximately \$6,600,000 plus HST.

Table 19: Phase 3 transportation network

Project	Description	Estimated Cost
Granite/Highbury Collector Road	2-lane roadway connection between Phase 1 and Phase 2. Includes 2 roundabout accesses to development parcels.	\$6,500,000.00
Granite Drive Interchange	Modifications to roundabout approaches from overpass bridge	\$100,000.00
<b>Total</b>		<b>\$6,600,000.00</b>



## 7 Existing Transportation Network Improvements

### 7.1 Recommended Improvements

#### 7.1.1 Commercial Street & New Minas Connector Road

The intersection of Commercial Street and the New Minas Connector Road experiences operational issues under existing and background growth conditions. In addition to operational issues, this intersection is the intersection with the highest number of collisions in New Minas. The higher speeds on the New Minas Connector Road and the close proximity of a number of commercial access points on Commercial Street are potential contributing factors to the high number of collisions at the intersection. The intersection also has pedestrian accessibility and safety deficiencies which would require a complete redesign of the intersection to improve.

Due to safety concerns and significant growth expected at the intersection, converting the signalized intersection to a roundabout was considered as the preferred improvement alternative for the intersection of Commercial Street and the New Minas Connector Road. Converting the signalized intersection roundabout will also provide an opportunity to improve access management in the immediate vicinity of the intersection.

Multiple studies have indicated that roundabouts reduce collisions at intersections where stop signs or traffic signals were previously used. Studies by the Insurance Institute for Highway Safety (IIHS) and the Federal Highway Administration (FHWA) have shown that roundabouts typically result in reductions in overall collisions, reductions in injury collisions, reduction in fatality collisions and reductions in pedestrian collisions.

Roundabouts reduce collisions by forcing vehicles to travel at slower speeds and reducing the number of potential conflict points between vehicles and vehicles and vehicles and pedestrians at the intersection as shown in Figure 9.

Roundabouts reduce delay and improve traffic flow at intersections. Roundabouts promote the flow of traffic, where motorists are not always required to stop to get through the intersection resulting in less congestion on approach roads. Before and after studies by the IIHS have shown that roundabouts can reduce delays by 89 percent and vehicle stops by 56 percent.

Roundabouts provide significant safety benefits, improve traffic flow, reduce vehicle emissions, act as a means of traffic calming, and provide a more aesthetically pleasing solution. Looking at the initial estimated costs of construction, a roundabout can often be more expensive. However, with the limited operation and maintenance costs throughout the life cycle of a roundabout, and the societal costs associated with injuries, fatalities and property damage, the long-term benefits of roundabouts typically outweigh the cost at most intersections.



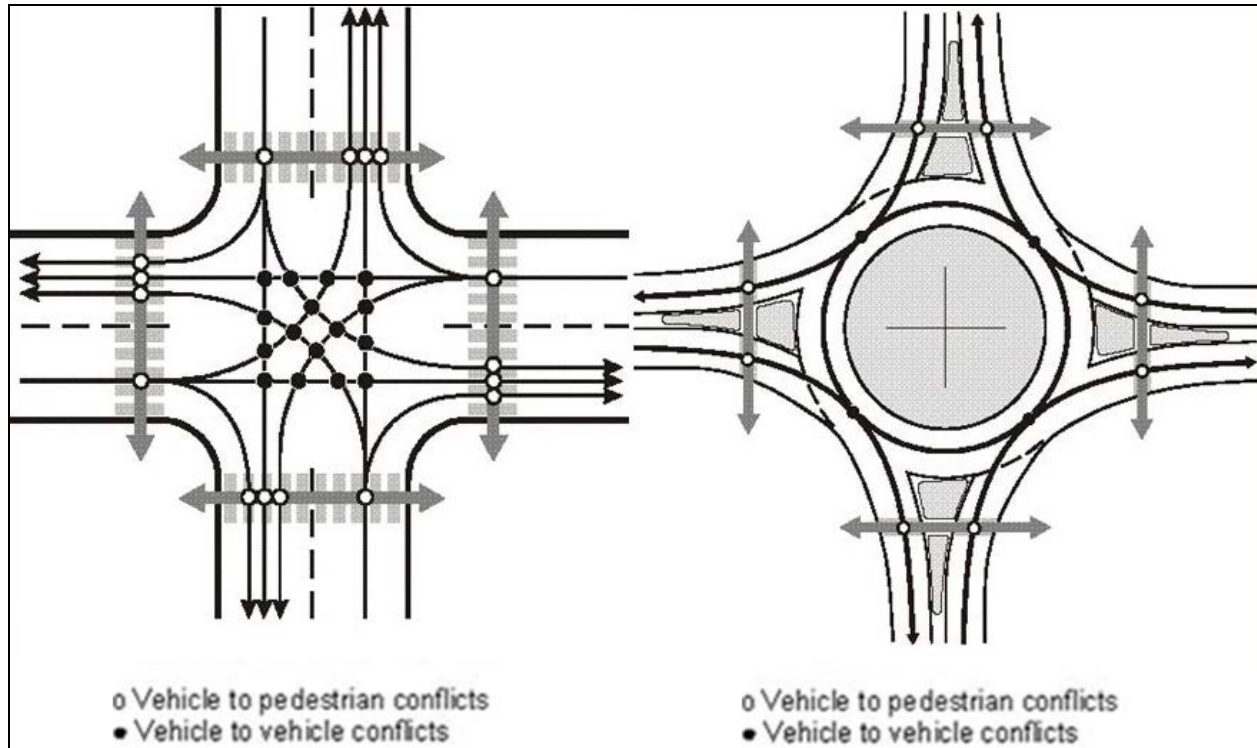


Figure 9: Comparison of conflict points at intersections vs. roundabouts

It is recommended that the intersection of Commercial Street and the New Minas Connector Road be upgraded to roundabout. The projected development traffic volumes can be accommodated by a multi-lane roundabout with right turn by-pass lanes on Commercial Street. The concept plan for the roundabout is shown in Figure 10; a full-size drawing can be found in Appendix D.

### 7.1.2 New Minas Connector Road and Highway 101 Interchange

The New Minas Connector Road interchange area includes three closely spaced intersections: the two unsignalized ramp terminals the signalized intersection of the New Minas Connector Road and Prospect Road. There is approximately 100 metres of storage between the two highway ramp terminals and less than 50 metres between the signalized intersection and the westbound highway ramps.

The Highway 101 Eastbound off-ramp experiences operational issues under existing and background growth conditions. Northbound queues at the signal are expected to extend past the highway and impact traffic operations at the interchange.

It is recommended that the Highway 101 Eastbound Ramps intersection be upgraded to a roundabout and that the Highway 101 Westbound Ramps and Prospect Road intersection be combined into one six-legged roundabout due to the close proximity of the two intersections. The projected development traffic volumes can be accommodated by multi-lane roundabouts with two lane entries on all approaches. The concept plan for the roundabouts is shown in Figure 11, a full-size drawing can be found in Appendix D.



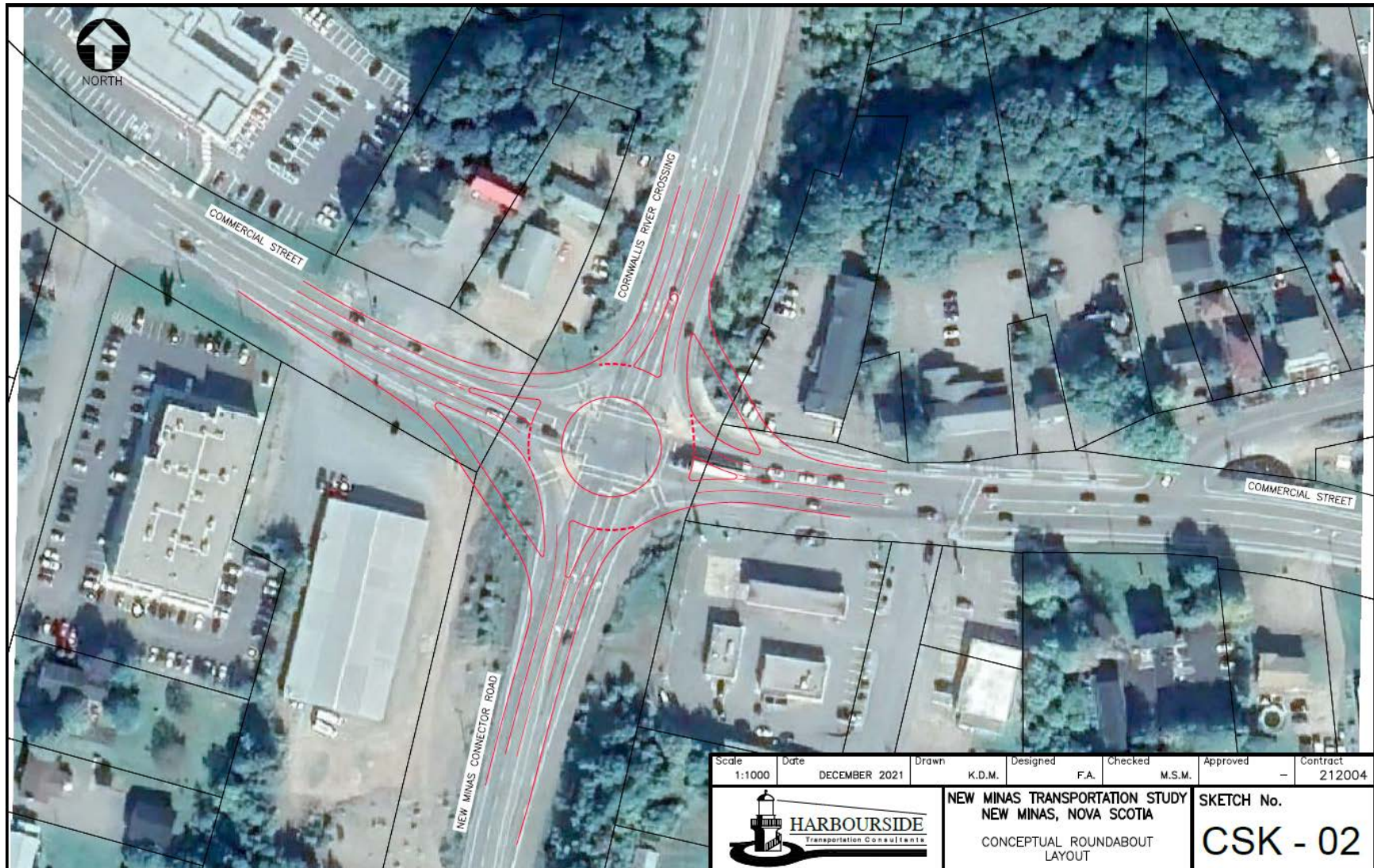


Figure 10: Commercial Street & New Minas Connector Road improvements



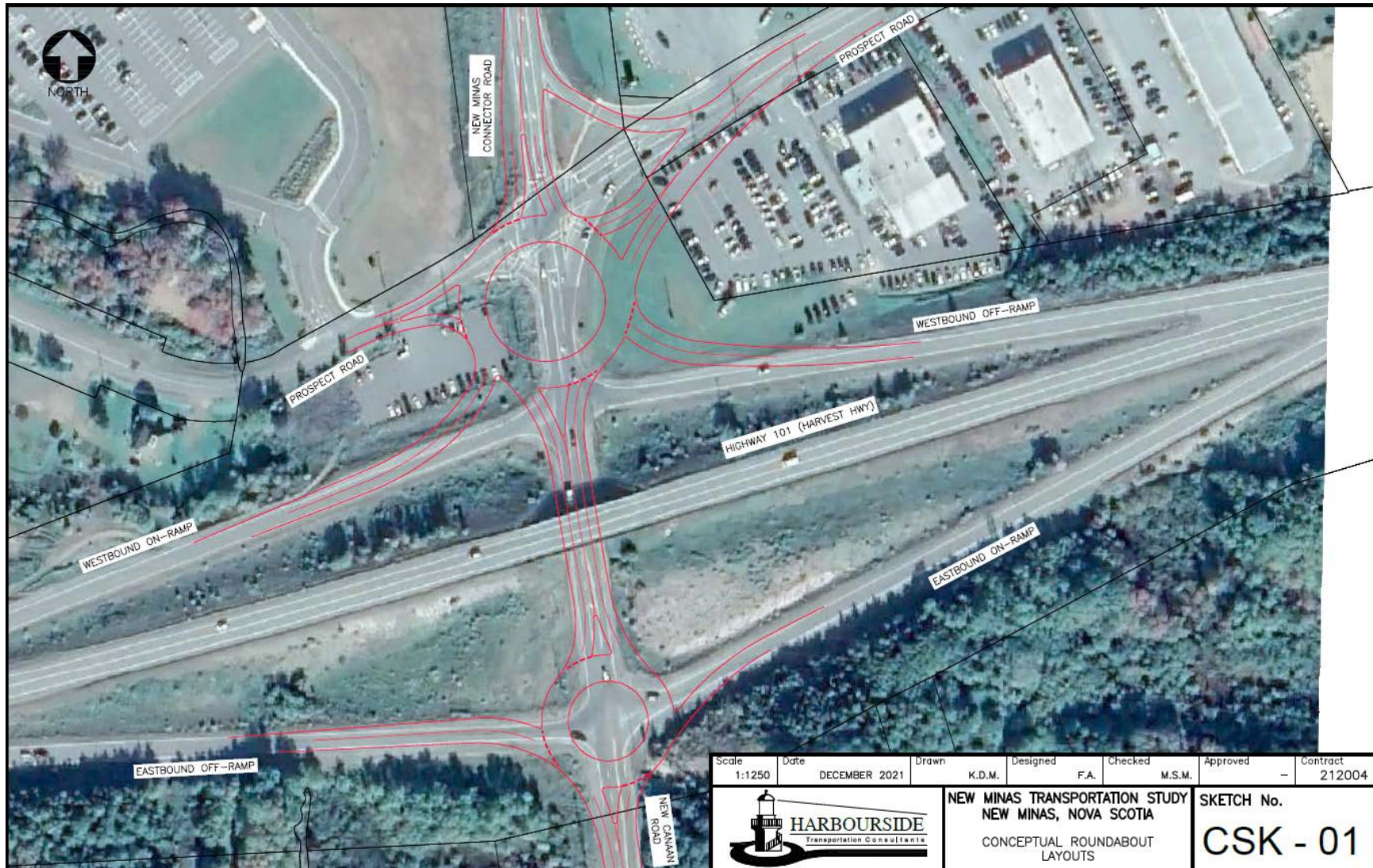


Figure 11: New Minas Connector Road interchange area improvements



### 7.1.3 Commercial Street & Granite Drive

The projected development traffic volumes can be accommodated by the existing multi-lane roundabout. While there are no existing or future operational deficiencies expected at the roundabout, this intersection is the intersection with the second highest number of collisions in New Minas.

The roundabout does not have any lane designation signage or pavement markings which is a potential contributing factor to the high number of collisions at the roundabout. It is recommended that lane designation signage or pavement markings be provided at the roundabout.

### 7.1.4 New Canaan Road & Highbury School Road

The unsignalized intersection of New Canaan Road and Highbury School Road will eventually be upgraded to a roundabout with Phase 2 of the expansion lands to accommodate the projected development traffic volumes and eliminate the sight distance issues at the intersection.

However, in its current configuration, the intersection has incorrect pavement markings for the two southbound lanes where the pavement marking configuration could indicate that the centre lane is also a through lane but there is no corresponding receiving lane. The centre lane terminates at the Highbury School Road intersection. It is recommended that the pavement markings be modified to clearly indicate the centre lane as a left turn lane onto Highbury School Road.

### 7.1.5 Commercial Street & Jones Road

While the traffic volumes at the intersection will meet the threshold for traffic signals with background traffic growth, because of the high through volumes on Commercial Street and proximity of the intersection to adjacent traffic signals, a traffic signal is not recommended. Introducing a traffic signal with only one through lane in each direction will create significant queues on Commercial Street that will spill back into the adjacent signalized intersection at Valley View Drive.

A separate left turn lane with a minimum of 25 metres of storage space should be provided on the Jones Road approach to separate left turning traffic from right turning traffic and improve operations for the right turn movement. Long term improvements at the adjacent intersection of Commercial Street and Valley View Drive will reduce traffic volumes on Jones Road approach and alleviate congestion for left turning traffic.

### 7.1.6 Commercial Street & Deep Hollow Road

A separate left turn lane with a minimum of 25 metres of storage space should be provided on the Deep Hollow Road approach to separate left turning traffic from right turning traffic and improve operations for the right turn movement.

### 7.1.7 Commercial Street & Silver Fox Avenue

The intersection should be monitored as development occurs and the traffic signal timings modified as required to minimize queuing on Commercial Street. If significant queues materialize on the eastbound approach to the traffic signal and impact operations at the adjacent roundabout at Granite Drive, converting the signalized intersection to a roundabout will be required to reduce queuing on the Commercial Street. Upgrading the intersection to a roundabout could provide the opportunity to introduce a raised centreline median between Granite Drive and Silver Fox Avenue to improve access management where possible.





### 7.1.8 Commercial Street & Valley View Drive / Commercial Street & Cornwallis Avenue

The intersection of Commercial Street and Valley View Drive will experience significant operational issues on Commercial Street if the development volumes materialize and distribute as anticipated. Converting the signalized intersection to a multi-lane roundabout will improve operations to acceptable levels of service reduce queuing on Commercial Street. The roundabout should include a new road connection from the residential neighbourhood to the north of Commercial Street to alleviate traffic volumes on Jones Road and Cornwallis Avenue and increase connectivity in the road network as shown in Figure 12.

The need to upgrade this intersection may be triggered by operations at the adjacent intersection of Commercial Street and Cornwallis Avenue. The intersection of Commercial Street and Cornwallis Avenue should be monitored as development occurs and the traffic signal timings modified as required to minimize queuing on Commercial Street. If significant queues materialize on the westbound approach to the traffic signal and impact operations at the adjacent roundabout at Granite Drive, the intersection of Commercial Street and Valley View Drive will need to be upgraded to a four-leg roundabout.

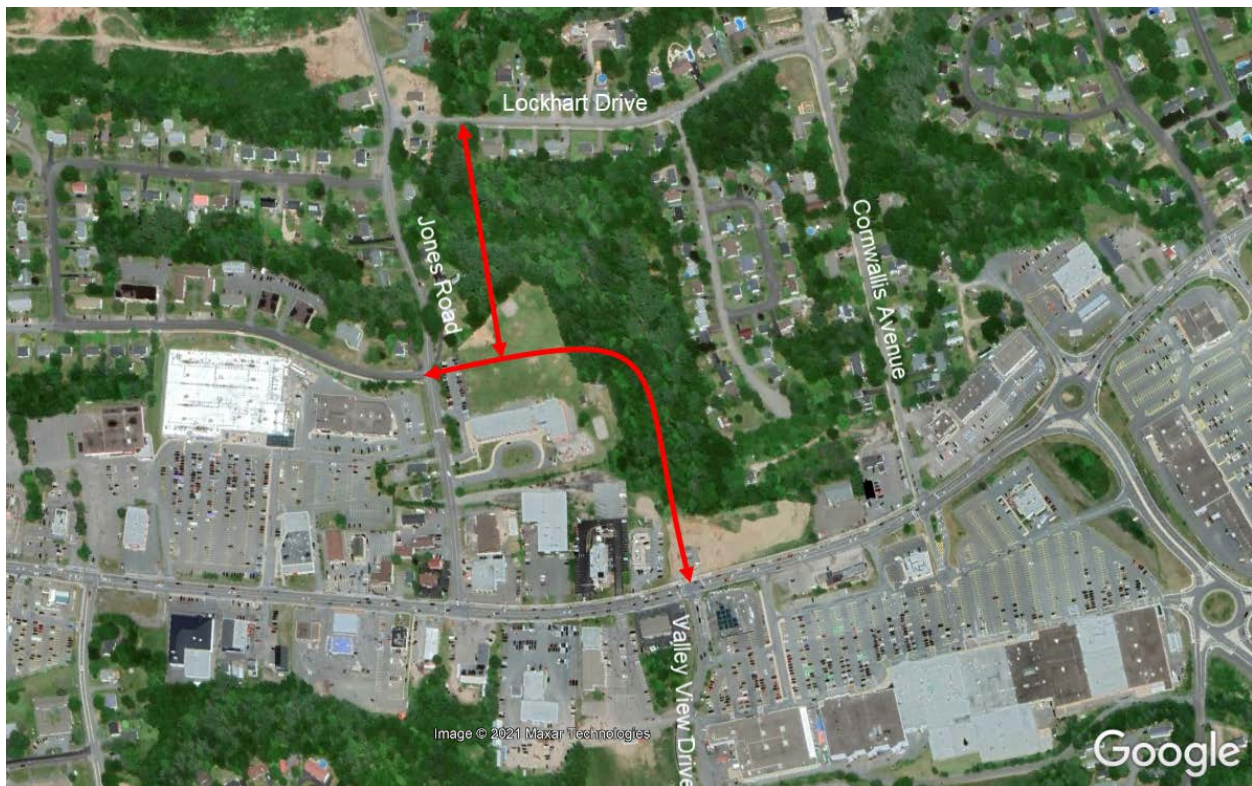


Figure 12: Potential new road connection to Valley View Drive intersection

Along with the new roundabout, the segment of Commercial Street between Valley View Drive and Granite Drive should be upgraded to a four-lane cross section with two lanes in each direction and a raised centreline median to improve access management where possible. The traffic signals at the intersection of Commercial Street and Cornwallis Avenue should be removed and the intersection converted to a right-in, right out access. The new roundabout at Commercial Street and Valley View Drive will have sufficient capacity to accommodate the additional traffic from the turning restriction at Cornwallis Avenue and the Country Fair Mall and a redistribution of traffic from Jones Road.



### 7.1.9 Commercial Street and Prospect Road

The intersection of Commercial Street and Prospect Road will experience significant operational issues on Commercial Street, potentially creating and causing gridlock in the westbound direction on Commercial Street if the development volumes materialize and distribute as anticipated. Converting the signalized intersection to a multi-lane roundabout will improve operations to acceptable levels of service reduce queuing on Commercial Street.

## 7.2 Priorities and Phasing

A prioritized improvement plan for the improvements to the existing transportation network was developed to ensure that the improvements are strategically implemented as development demands occur. The improvements were prioritized into short-, medium- and long-term improvements. The priorities are defined as follows:

- **Short-Term** (0 to 2-year timeframe): Low-cost safety improvements that should be implemented immediately.
- **Medium-Term** (2-to-10-year timeframe): Improvements required to improve existing operational deficiencies.
- **Long-Term** (10+year timeframe): Improvement that will primarily be driven by development or large-scale access management improvements.

Class “D” cost estimates were developed for the transportation network. **The cost estimates do not include allowances for inflation, engineering, property acquisitions, utility pole relocations or harmonized sales tax (HST).** The preliminary design of improvements should be completed to refine the cost estimates before using the cost estimates for the capital works budget.

A summary of the proposed short-, medium- and long-term improvements and associated costs is provided in Table 20. The total cost of the existing transportation network improvements is estimated at approximately \$14,610,000 plus HST.



Table 20: Existing transportation network improvement plan

Project	Description	Priority	Estimated Cost
Commercial Street & Granite Drive	Signage and pavement markings modifications	Short Term	\$50,000.00
New Canaan Road & Highbury School Road	Pavement markings modifications	Short Term	\$10,000.00
Commercial Street & New Minas Connector Road	Multi-lane roundabout	Medium Term	\$2,000,000.00
New Minas Connector Road & Highway 101 Eastbound Ramps	Multi-lane roundabout	Medium Term	\$2,000,000.00
New Minas Connector Road & Prospect Road and New Minas Connector Road & Highway 101 Westbound Ramps	Multi-lane roundabout	Medium Term	\$3,000,000.00
Commercial Street & Jones Road	Left turn lane on Jones Road approach	Medium	\$25,000.00
Commercial Street & Deep Hollow Road	Left turn lane on Deep Hollow Road approach	Long	\$25,000.00
Commercial Street & Prospect Road	Multi-lane roundabout	Long	\$2,000,000.00
Commercial Street - Valley View Drive & Cornwallis Avenue	Multi-lane roundabout with new roadway connection north of Valley View Drive Widening and access management improvements on Commercial Street between Valley View Drive and Granite Drive	Long Term	\$3,000,000.00
Commercial Street & Silver Fox Avenue	Multi-lane roundabout Access management improvements on Commercial Street between Granite Drive and Silver Fox	Long Term	\$2,500,000.00
<b>Total</b>			<b>\$14,610,000.00</b>

## 8 Access Management

The American Federal Highway Administration (FHWA) officially defines access management as “the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed.” In essence, it is the managing of the number of driveways and access points on a roadway which can provide obstruction to through traffic, while still providing adequate turning opportunities and facilities for turning traffic to maintain reasonable access to adjacent properties.

Inadequate access management can become one of the primary causes of the deterioration of an arterial or major collector roadway from both an operational and safety perspective. These roadways are a prime target for development because they can provide greater exposure and have access to major transportation links. However, the intent of arterials and major collector roadways is to provide safe and efficient travel between two points. This function is diminished as development is allowed to occur without putting thought toward how properties are accessed.

Closely spaced and poorly designed driveways can increase congestion and diminish the safety of the corridor. Poor access management not only adversely affects road safety and efficiency, but it may also reduce the economic vitality of a corridor. Minimizing the number of curb cuts, consolidation access





points, and buffering parking lots from the adjacent roadway can create a visually pleasing and more functional corridor.

Access management includes several techniques that are intended to increase the safety and efficiency of roadways. Some of these techniques include:

- **Access Spacing:** Increasing the distance between traffic signals improves the flow of traffic on major arterials, reduces congestion, and improves air quality for heavily traveled corridors.
- **Driveway Spacing:** Fewer properly designed driveways spaced further apart allows for more orderly merging of traffic and presents fewer challenges to drivers.
- **Safe Turning Lanes:** Dedicated left- and right-turn lanes, opportunities for U-turns, and roundabouts can keep through-traffic flowing. Roundabouts represent an opportunity to improve an intersection with many conflict points or a severe collision history to one that operates with fewer conflict points and less severe collisions if they occur.
- **Median Treatments:** Two-way left-turn lanes (TWLTL) and non-traversable raised medians are effective means to regulate access and reduce collisions.
- **Right-of-Way (ROW) Management:** Policies can be used to reserve the ROW for future widenings, good sight distance, access location, and other access-related issues.

The optimal time to implement these access management strategies is during the planning stages of the transportation network. However, in the case of Commercial Street, where the majority of the road is developed, the strategies must be implemented through corridor retrofits and as properties are redeveloped.

Commercial Street from Silver Fox Avenue to the New Minas Connector Road was broken down into four segments of approximately 550-650 metre in length. The segments and their respective number of access points are summarized in Table 21. In total, there are approximately 102 access points on Commercial Street between Silver Fox Avenue and the New Minas Connector Road. It should be noted that these access points do not include intersections with local streets, only access to private properties. Access management recommendations for each section are provided in the following sections.

Table 21: Number of access points per segment

ID	Segment		Length (m)	Number of Access Points		
	Start	End		North Side	South Side	Total
1	Silver Fox Avenue	Valley View Drive	650	9	6	15
2	Valley View Drive	Prospect Road	600	17	16	33
3	Prospect Road	Highbury Road	550	16	14	30
4	Highbury Road	New Minas Connector Road	550	15	9	24
<b>Total</b>			<b>2350</b>	<b>57</b>	<b>45</b>	<b>102</b>

### 8.1.1 Segment 1 - Silver Fox Avenue to Valley View Drive

There is a total of 15 access points on the segment of Commercial Street between Silver Fox Avenue and Valley View Drive, including 9 on the north side and 6 on the south side of Commercial Street. The locations of the access points are shown in Figure 13.



Figure 13: Segment 1 Commercial Street from Silver Fox Avenue to Valley View Drive



A roundabout corridor with a raised centre line median is recommended for the section of Commercial Street from Valley View Drive and Silver Fox Avenue with roundabouts located at the following intersections:

- Valley View Drive
- Granite Drive (Existing)
- Silver Fox Avenue

When deployed in a series, roundabouts can not only improve operations and safety but also allow the restriction of turning movements at access points between roundabouts. As shown in Figure 14, while the continuous raised median will eliminate left turn and across roadway movements, vehicles can still travel to/from right-in, right-out access points by completing U-turn maneuvers at the roundabouts on either side of the access.

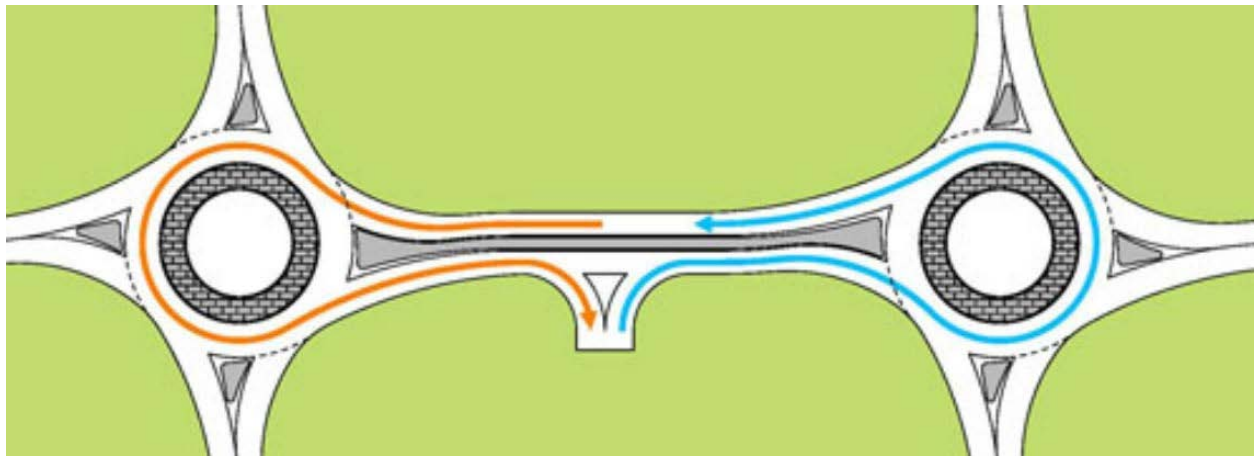


Figure 14: Tandem roundabouts with continuous raised median (Source: FHWA)

Recommendations to improve access management for each individual access points are summarized in Table 22.



Table 22: Access management recommendations for Segment 1

		ID	Location	Description	Recommendation
<b>North Side</b>		1	Civic #9225	Fully directional access	Eliminate and consolidate access with Civic #9223, property appears to already share access with adjacent property through access #2.
		2	Civic #9223	Fully directional access	Current access 2 configuration creates crossing conflicts between upper and lower parking lot. Redesign lot configuration to provide better site circulation and access to both Civic #9223 and #9225.
		3		Fully directional access	
		4	Circle K	Fully directional access	Convert to right-in, right-out access. Property will maintain access on Old Dyke Road.
		5	Civic #9269/9275	Fully directional access	Convert to right-in, right-out access. Properties will maintain accesses on Old Dyke Road and Cornwallis Avenue.
		6	Civic #9241	Fully directional access	Convert to right-in, right-out access.
		7	Civic #9237	Fully directional access	Convert to right-in, right-out access.
		8	Civic #9209	Fully directional access	Eliminate to accommodate new roadway into proposed roundabout at Valley View Drive.
		9		Approach to signalized intersection	
		ID	Location	Description	Recommendation
<b>South Side</b>		1	County Fair Mall	Approach to signalized intersection.	Convert to right-in, right-out once traffic signals are removed through the conversion to a roundabout corridor.
		2	County Fair Mall	Fully directional access	Eliminate or consolidate with Henny Penny's Farm access.
		3	Henny Penny's Farm Market	Wide, undefined fully directional access	Consolidate access points, consider providing access from County Fair Mall access #2.
		4		Wide, undefined fully directional access	
		5		Wide, undefined fully directional access	
		6	County Fair Mall	Right-in, right-out access	Maintain as right-in, right-out access.

### 8.1.2 Segment 2 - Valley View Drive to Prospect Road

There is a total of 33 access points on the segment of Commercial Street between Valley View Drive and Prospect Road, including 17 on the north side and 16 on the south side of Commercial Street. The locations of the access points are shown in Figure 15.

Recommendations to improve access management for each individual access points are summarized in Table 23.





Figure 15: Section 2 Commercial Street from Valley View Drive to Prospect Road



Table 23: Access management recommendations for Segment 2

	ID	Location	Description	Recommendation
<b>North Side</b>	1	A&W Civic #9203	Fully directional access	-
	2	McDonald's	Entrance only	-
	3	Civic #9197	Exit only	-
	4	Happy Harry's	Fully directional access	Consider consolidating access points.
	5	Civic #9185	Fully directional access	
	6	Fire Department	Fully directional access	Consider consolidating access points.
	7	Civic #6 Jones	Fully directional access	
	8	Civic #9153	Entrance only	-
	9	Civic #9149	Fully directional access	-
	10	Civic #9145	Entrance only	Consider consolidating access points and redesign lot configuration to provide better site circulation and access to all properties. Where possible eliminate access from Commercial Street and provide access from the commercial parking lot behind through adjacent access # 14.
	11	Subway Civic #9141	Fully directional access	
	12	Civic #9137	Fully directional access	Eliminate parking conflicts with pedestrian facilities along frontage of Civic #9145.
	13	Pet Valu Civic #9129	Fully directional access	
	14	Walmart	Fully directional access	-
	15	Staples/Walmart	Fully directional access	Eliminate access point, property will maintain access from Prospect Road.
	16	Cleve's Civic # 9089	Fully directional access	Eliminate access point, property will maintain access from Prospect Road.
	17	Staples/Walmart	Approach to signalized intersection	-
<b>South Side</b>	1	Civic #9202	Fully directional access	Detailed design of the roundabout at the Valley View Drive will determine access recommendations.
	2		Fully directional access	
	3	Civic #9198	Fully directional access	-
	4	Chevrolet Civic #9184	Fully directional access	-
	5	Civic #9168	Fully directional access	Consider consolidating access points into one access opposite of Jones Road.
	6		Fully directional access	
	7	Midas	Fully directional access	Consider eliminating access #7 which only provides access to approximately 5 parking spaces.
	8	Civic #9154	Fully directional access	
	9	Burger King	Exit only	-
	10	Civic #9148	Fully directional access	Consider consolidating access points.
	11	Civic #9138	Fully directional access	
	12	Civic #9138	Fully directional access	-
	13	Civic #9116	Fully directional access	-
	14	Civic #9116	Fully directional access	Consider consolidating access points.
	15	Civic #9108	Fully directional access	
	16	Civic #9088	Fully directional access	Access to empty lot, access requirements should be evaluated when the lot is redeveloped.

### 8.1.3 Segment 3 - Prospect Road to Highbury Road

There is a total of 30 access points on the segment of Commercial Street between Prospect Road and Highbury Road, including 16 on the north side and 14 on the south side of Commercial Street. The locations of the access points are shown in Figure 16.

Recommendations to improve access management for each individual access points are summarized in Table 24.



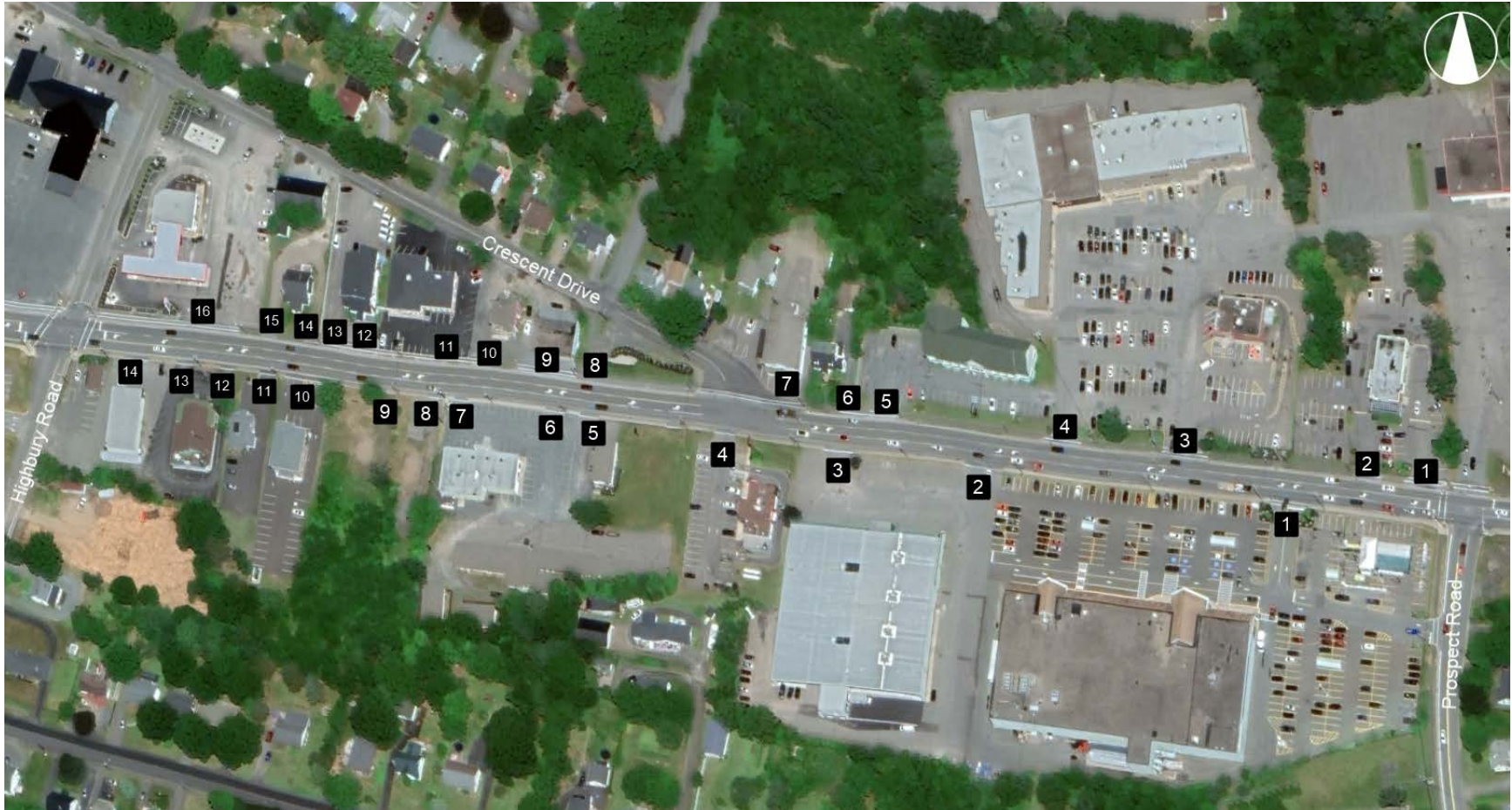


Figure 16: Section 3 Commercial Street from Prospect Road to Highbury Road



Table 24: Access management recommendations for Segment 3

	ID	Location	Description	Recommendation
<b>North Side</b>	1	Dairy Queen	Entrance only	Access is wide and should be narrowed.
	2	Civic #9071	Exit only	-
	3	Tim Hortons Civic #9049	Fully directional access	Access is wide and should be narrowed.
	4	Civic #9049	Fully directional access	-
	5	Civic #9039	Fully directional access	Access is wide and should be narrowed.
	6	Civic #9031	Residential access	-
	7	Civic #9027	Access to parking	Improve intersection geometry at Crescent Drive and provide curb along front of the building to restrict parking maneuvers directly to/from Commercial Street.
	8	Unpaved road	Fully directional access	Eliminate access.
	9	Civic #9011	Wide, undefined access	Define access to the west side of the building. Provide curb along the front of the building to restrict parking maneuvers directly to/from Commercial Street and eliminate conflicts with pedestrian facilities.
	10	Civic #9005/9007	Fully directional access	Consider consolidating access points.
	11	Civic #8999	Fully directional access	
	12	Civic #8995	Fully directional access	Consider consolidating access points. Property will maintain access from Crescent Drive.
	13		Fully directional access	
	14	Civic #8991	Residential access	Two access points to single-family home, consider consolidating into one access.
	15		Residential access	
	16	Petro Canada Civic #8981	Fully directional access	Access is wide and should be narrowed.
<b>South Side</b>	1	Atlantic Superstore Civic #9060	Fully directional access	-
	2	Former Kent Lot	Fully directional access	Access requirements should be evaluated when the lot is redeveloped.
	3		Fully directional access	
	4	KFC Civic #9024	Fully directional access	-
	5	Civic #9016	Fully directional access	Consider consolidating access points.
	6	Civic #9006	Fully directional access	
	7		Fully directional access	
	8	Civic #9002	Fully directional access	Access to empty lots, access requirements should be evaluated when the lot is redeveloped.
	9	Civic #8998	Fully directional access	Consider consolidating access points.
	10	Civic #8994	Fully directional access	
	11	Civic #8990	Fully directional access	Consider consolidating access points.
	12	Civic #8986	Fully directional access	
	13		Fully directional access	
	14	Civic #8974/8978	Fully directional access	

#### 8.1.4 Segment 4 - Highbury Road to New Minas Connector Road

There is a total of 24 access points on the segment of Commercial Street between Highbury Road and the New Minas Connector Road, including 15 on the north side and 9 on the south side of Commercial Street. The locations of the access points are shown in Figure 17.

Recommendations to improve access management for each individual access points are summarized in Table 25.



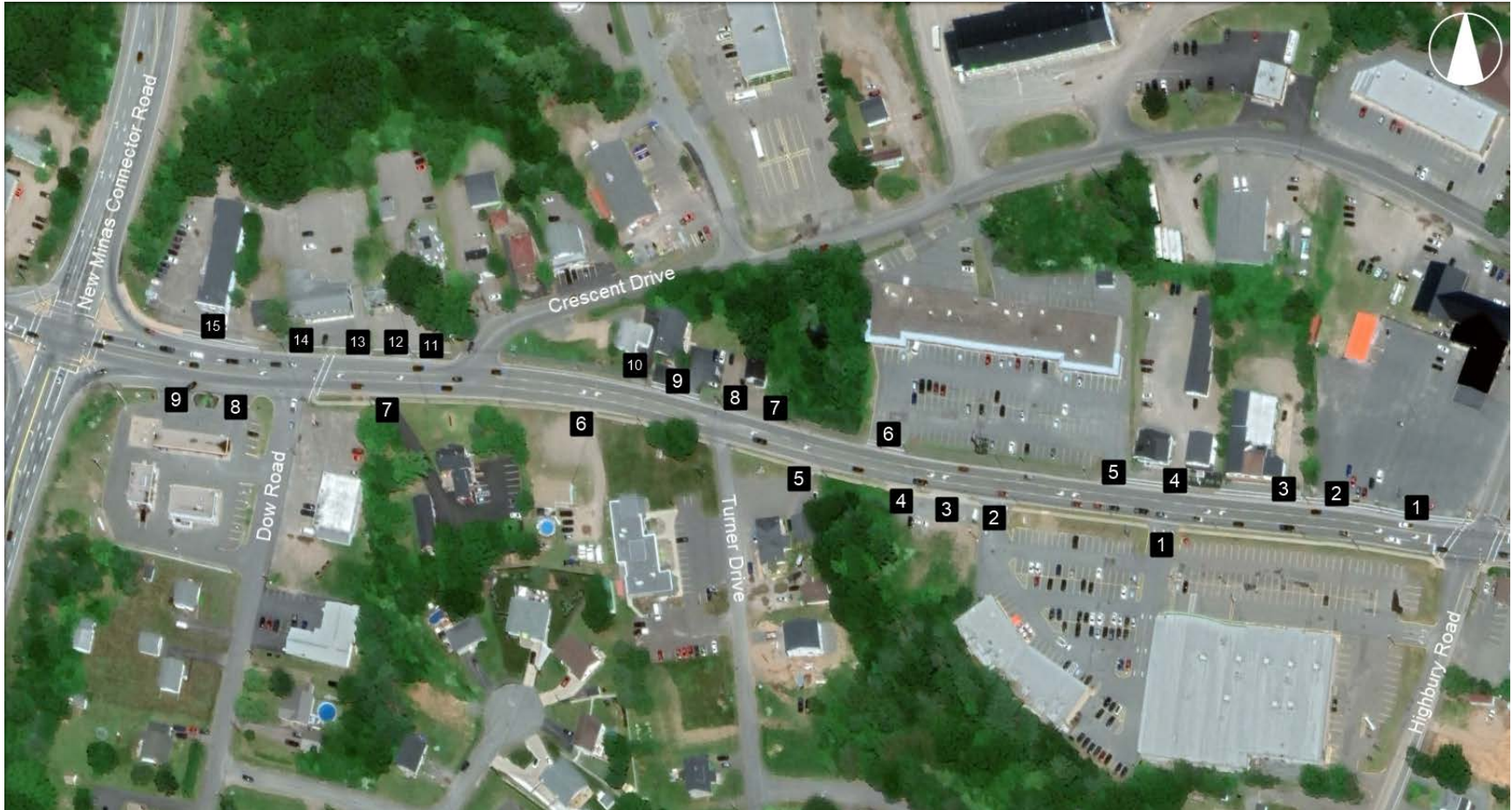


Figure 17: Section 4 Commercial Street from Highbury Road to New Minas Connector Road



Table 25: Access management recommendations for Segment 4

	ID	Location	Description	Recommendation
<b>North Side</b>	1	Carstar Civic #8961/8963	Wide, undefined access point	Property two accesses on Commercial Street and one on Highbury Road.
	2		Wide, undefined access point	Eliminate access 1 near Highbury Road and upgrades access 2 into a properly designed driveway.
	3	Civic #8951	Wide, undefined access point	Define access to the east side of the building. Provide curb along the front of the building to restrict parking maneuvers directly to/from Commercial Street and eliminate conflicts with pedestrian facilities.
	4	Civic #8942/8943	Wide, undefined access point	Define access point between the two buildings. Provide curb along the front of the building at Civic #8943 to restrict parking maneuvers directly to/from Commercial Street and eliminate conflicts with pedestrian facilities.
	5	Kings Centre Civic #8927	Fully directional access	-
	6		Fully directional access	-
	7	Civic #8911	Residential access	Two access points to single-family home, consider consolidating into one access.
	8		Residential access	
	9	Civic #8903/8905	Wide, undefined access point	Define access to the east side of the building. Provide curb along the front of the building.
	10	Civic #8899	Fully directional access	-
	11	Civic #8877	Fully directional access	A connection is provided between the parking lots on Civic #8873 and #8877. Consider consolidating the four access points into two access shared by both properties.
	12	Civic #8877	Fully directional access	
	13	Civic #8873	Fully directional access	
	14	Civic #8873	Fully directional access	
	15	Civic #8865/8861	Fully directional access	Detailed design of the roundabout at the New Minas Connector will determine access recommendations.
<b>South Side</b>	1	Cineplex Civic #8934/8944	Fully directional access	Properties share two accesses on Commercial Street and one on Highbury Road, consider consolidating access points on Commercial Street and realigning the new access with access to Kings Centre on the north side.
	2	Civic #8934	Fully directional access	
	3	Civic #8926	Fully directional access	Two accesses on empty lot, access requirements should be evaluated when the lot is redeveloped.
	4		Fully directional access	
	5	Civic #8916	Fully directional access	Property has alternate access to Turner Drive, consider eliminating access on Commercial Street.
	6	Civic #8896	Fully directional access	-
	7	Civic #8872/8876	Residential access	-
	8	Shell Civic #8868	Fully directional access	Consolidate both access points into one right-in, right-out with the proposed roundabout at the New Minas Connector Road. Property will maintain fully directional access on Dow Road.
	9		Fully directional access	



## 9 Transportation Demand Management

Transportation demand management (TDM) is a general term for policies, programs, services and products designed to influence how, why, when and where people travel. The intent of TDM is to reduce the demand for vehicles by encourage more efficient use of existing transportation infrastructure and promoting sustainable travel modes. TDM improves mobility by shifting the focus to moving people rather than vehicles. TDM strategies include increasing travel choices, providing incentives and information to encourage individuals to modify their travel behavior or by reducing the physical need to travel through transportation-efficient land uses.

A complete TDM program offers a range of strategies; different TDM strategies can be used to achieve specific objectives such as reducing congestion, reducing energy consumption and emission, improving public health and fitness, improving equity, improving community livability, parking solutions, improving safety and increasing transportation affordability.

The cumulative impact of a comprehensive set of TDM strategies can have a significant impact on travel behavior, system efficiency and single-occupancy vehicle trips; which in turn can reduce the need to expand existing infrastructure, reduce the environmental impact of transportation and promote more sustainable travel options which lead to healthier lifestyles.

The components of TDM program should be selected to meet the needs of the community. The various TDM strategies in the program can be implemented by public agencies, employers, or through public-private partnerships.

Implementing transportation demand management strategies will be important to manage future demand and reduce congestion on Commercial Street and minimize vehicle dependency in the expansion lands where significant levels of residential density are proposed.

Strategies should include:

1. Provide continuous walking and cycling facilities along Commercial Street and in the expansion lands to encourage the use of active transportation.
2. Provide walking and cycling connections between the expansion lands and Commercial Street.
3. Promote transit service to encourage the use of transit. Provide increase service and new route connections to the expansion lands.
4. Work with large employers to provide end of trip facilities for active transportations users (i.e., bicycle parking, showers, etc.)
5. During the design stages for new commercial development in the expansion lands and the redevelopment of commercial properties on Commercial Street, the design should consider the walkability of these sites to promote walking trips between stores as opposed to separate vehicle trips.





## **Appendix A: Synchro/SimTraffic Reports**

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Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	298	41	15	285	75	33
Future Vol, veh/h	298	41	15	285	75	33
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	6	3	8	4	7	8
Mvmt Flow	335	46	17	320	84	37

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	382	0	713
Stage 1	-	-	-	-	359
Stage 2	-	-	-	-	354
Critical Hdwy	-	-	4.18	-	6.47
Critical Hdwy Stg 1	-	-	-	-	5.47
Critical Hdwy Stg 2	-	-	-	-	5.47
Follow-up Hdwy	-	-	2.272	-	3.563
Pot Cap-1 Maneuver	-	-	1144	-	391
Stage 1	-	-	-	-	696
Stage 2	-	-	-	-	699
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1143	-	384
Mov Cap-2 Maneuver	-	-	-	-	384
Stage 1	-	-	-	-	695
Stage 2	-	-	-	-	686

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	442	-	-	1143	-
HCM Lane V/C Ratio	0.275	-	-	0.015	-
HCM Control Delay (s)	16.2	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	406	66	69	475	6	38	6	66	6	10	25
Future Volume (vph)	6	406	66	69	475	6	38	6	66	6	10	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				1.00			1.00	0.97		0.99	
Frt			0.850		0.998				0.850		0.919	
Flt Protected	0.950			0.950				0.959			0.992	
Satd. Flow (prot)	1789	1865	1601	1706	1873	0	0	1747	1512	0	1620	0
Flt Permitted	0.470			0.443				0.725			0.935	
Satd. Flow (perm)	868	1865	1601	795	1873	0	0	1317	1473	0	1526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		1				72			27
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		163.1			885.4			89.5			94.5	
Travel Time (s)		11.7			63.7			6.4			6.8	
Confl. Peds. (#/hr)	13					13	1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	7%	2%	25%	3%	20%	8%	20%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	441	72	75	516	7	41	7	72	7	11	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	441	72	75	523	0	0	48	72	0	45	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	62.2	62.2	62.2	39.0	46.2		28.7	28.7	28.7	28.7	28.7	
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7		5.7	
Act Effect Green (s)	61.8	61.8	61.8	71.6	71.5			8.8	8.8		8.8	
Actuated g/C Ratio	0.71	0.71	0.71	0.82	0.82			0.10	0.10		0.10	
v/c Ratio	0.01	0.33	0.06	0.10	0.34			0.36	0.34		0.25	
Control Delay	6.7	8.1	2.0	2.6	3.6			45.7	14.3		24.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	6.7	8.1	2.0	2.6	3.6			45.7	14.3		24.1	
LOS	A	A	A	A	A			D	B		C	
Approach Delay		7.2			3.5			26.9			24.1	
Approach LOS		A			A			C			C	
Stops (vph)	3	163	6	14	119			41	16		21	
Fuel Used(l)	0	12	1	13	90			3	2		2	
CO Emissions (g/hr)	4	232	23	237	1669			53	31		30	

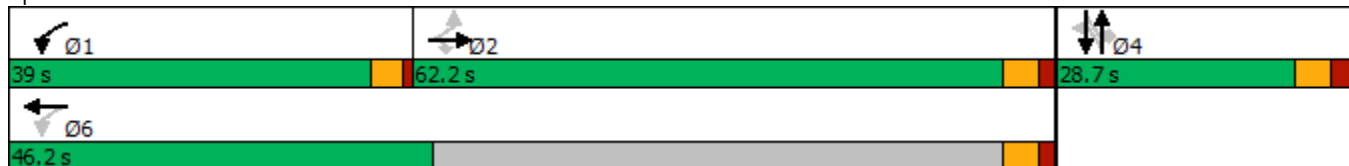


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	1	45	5	46	322			10	6		6	
VOC Emissions (g/hr)	1	53	5	55	385			12	7		7	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	0.4	31.2	0.0	2.0	20.3			7.8	0.0		2.9	
Queue Length 95th (m)	2.0	54.5	4.7	5.3	37.6			18.5	11.9		12.7	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	615	1322	1156	1019	1873			349	443		424	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.33	0.06	0.07	0.28			0.14	0.16		0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	129.9
Actuated Cycle Length:	87.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	7.9
Intersection LOS:	A
Intersection Capacity Utilization:	54.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study  
7: Commercial Street & Cornwallis Avenue

Scenario 2 Background Growth AM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	475	18	23	550	23	16	6	18	63	8	13
Future Volume (vph)	11	475	18	23	550	23	16	6	18	63	8	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			1.00			1.00	
Frt		0.995			0.994				0.850		0.979	
Flt Protected	0.950			0.950				0.964			0.964	
Satd. Flow (prot)	1644	3527	0	1722	1869	0	0	1816	1601	0	1673	0
Flt Permitted	0.434			0.403				0.799			0.766	
Satd. Flow (perm)	742	3527	0	730	1869	0	0	1501	1601	0	1329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			4				100			9
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.5			128.7			65.9			120.6	
Travel Time (s)		18.5			9.3			4.7			8.7	
Confl. Peds. (#/hr)	12					12	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	3%	2%	6%	2%	2%	2%	2%	2%	8%	17%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	505	19	24	585	24	17	6	19	67	9	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	524	0	24	609	0	0	23	19	0	90	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4		4	4		
Total Split (s)	45.8	45.8		21.0	45.4		29.4	29.4	29.4	29.4	29.4	
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4		5.4	
Act Effect Green (s)	45.1	45.1		48.2	50.1			9.6	9.6		9.6	
Actuated g/C Ratio	0.68	0.68		0.72	0.75			0.14	0.14		0.14	
v/c Ratio	0.02	0.22		0.04	0.43			0.11	0.06		0.45	
Control Delay	8.5	7.2		4.0	5.6			27.6	0.4		33.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	8.5	7.2		4.0	5.6			27.6	0.4		33.0	
LOS	A	A		A	A			C	A		C	
Approach Delay		7.2			5.6			15.3			33.0	
Approach LOS		A			A			B			C	
Stops (vph)	6	193		7	210			21	0		67	
Fuel Used(l)	0	19		1	14			1	0		5	
CO Emissions (g/hr)	9	355		9	264			20	2		86	



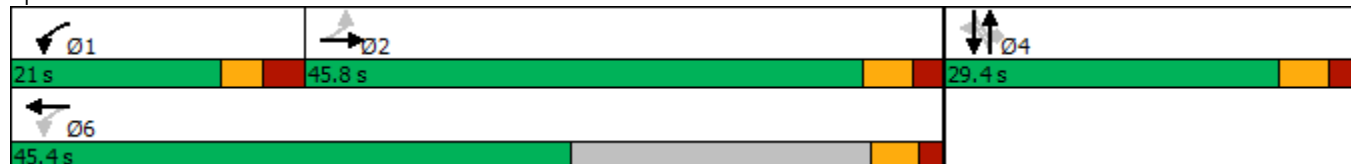


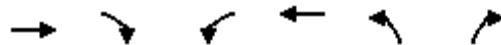
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	69		2	51			4	0			17
VOC Emissions (g/hr)	2	82		2	61			5	1			20
Dilemma Vehicles (#)	0	0		0	0			0	0			0
Queue Length 50th (m)	0.4	9.4		0.7	25.6			2.2	0.0			8.2
Queue Length 95th (m)	3.3	31.0		3.0	54.5			8.9	0.0			23.5
Internal Link Dist (m)		233.5			104.7			41.9				96.6
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	503	2392		754	1720			548	648			491
Starvation Cap Reductn	0	0		0	0			0	0			0
Spillback Cap Reductn	0	0		0	0			0	0			0
Storage Cap Reductn	0	0		0	0			0	0			0
Reduced v/c Ratio	0.02	0.22		0.03	0.35			0.04	0.03			0.18

**Intersection Summary**

Area Type:	Other
Cycle Length:	96.2
Actuated Cycle Length:	66.6
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.45
Intersection Signal Delay:	8.4
Intersection LOS:	A
Intersection Capacity Utilization:	51.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 7: Commercial Street & Cornwallis Avenue





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	536	64	6	593	83	6
Future Volume (vph)	536	64	6	593	83	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%		0%		0%	
Storage Length (m)	50.0		30.0	0.0		0.0
Storage Lanes	1		1	1		1
Taper Length (m)			2.5	2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt	0.850				0.850	
Flt Protected			0.950	0.950		
Satd. Flow (prot)	1865	1601	1789	1883	1789	1601
Flt Permitted			0.329	0.950		
Satd. Flow (perm)	1865	1601	620	1883	1766	1601
Right Turn on Red	Yes				Yes	
Satd. Flow (RTOR)	56				7	
Link Speed (k/h)	50		50		50	
Link Distance (m)	238.4		257.5		70.8	
Travel Time (s)	17.2		18.5		5.1	
Confl. Peds. (#/hr)					4	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%		0%	
Adj. Flow (vph)	589	70	7	652	91	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	70	7	652	91	7
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2	1		6	4	
Permitted Phases	2		6			4
Total Split (s)	45.9	45.9	20.7	45.9	31.1	31.1
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	44.7	44.7	45.8	46.8	8.7	8.7
Actuated g/C Ratio	0.70	0.70	0.72	0.73	0.14	0.14
v/c Ratio	0.45	0.06	0.01	0.47	0.37	0.03
Control Delay	8.5	3.1	3.7	6.3	30.5	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	3.1	3.7	6.3	30.5	16.2
LOS	A	A	A	A	C	B
Approach Delay	7.9			6.3	29.4	
Approach LOS	A			A	C	
Stops (vph)	251	11	3	244	71	5
Fuel Used(l)	21	2	0	23	4	0
CO Emissions (g/hr)	396	34	4	425	76	4

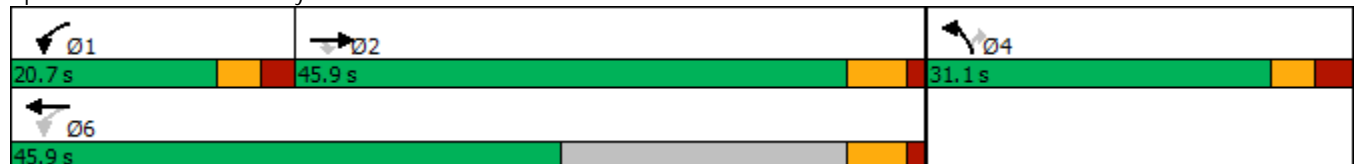


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	76	7	1	82	15	1
VOC Emissions (g/hr)	91	8	1	98	18	1
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	26.1	0.4	0.3	30.1	9.3	0.0
Queue Length 95th (m)	86.8	6.4	1.3	59.1	24.5	3.3
Internal Link Dist (m)	214.4			233.5	46.8	
Turn Bay Length (m)		50.0	30.0			
Base Capacity (vph)	1309	1140	723	1798	708	638
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.06	0.01	0.36	0.13	0.01

**Intersection Summary**

Area Type:	Other
Cycle Length:	97.7
Actuated Cycle Length:	63.7
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	8.6
Intersection LOS:	A
Intersection Capacity Utilization	47.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 8: Valley View Drive & Commercial Street



Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	651	621	94	66	86
Future Vol, veh/h	103	651	621	94	66	86
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	6
Mvmt Flow	116	731	698	106	74	97

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	805	0	-	0	1715 753
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	963 -
Critical Hdwy	4.12	-	-	-	6.42 6.26
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.354
Pot Cap-1 Maneuver	819	-	-	-	99 403
Stage 1	-	-	-	-	466 -
Stage 2	-	-	-	-	370 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	818	-	-	-	85 402
Mov Cap-2 Maneuver	-	-	-	-	214 -
Stage 1	-	-	-	-	399 -
Stage 2	-	-	-	-	370 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	33.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	818	-	-	-	291
HCM Lane V/C Ratio	0.141	-	-	-	0.587
HCM Control Delay (s)	10.1	-	-	-	33.5
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	3.5

New Minas Transportation Study  
10: Prospect Road/Driveway & Commercial Street

Scenario 2 Background Growth AM

12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	581	20	110	535	6	64	19	210	41	30	19
Future Volume (vph)	20	581	20	110	535	6	64	19	210	41	30	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.99					0.99
Frt		0.995			0.998			0.862				0.943
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1874	0	1789	1879	0	1789	1609	0	1722	1731	0
Flt Permitted	0.435			0.233			0.721			0.396		
Satd. Flow (perm)	781	1874	0	439	1879	0	1339	1609	0	718	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			236				21
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	9					9	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	2%	13%	2%	6%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	22	653	22	124	601	7	72	21	236	46	34	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	675	0	124	608	0	72	257	0	46	55	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	45.2	45.2		20.4	45.2		30.6	30.6		30.6	30.6	
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6	5.6	
Act Effect Green (s)	41.0	41.0		51.7	51.9		10.1	10.1		10.1	10.1	
Actuated g/C Ratio	0.56	0.56		0.71	0.71		0.14	0.14		0.14	0.14	
v/c Ratio	0.05	0.64		0.27	0.45		0.39	0.60		0.46	0.21	
Control Delay	10.6	16.7		5.2	6.1		36.2	12.4		46.0	22.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.6	16.7		5.2	6.1		36.2	12.4		46.0	22.1	
LOS	B	B		A	A		D	B		D	C	
Approach Delay		16.5			6.0			17.6				33.0
Approach LOS		B			A			B				C
Stops (vph)	11	409		30	207		56	44		39	29	
Fuel Used(l)	1	49		5	26		4	7		3	2	
CO Emissions (g/hr)	28	918		93	491		77	132		50	35	



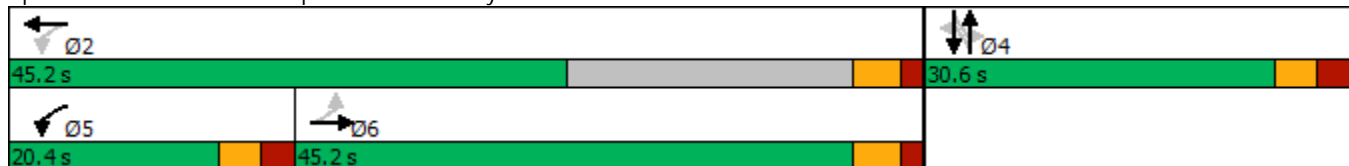


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	5	177		18	95		15	25		10	7	
VOC Emissions (g/hr)	6	212		22	113		18	30		11	8	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	1.3	60.9		4.1	26.7		9.4	2.6		6.0	4.3	
Queue Length 95th (m)	5.7	123.4		10.9	58.0		21.3	21.2		16.2	13.7	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	439	1055		592	1573		464	712		249	614	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.64		0.21	0.39		0.16	0.36		0.18	0.09	

**Intersection Summary**

Area Type:	Other
Cycle Length:	96.2
Actuated Cycle Length:	72.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	13.4
Intersection LOS:	B
Intersection Capacity Utilization:	75.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 10: Prospect Road/Driveway & Commercial Street



New Minas Transportation Study  
11: Highbury Road & Commercial Street

Scenario 2 Background Growth AM

12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	554	18	20	431	6	45	20	45	28	24	50
Future Volume (vph)	15	554	18	20	431	6	45	20	45	28	24	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99			1.00	
Frt		0.995			0.998			0.945			0.934	
Flt Protected	0.950			0.950				0.980			0.986	
Satd. Flow (prot)	1690	1873	0	1722	1879	0	0	1662	0	0	1662	0
Flt Permitted	0.459			0.337				0.846			0.884	
Satd. Flow (perm)	814	1873	0	610	1879	0	0	1435	0	0	1489	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			37			50	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	4		2	2		4			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	2%	2%	6%	2%	2%	6%	2%	8%	5%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	589	19	21	459	6	48	21	48	30	26	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	608	0	21	465	0	0	117	0	0	109	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	16.8	46.0		16.5	45.7		28.6	28.6		28.6	28.6	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	45.6	43.9		47.0	46.6			9.7			9.7	
Actuated g/C Ratio	0.65	0.63		0.67	0.66			0.14			0.14	
v/c Ratio	0.03	0.52		0.04	0.37			0.51			0.44	
Control Delay	4.6	11.7		4.5	8.0			28.0			22.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	4.6	11.7		4.5	8.0			28.0			22.4	
LOS	A	B		A	A			C			C	
Approach Delay		11.5			7.8			28.0			22.4	
Approach LOS		B			A			C			C	
Stops (vph)	7	321		7	192			69			52	
Fuel Used(l)	1	44		1	31			6			4	
CO Emissions (g/hr)	19	812		24	569			102			74	

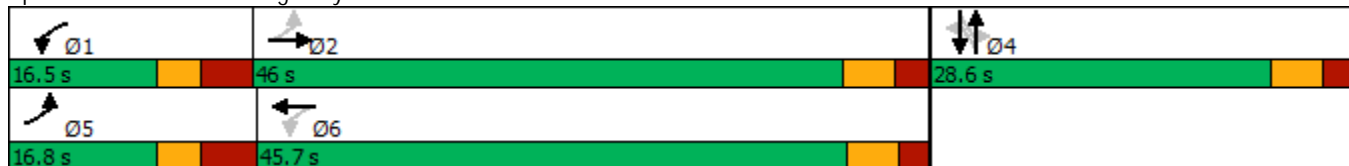


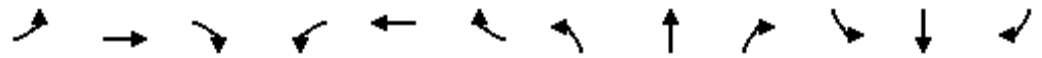
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	157		5	110			20			14	
VOC Emissions (g/hr)	4	187		6	131			24			17	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (m)	0.5	27.1		0.7	18.3			8.2			5.9	
Queue Length 95th (m)	2.5	97.5		3.0	67.9			25.3			21.2	
Internal Link Dist (m)		552.1			544.7			128.7			84.5	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	667	1172		573	1248			501			527	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.52		0.04	0.37			0.23			0.21	

**Intersection Summary**

Area Type:	Other
Cycle Length:	91.1
Actuated Cycle Length:	70.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization:	50.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: Highbury Road & Commercial Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	284	88	79	308	203	260	169	88	350	120	60
Future Volume (vph)	18	284	88	79	308	203	260	169	88	350	120	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	70.0		70.0	50.0		50.0	100.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.99	1.00		0.98						
Frt			0.850			0.850		0.949			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1865	1585	1601	1883	1585	1789	3396	0	1789	3313	0
Flt Permitted	0.542			0.448			0.371			0.581		
Satd. Flow (perm)	972	1865	1564	754	1883	1561	699	3396	0	1094	3313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			218			68			53
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		192.5			576.1			411.6			196.8	
Travel Time (s)		13.9			41.5			18.5			8.9	
Confl. Peds. (#/hr)	2		1	1		2						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	3%	3%	14%	2%	3%	2%	2%	2%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	305	95	85	331	218	280	182	95	376	129	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	305	95	85	331	218	280	277	0	376	194	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	16.3	55.2	55.2	20.7	55.2	55.2	36.5	56.0		16.5	41.0	
Total Lost Time (s)	6.3	5.2	5.2	5.7	5.2	5.2	6.5	6.0		6.5	6.0	
Act Effect Green (s)	56.2	50.3	50.3	63.4	60.0	60.0	35.4	19.9		19.8	10.3	
Actuated g/C Ratio	0.50	0.45	0.45	0.56	0.53	0.53	0.31	0.18		0.18	0.09	
v/c Ratio	0.04	0.37	0.12	0.17	0.33	0.23	0.68	0.42		1.48	0.55	
Control Delay	13.4	24.0	0.5	13.4	18.9	3.4	39.9	32.2		264.8	42.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.4	24.0	0.5	13.4	18.9	3.4	39.9	32.2		264.8	42.5	
LOS	B	C	A	B	B	A	D	C		F	D	
Approach Delay		18.2			12.9			36.1			189.1	
Approach LOS		B			B			D			F	
Stops (vph)	10	184	0	35	176	17	200	163		272	119	
Fuel Used(l)	1	15	2	6	25	12	50	46		99	19	
CO Emissions (g/hr)	14	271	31	110	470	224	936	862		1845	354	

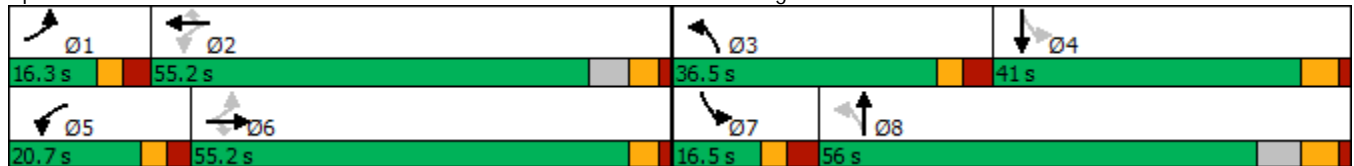


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	3	52	6	21	91	43	181	166		356	68	
VOC Emissions (g/hr)	3	62	7	25	108	52	216	199		426	82	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	11		0	8	
Queue Length 50th (m)	1.7	43.2	0.0	8.0	35.2	0.0	49.3	21.3		-91.2	15.7	
Queue Length 95th (m)	6.0	78.7	0.6	18.6	80.9	14.2	75.6	34.4		#154.1	29.4	
Internal Link Dist (m)		168.5			552.1			387.6			172.8	
Turn Bay Length (m)	50.0		25.0	70.0		70.0	50.0			100.0		
Base Capacity (vph)	576	832	785	544	1010	939	519	1701		254	1070	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.03	0.37	0.12	0.16	0.33	0.23	0.54	0.16		1.48	0.18	

Intersection Summary

Area Type: Other  
 Cycle Length: 153.4  
 Actuated Cycle Length: 112.7  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.48  
 Intersection Signal Delay: 65.9  
 Intersection LOS: E  
 Intersection Capacity Utilization 75.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street





New Minas Transportation Study  
 13: New Minas Connector Road & Prospect Road

Scenario 2 Background Growth AM  
 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↘		↗	↘		↗	↘	
Traffic Volume (vph)	21	44	23	143	24	69	18	426	235	46	215	26
Future Volume (vph)	21	44	23	143	24	69	18	426	235	46	215	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	60.0		0.0	60.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00			1.00				1.00	
Frt		0.965			0.889			0.947			0.984	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1631	0	1722	1560	0	1601	1759	0	1772	1802	0
Flt Permitted		0.904		0.819			0.593			0.270		
Satd. Flow (perm)	0	1492	0	1482	1560	0	998	1759	0	504	1802	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			78			43			9	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		133.5			262.5			70.9			257.2	
Travel Time (s)		9.6			18.9			3.2			11.6	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	24%	6%	11%	6%	5%	11%	14%	2%	6%	3%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	49	26	161	27	78	20	479	264	52	242	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	99	0	161	105	0	20	743	0	52	271	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Total Split (s)	39.8	39.8		39.8	39.8		42.1	42.1		42.1	42.1	
Total Lost Time (s)		5.8		5.8	5.8		6.1	6.1		6.1	6.1	
Act Effect Green (s)		13.2		13.2	13.2		38.9	38.9		38.9	38.9	
Actuated g/C Ratio		0.21		0.21	0.21		0.61	0.61		0.61	0.61	
v/c Ratio		0.30		0.53	0.27		0.03	0.69		0.17	0.25	
Control Delay		17.5		28.0	9.6		6.8	13.4		8.8	7.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		17.5		28.0	9.6		6.8	13.4		8.8	7.2	
LOS		B		C	A		A	B		A	A	
Approach Delay		17.5			20.7			13.2			7.4	
Approach LOS		B			C			B			A	
Stops (vph)		52		120	28		9	416		23	107	
Fuel Used(l)		3		9	4		1	34		7	36	
CO Emissions (g/hr)		64		174	68		13	639		132	671	

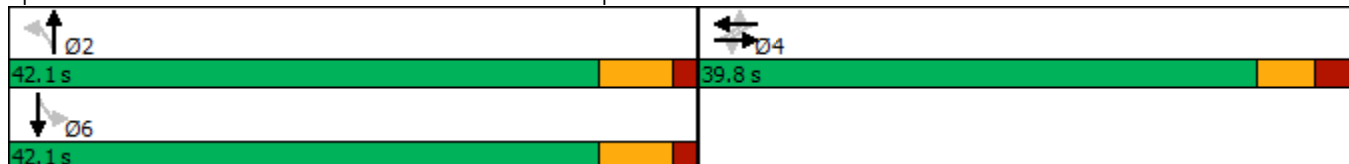


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)		12		34	13		3	123		25	130	
VOC Emissions (g/hr)		15		40	16		3	147		30	155	
Dilemma Vehicles (#)		0		0	0		0	51		0	19	
Queue Length 50th (m)		6.8		16.0	2.4		0.8	47.1		2.3	12.2	
Queue Length 95th (m)		16.9		30.4	12.1		3.7	104.0		8.7	28.0	
Internal Link Dist (m)		109.5			238.5			46.9			233.2	
Turn Bay Length (m)				60.0			60.0			70.0		
Base Capacity (vph)		807		790	868		605	1084		305	1097	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.12		0.20	0.12		0.03	0.69		0.17	0.25	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 81.9  
 Actuated Cycle Length: 64.1  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 13.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 62.7%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 13: New Minas Connector Road & Prospect Road



Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕		↕	↑			↕	
Traffic Vol, veh/h	0	0	0	10	0	256	50	423	0	0	206	175
Future Vol, veh/h	0	0	0	10	0	256	50	423	0	0	206	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	6	7
Mvmt Flow	0	0	0	11	0	278	54	460	0	0	224	190

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	887	982	460	414	0	-	0
Stage 1	568	568	-	-	-	-	-
Stage 2	319	414	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	315	249	601	1145	-	0	0
Stage 1	567	506	-	-	-	0	0
Stage 2	737	593	-	-	-	0	0
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	300	0	601	1145	-	-	-
Mov Cap-2 Maneuver	300	0	-	-	-	-	-
Stage 1	540	0	-	-	-	-	-
Stage 2	737	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	1145	-	579	-
HCM Lane V/C Ratio	0.047	-	0.499	-
HCM Control Delay (s)	8.3	-	17.3	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.1	-	2.8	-

Intersection												
Int Delay, s/veh	13.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔						↔		↔	↔	
Traffic Vol, veh/h	256	0	18	0	0	0	0	217	19	158	58	0
Future Vol, veh/h	256	0	18	0	0	0	0	217	19	158	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	2	2	2	2	2	2	4	7	6	2	2
Mvmt Flow	264	0	19	0	0	0	0	224	20	163	60	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	620	630	60	-	0	0	244	0	0
Stage 1	386	386	-	-	-	-	-	-	-
Stage 2	234	244	-	-	-	-	-	-	-
Critical Hdwy	6.43	6.52	6.22	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.43	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.018	3.318	-	-	-	2.254	-	-
Pot Cap-1 Maneuver	450	399	1005	0	-	-	1299	-	0
Stage 1	685	610	-	0	-	-	-	-	0
Stage 2	802	704	-	0	-	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	394	0	1005	-	-	-	1299	-	-
Mov Cap-2 Maneuver	394	0	-	-	-	-	-	-	-
Stage 1	685	0	-	-	-	-	-	-	-
Stage 2	702	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	0	6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	410	1299	-
HCM Lane V/C Ratio	-	-	0.689	0.125	-
HCM Control Delay (s)	-	-	31.1	8.2	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	5	0.4	-

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	126	110	6	35	41
Future Vol, veh/h	6	126	110	6	35	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	25	5	3	2	11	2
Mvmt Flow	7	140	122	7	39	46

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	250	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	124	-	-	-	-	-
Critical Hdwy	6.65	6.25	-	-	4.21	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.345	-	-	2.299	-
Pot Cap-1 Maneuver	691	916	-	-	1403	-
Stage 1	846	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	672	916	-	-	1403	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1403
HCM Lane V/C Ratio	-	-	0.163	0.028
HCM Control Delay (s)	-	-	9.8	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:30	7:30	7:30	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	4942	4884	4935	4997	5049	4927	4928
Vehs Exited	4949	4866	4895	4969	5035	4913	4958
Starting Vehs	220	192	211	203	217	207	253
Ending Vehs	213	210	251	231	231	221	223
Travel Distance (km)	7390	7228	7218	7360	7387	7129	7323
Travel Time (hr)	235.6	219.7	269.6	243.5	270.3	258.3	325.3
Total Delay (hr)	94.2	80.9	130.8	102.1	128.4	120.7	185.0
Total Stops	5739	5499	5428	5621	5575	5427	5466
Fuel Used (l)	654.5	630.9	669.1	654.7	683.2	656.0	726.2

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	4953	4956	5069	4963
Vehs Exited	4929	4959	5075	4954
Starting Vehs	196	239	221	210
Ending Vehs	220	236	215	215
Travel Distance (km)	7231	7300	7484	7305
Travel Time (hr)	209.2	260.7	229.4	252.2
Total Delay (hr)	70.2	120.4	85.5	111.8
Total Stops	5576	5496	5918	5575
Fuel Used (l)	619.2	667.1	651.2	661.2

Interval #0 Information Seeding

Start Time	7:30
End Time	8:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1159	1167	1232	1239	1184	1197	1167
Vehs Exited	1163	1148	1207	1232	1187	1189	1193
Starting Vehs	220	192	211	203	217	207	253
Ending Vehs	216	211	236	210	214	215	227
Travel Distance (km)	1789	1754	1796	1818	1774	1738	1723
Travel Time (hr)	53.2	49.6	59.1	52.3	56.8	50.7	60.3
Total Delay (hr)	19.2	15.8	24.4	17.1	22.8	17.1	27.0
Total Stops	1346	1261	1473	1453	1314	1307	1295
Fuel Used (l)	156.3	150.9	159.3	155.6	155.7	149.0	155.7

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1188	1227	1188	1197
Vehs Exited	1194	1257	1196	1198
Starting Vehs	196	239	221	210
Ending Vehs	190	209	213	203
Travel Distance (km)	1768	1802	1763	1773
Travel Time (hr)	49.6	59.0	53.1	54.4
Total Delay (hr)	15.9	24.6	19.3	20.3
Total Stops	1315	1436	1338	1350
Fuel Used (l)	149.9	161.2	151.8	154.5

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1401	1334	1301	1353	1370	1348	1393
Vehs Exited	1360	1283	1284	1307	1327	1305	1342
Starting Vehs	216	211	236	210	214	215	227
Ending Vehs	257	262	253	256	257	258	278
Travel Distance (km)	1969	1917	1906	1936	1952	1924	2052
Travel Time (hr)	61.2	57.8	68.7	61.4	69.8	63.5	86.7
Total Delay (hr)	23.3	21.1	32.2	24.4	32.1	26.3	47.4
Total Stops	1605	1504	1456	1510	1543	1571	1556
Fuel Used (l)	172.7	166.6	173.0	167.8	178.8	171.6	199.5

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1380	1394	1359	1359
Vehs Exited	1345	1355	1328	1325
Starting Vehs	190	209	213	203
Ending Vehs	225	248	244	245
Travel Distance (km)	1961	1956	1973	1954
Travel Time (hr)	53.8	65.0	60.9	64.9
Total Delay (hr)	16.0	27.0	23.0	27.3
Total Stops	1491	1573	1668	1544
Fuel Used (l)	164.9	175.3	172.9	174.3

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1199	1215	1167	1205	1237	1189	1214
Vehs Exited	1216	1257	1205	1221	1252	1206	1251
Starting Vehs	257	262	253	256	257	258	278
Ending Vehs	240	220	215	240	242	241	241
Travel Distance (km)	1818	1780	1726	1799	1826	1686	1849
Travel Time (hr)	59.0	56.8	67.4	63.4	69.9	71.1	89.1
Total Delay (hr)	24.3	22.4	34.3	29.0	34.7	38.4	54.0
Total Stops	1394	1361	1240	1348	1319	1280	1323
Fuel Used (l)	161.2	157.6	164.6	165.4	172.3	164.0	189.7

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1188	1149	1280	1199
Vehs Exited	1196	1169	1270	1225
Starting Vehs	225	248	244	245
Ending Vehs	217	228	254	221
Travel Distance (km)	1767	1728	1883	1786
Travel Time (hr)	52.8	65.7	59.1	65.4
Total Delay (hr)	19.0	32.3	22.9	31.1
Total Stops	1379	1159	1503	1326
Fuel Used (l)	152.4	160.5	165.5	165.3

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1183	1168	1235	1200	1258	1193	1154
Vehs Exited	1210	1178	1199	1209	1269	1213	1172
Starting Vehs	240	220	215	240	242	241	241
Ending Vehs	213	210	251	231	231	221	223
Travel Distance (km)	1814	1776	1791	1808	1836	1780	1700
Travel Time (hr)	62.2	55.5	74.5	66.4	73.8	73.0	89.3
Total Delay (hr)	27.5	21.5	39.9	31.6	38.7	38.8	56.6
Total Stops	1394	1373	1259	1310	1399	1269	1292
Fuel Used (l)	164.3	155.8	172.3	165.9	176.4	171.4	181.3

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1197	1186	1242	1201
Vehs Exited	1194	1178	1281	1209
Starting Vehs	217	228	254	221
Ending Vehs	220	236	215	215
Travel Distance (km)	1735	1814	1866	1792
Travel Time (hr)	53.0	71.1	56.3	67.5
Total Delay (hr)	19.3	36.4	20.4	33.1
Total Stops	1391	1328	1409	1350
Fuel Used (l)	152.0	170.1	161.0	167.0



**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.3	0.2	0.2	0.1
Total Delay (hr)	0.4	0.0	0.0	0.0	0.2	0.0	0.8
Total Del/Veh (s)	3.5	3.4	3.4	0.5	8.6	4.5	3.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Stop Del/Veh (s)	0.0	0.0	1.4	0.1	6.1	3.7	0.7

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.1	0.3	0.2	1.1	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Total Delay (hr)	0.0	0.5	0.1	0.2	0.9	0.0	0.4	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	11.1	4.8	2.8	8.3	6.8	6.4	33.3	32.6	2.1	28.5	33.6	9.3
Stop Delay (hr)	0.0	0.3	0.0	0.1	0.2	0.0	0.3	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	8.1	2.7	0.0	2.9	1.5	2.0	30.8	28.4	0.0	26.6	30.2	9.0

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	2.3
Total Del/Veh (s)	7.0
Stop Delay (hr)	1.1
Stop Del/Veh (s)	3.4

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.5	0.4	0.2	0.1	4.2	0.2	0.2	0.2
Total Delay (hr)	0.0	0.7	0.0	0.0	0.7	0.0	0.1	0.0	0.0	0.4	0.1	0.0
Total Del/Veh (s)	11.9	5.3	3.4	6.1	4.6	3.5	18.3	18.6	4.6	22.8	24.4	12.3
Stop Delay (hr)	0.0	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.3	0.1	0.0
Stop Del/Veh (s)	8.2	2.2	1.3	4.4	2.1	2.3	16.7	15.7	4.4	20.1	20.3	11.2

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	2.2
Total Del/Veh (s)	6.3
Stop Delay (hr)	1.3
Stop Del/Veh (s)	3.6

**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.1	0.1	0.0
Total Delay (hr)	0.8	0.0	0.0	1.0	0.5	0.0	2.3
Total Del/Veh (s)	4.2	2.5	8.7	6.0	21.0	5.2	5.9
Stop Delay (hr)	0.3	0.0	0.0	0.4	0.4	0.0	1.2
Stop Del/Veh (s)	1.8	0.9	4.8	2.3	19.0	5.5	3.0

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.2	0.2	0.0
Total Delay (hr)	0.3	0.7	0.6	0.1	0.6	0.5	2.7
Total Del/Veh (s)	10.1	3.5	3.2	2.3	32.0	20.0	5.6
Stop Delay (hr)	0.2	0.1	0.0	0.0	0.5	0.5	1.2
Stop Del/Veh (s)	5.4	0.3	0.1	0.2	29.5	19.0	2.6

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	3.6	0.4	0.5	0.1	0.1	0.1
Total Delay (hr)	0.1	2.8	0.1	0.5	1.5	0.0	0.5	0.1	0.8	0.4	0.2	0.0
Total Del/Veh (s)	23.4	16.9	17.4	15.9	8.8	8.1	27.9	24.7	13.8	31.1	22.1	9.3
Stop Delay (hr)	0.1	1.4	0.1	0.3	0.7	0.0	0.5	0.1	0.7	0.3	0.2	0.0
Stop Del/Veh (s)	15.6	8.7	10.9	10.6	4.1	4.1	24.6	20.1	11.8	28.9	19.1	8.8

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	7.0
Total Del/Veh (s)	14.6
Stop Delay (hr)	4.4
Stop Del/Veh (s)	9.1

11: Highbury Road & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.0	1.8	0.0	0.1	1.2	0.0	0.3	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	13.3	9.5	8.9	12.1	7.4	7.2	23.5	23.5	11.0	23.9	20.7	10.0
Stop Delay (hr)	0.0	0.8	0.0	0.0	0.4	0.0	0.2	0.1	0.1	0.2	0.1	0.1
Stop Del/Veh (s)	7.6	4.2	4.4	6.0	2.7	3.3	20.7	19.2	9.8	21.3	17.0	9.2

11: Highbury Road & Commercial Street Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	4.2
Total Del/Veh (s)	9.8
Stop Delay (hr)	2.2
Stop Del/Veh (s)	5.1

12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.6	0.6	3.5	0.8	0.1	0.5	0.1	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	1.4	0.1	0.4	1.5	0.3	2.6	2.3	0.3	25.6	2.2	0.2
Total Del/Veh (s)	15.7	18.0	5.4	19.2	17.4	6.0	35.5	44.9	9.8	273.0	70.5	16.3
Stop Delay (hr)	0.1	1.1	0.1	0.3	1.0	0.0	2.1	1.8	0.1	25.7	1.9	0.2
Stop Del/Veh (s)	12.2	13.8	2.3	13.3	11.0	0.2	28.3	35.2	4.1	273.9	60.0	10.6

12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	37.2
Total Del/Veh (s)	65.5
Stop Delay (hr)	34.2
Stop Del/Veh (s)	60.3

**13: New Minas Connector Road & Prospect Road Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	3.8	0.5	0.5	0.0	0.0	0.1	0.1	0.0	0.0
Total Delay (hr)	0.1	0.2	0.0	1.0	0.1	0.1	0.0	1.4	0.2	0.2	0.4	0.0
Total Del/Veh (s)	21.9	20.1	3.0	24.8	20.6	3.4	9.7	11.1	3.1	15.4	6.6	2.5
Stop Delay (hr)	0.1	0.2	0.0	0.9	0.1	0.0	0.0	0.7	0.1	0.2	0.2	0.0
Stop Del/Veh (s)	19.3	16.1	0.3	21.6	15.7	0.0	7.8	5.8	1.1	13.6	2.5	1.8

**13: New Minas Connector Road & Prospect Road Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	3.8
Total Del/Veh (s)	10.5
Stop Delay (hr)	2.4
Stop Del/Veh (s)	6.7

**14: New Minas Connector Road & H101 WB Off-Ramp Performance by movement**

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.1	1.2	0.1	0.4	0.2	0.1	2.0
Total Del/Veh (s)	20.7	16.3	4.6	3.6	3.2	1.6	6.4
Stop Delay (hr)	0.0	1.0	0.0	0.0	0.0	0.0	1.2
Stop Del/Veh (s)	16.6	13.6	2.5	0.4	0.4	0.5	3.7

**15: New Canaan Road/New Minas Connector Road & H101 EB Off-Ramp Performance by movement**

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.2	0.0	0.0	0.1	0.0	0.1
Total Delay (hr)	0.9	0.0	0.1	0.0	0.1	0.0	1.2
Total Del/Veh (s)	12.3	7.7	1.9	0.4	3.2	2.0	5.9
Stop Delay (hr)	0.6	0.0	0.0	0.0	0.0	0.0	0.6
Stop Del/Veh (s)	7.9	5.1	0.2	0.2	0.9	0.0	3.1

16: New Canaan Road & Highbury School Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.0	0.0	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	5.7	3.3	0.7	0.0	1.0	0.3	1.7
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.2	2.4	0.0	0.0	0.3	0.0	1.0

Total Network Performance

Denied Delay (hr)	19.6
Denied Del/Veh (s)	14.1
Total Delay (hr)	92.2
Total Del/Veh (s)	64.2
Stop Delay (hr)	70.1
Stop Del/Veh (s)	48.9



**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	2.3	86.6	20.2	28.0
Average Queue (m)	0.1	0.0	1.9	12.9
95th Queue (m)	1.9	0.0	10.3	22.3
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	L	TR	LT	LTR
Maximum Queue (m)	16.5	48.8	20.5	61.6	28.1	24.5
Average Queue (m)	1.1	18.9	7.0	17.9	10.3	7.8
95th Queue (m)	8.0	40.3	16.2	44.8	21.9	18.5
Link Distance (m)		157.3		873.9	82.0	86.5
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	25.0		100.0			
Storage Blk Time (%)	0	3				
Queuing Penalty (veh)	0	0				

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	13.6	36.8	34.4	10.3	51.6	12.7	6.1	32.5
Average Queue (m)	2.2	12.4	11.6	2.2	18.5	3.1	1.7	12.4
95th Queue (m)	9.4	27.7	27.4	7.4	40.3	9.2	5.6	25.3
Link Distance (m)		240.7		118.4	118.4	54.0		111.4
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	25.0		40.0				35.0	
Storage Blk Time (%)	0	1	0					
Queuing Penalty (veh)	0	2	0					

**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	56.8	36.5	9.1	69.4	28.9	6.0
Average Queue (m)	22.8	4.6	1.0	27.1	12.3	1.1
95th Queue (m)	45.1	19.0	5.6	55.5	23.7	4.8
Link Distance (m)	224.9			240.7	60.4	60.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	0	0		4		
Queuing Penalty (veh)	0	0		0		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	23.6	8.6	11.4	55.2
Average Queue (m)	10.8	0.4	0.9	22.4
95th Queue (m)	20.3	5.3	6.4	44.9
Link Distance (m)		361.5	224.9	103.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	25.0			
Storage Blk Time (%)	0			
Queuing Penalty (veh)	2			

**Intersection: 10: Prospect Road/Driveway & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	29.7	120.3	27.3	83.2	40.1	56.5	24.8	23.1
Average Queue (m)	4.8	50.2	15.2	36.2	13.2	24.7	8.9	7.9
95th Queue (m)	18.5	95.6	28.4	68.7	28.3	44.4	19.5	17.8
Link Distance (m)		551.4		361.5		173.0	80.9	80.9
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	13	1	9	0	0		
Queuing Penalty (veh)	0	3	3	10	0	0		

**Intersection: 11: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	18.0	477.0	25.0	67.4	36.8	32.1
Average Queue (m)	2.0	54.8	3.4	25.9	14.8	12.8
95th Queue (m)	10.2	238.3	13.4	53.8	28.7	25.9
Link Distance (m)		556.7		551.4	143.8	98.9
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	8	0	5		
Queuing Penalty (veh)	0	1	0	1		

**Intersection: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	B6	SB	SB
Directions Served	L	T	R	L	T	R	L	T	TR	T	L	T
Maximum Queue (m)	19.3	76.7	27.5	49.8	74.8	35.7	52.3	100.8	48.0	21.2	102.4	204.2
Average Queue (m)	3.5	35.0	9.7	14.2	32.6	1.5	40.0	37.1	12.4	0.8	102.3	193.1
95th Queue (m)	13.5	64.3	30.6	33.7	59.8	18.6	59.0	75.4	35.4	21.6	104.2	226.5
Link Distance (m)		181.3			556.7			400.3		240.4		182.7
Upstream Blk Time (%)												80
Queuing Penalty (veh)												0
Storage Bay Dist (m)	50.0		25.0	70.0		70.0	50.0		50.0		100.0	
Storage Blk Time (%)	0	13	0		0	0	5	1	0		92	21
Queuing Penalty (veh)	0	14	1		1	0	14	4	1		54	74

**Intersection: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street**

Movement	SB	B32
Directions Served	TR	T
Maximum Queue (m)	47.2	250.0
Average Queue (m)	19.8	173.6
95th Queue (m)	40.7	328.2
Link Distance (m)	182.7	243.7
Upstream Blk Time (%)		43
Queuing Penalty (veh)		0
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 13: New Minas Connector Road & Prospect Road**

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	TR
Maximum Queue (m)	30.2	42.1	21.2	14.3	57.0	19.1	36.9
Average Queue (m)	11.7	19.4	4.6	1.9	29.4	5.3	8.4
95th Queue (m)	24.8	35.7	14.6	8.5	54.3	13.4	24.4
Link Distance (m)	123.6		250.8		55.2		240.4
Upstream Blk Time (%)					1		
Queuing Penalty (veh)					4		
Storage Bay Dist (m)		60.0		60.0		70.0	
Storage Blk Time (%)		0			1		
Queuing Penalty (veh)		0			0		

**Intersection: 14: New Minas Connector Road & H101 WB Off-Ramp**

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (m)	68.3	13.3	15.4	6.2
Average Queue (m)	24.7	3.9	0.9	0.2
95th Queue (m)	52.1	11.2	9.2	5.9
Link Distance (m)	279.6		111.3	55.2
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (m)		50.0		
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

**Intersection: 15: New Canaan Road/New Minas Connector Road & H101 EB Off-Ramp**

Movement	EB	NB	SB
Directions Served	LTR	TR	L
Maximum Queue (m)	46.3	0.5	20.5
Average Queue (m)	20.5	0.0	7.0
95th Queue (m)	37.0	0.5	16.1
Link Distance (m)	290.9	222.3	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			50.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

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Intersection: 16: New Canaan Road & Highbury School Road

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Movement	WB	SB
Directions Served	LR	L
Maximum Queue (m)	23.4	11.8
Average Queue (m)	11.4	1.0
95th Queue (m)	18.9	5.8
Link Distance (m)	241.1	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		230.0
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Network Summary

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Network wide Queuing Penalty: 191

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Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	500	83	35	404	64	28
Future Vol, veh/h	500	83	35	404	64	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	7	3	2	5
Mvmt Flow	562	93	39	454	72	31

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	655	0	1141 609
Stage 1	-	-	-	-	609 -
Stage 2	-	-	-	-	532 -
Critical Hdwy	-	-	4.17	-	6.42 6.25
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.263	-	3.518 3.345
Pot Cap-1 Maneuver	-	-	909	-	222 490
Stage 1	-	-	-	-	543 -
Stage 2	-	-	-	-	589 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	909	-	209 490
Mov Cap-2 Maneuver	-	-	-	-	209 -
Stage 1	-	-	-	-	543 -
Stage 2	-	-	-	-	555 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	28.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	253	-	-	909	-
HCM Lane V/C Ratio	0.409	-	-	0.043	-
HCM Control Delay (s)	28.7	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	519	163	98	500	9	211	8	151	8	6	8
Future Volume (vph)	15	519	163	98	500	9	211	8	151	8	6	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				1.00			0.98				0.99
Frt			0.850		0.997				0.850			0.951
Flt Protected	0.950			0.950				0.954				0.982
Satd. Flow (prot)	1789	1883	1601	1789	1876	0	0	1797	1601	0	1733	0
Flt Permitted	0.470			0.323				0.718				0.885
Satd. Flow (perm)	869	1883	1601	608	1876	0	0	1326	1601	0	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168		2				156			8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		163.1			885.4			89.5				94.5
Travel Time (s)		11.7			63.7			6.4				6.8
Confl. Peds. (#/hr)	12					12	7					7
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	15	535	168	101	515	9	218	8	156	8	6	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	535	168	101	524	0	0	226	156	0	22	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	62.2	62.2	62.2	39.0	46.2		28.7	28.7	28.7	28.7		28.7
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7			5.7
Act Effect Green (s)	57.0	57.0	57.0	71.5	70.3			22.7	22.7			22.7
Actuated g/C Ratio	0.55	0.55	0.55	0.69	0.68			0.22	0.22			0.22
v/c Ratio	0.03	0.52	0.18	0.19	0.41			0.78	0.33			0.06
Control Delay	11.5	17.3	2.3	6.3	8.7			58.5	7.6			24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0
Total Delay	11.5	17.3	2.3	6.3	8.7			58.5	7.6			24.9
LOS	B	B	A	A	A			E	A			C
Approach Delay		13.7			8.3			37.7				24.9
Approach LOS		B			A			D				C
Stops (vph)	7	316	13	29	212			194	21			13
Fuel Used(l)	1	22	3	19	99			16	3			1
CO Emissions (g/hr)	10	410	58	346	1836			299	49			16

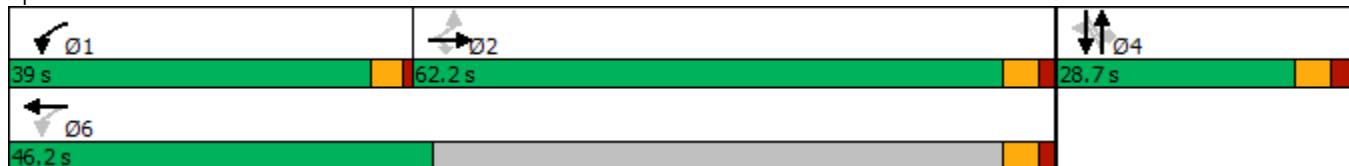


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	79	11	67	354			58	9		3	
VOC Emissions (g/hr)	2	94	13	80	423			69	11		4	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	1.3	65.0	0.0	6.0	42.6			43.3	0.0		2.3	
Queue Length 95th (m)	4.5	96.3	9.1	11.1	61.2			#81.1	15.8		8.7	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	476	1033	954	816	1733			293	475		352	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.03	0.52	0.18	0.12	0.30			0.77	0.33		0.06	

Intersection Summary

Area Type: Other  
 Cycle Length: 129.9  
 Actuated Cycle Length: 103.9  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 17.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 64.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study  
7: Commercial Street & Cornwallis Avenue

Scenario 2 Background Growth PM

12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	689	23	94	658	24	80	18	99	75	24	26
Future Volume (vph)	25	689	23	94	658	24	80	18	99	75	24	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			0.99				0.99
Frt		0.995			0.995				0.850			0.972
Flt Protected	0.950			0.950				0.961				0.971
Satd. Flow (prot)	1789	3561	0	1789	1872	0	0	1810	1601	0	1756	0
Flt Permitted	0.378			0.271				0.700				0.755
Satd. Flow (perm)	708	3561	0	510	1872	0	0	1309	1601	0	1365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			4				110			13
Link Speed (k/h)		50			50			50				50
Link Distance (m)		257.5			128.7			65.9				120.6
Travel Time (s)		18.5			9.3			4.7				8.7
Confl. Peds. (#/hr)	7					7	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	28	766	26	104	731	27	89	20	110	83	27	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	792	0	104	758	0	0	109	110	0	139	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4		4	4		
Total Split (s)	45.8	45.8		21.0	45.4		29.4	29.4	29.4	29.4		29.4
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4			5.4
Act Effect Green (s)	40.7	40.7		50.8	51.5			12.2	12.2			12.2
Actuated g/C Ratio	0.55	0.55		0.68	0.69			0.16	0.16			0.16
v/c Ratio	0.07	0.41		0.22	0.59			0.51	0.31			0.59
Control Delay	11.7	12.3		5.8	8.9			38.2	8.7			37.9
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	11.7	12.3		5.8	8.9			38.2	8.7			37.9
LOS	B	B		A	A			D	A			D
Approach Delay		12.3			8.5			23.4				37.9
Approach LOS		B			A			C				D
Stops (vph)	15	399		29	329			84	18			99
Fuel Used(l)	1	33		2	20			5	2			7
CO Emissions (g/hr)	22	616		41	379			100	31			136

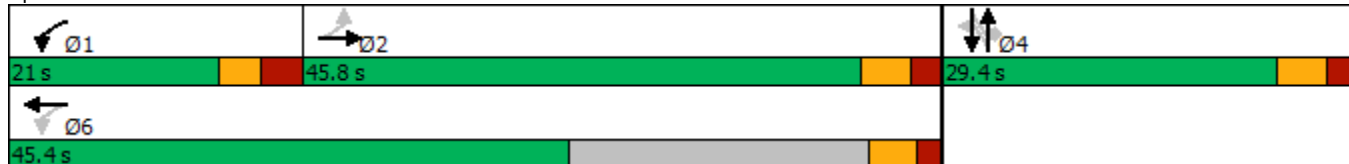


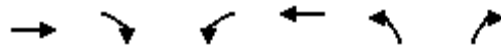
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	119		8	73			19	6		26	
VOC Emissions (g/hr)	5	142		10	87			23	7		31	
Dilemma Vehicles (#)	0	0		0	0			0	0		0	
Queue Length 50th (m)	1.9	34.2		4.1	45.2			14.6	0.0		17.0	
Queue Length 95th (m)	7.1	58.3		10.9	94.1			29.8	12.1		34.6	
Internal Link Dist (m)		233.5			104.7			41.9			96.6	
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	385	1942		608	1548			428	597		455	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.07	0.41		0.17	0.49			0.25	0.18		0.31	

Intersection Summary

Area Type:	Other
Cycle Length:	96.2
Actuated Cycle Length:	74.6
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	13.6
Intersection LOS:	B
Intersection Capacity Utilization:	70.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 7: Commercial Street & Cornwallis Avenue





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	704	206	13	806	251	11
Future Volume (vph)	704	206	13	806	251	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		50.0	30.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.97	
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1883	1601	1789	1883	1789	1601
Flt Permitted			0.193		0.950	
Satd. Flow (perm)	1883	1601	364	1883	1737	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		139				11
Link Speed (k/h)	50			50	50	
Link Distance (m)	238.4			257.5	70.8	
Travel Time (s)	17.2			18.5	5.1	
Confl. Peds. (#/hr)					9	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	733	215	14	840	261	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	733	215	14	840	261	11
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Total Split (s)	45.9	45.9	20.7	45.9	31.1	31.1
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	40.6	40.6	42.8	42.6	15.3	15.3
Actuated g/C Ratio	0.58	0.58	0.61	0.61	0.22	0.22
v/c Ratio	0.67	0.22	0.04	0.73	0.67	0.03
Control Delay	16.9	4.7	6.8	15.4	34.6	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	4.7	6.8	15.4	34.6	12.5
LOS	B	A	A	B	C	B
Approach Delay	14.1			15.3	33.7	
Approach LOS	B			B	C	
Stops (vph)	444	40	6	546	214	6
Fuel Used(l)	35	6	1	42	13	0
CO Emissions (g/hr)	652	117	10	772	245	6

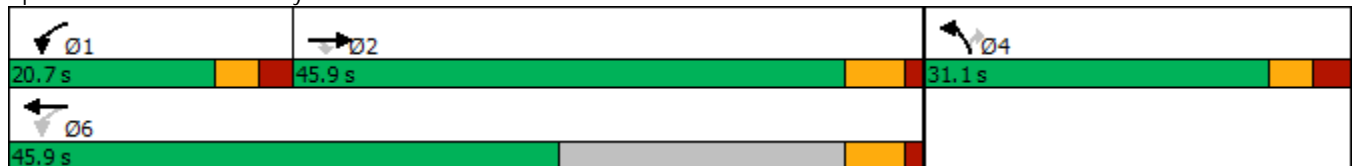


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	126	23	2	149	47	1
VOC Emissions (g/hr)	150	27	2	178	56	1
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	52.5	3.5	0.6	66.4	29.7	0.0
Queue Length 95th (m)	#175.1	19.7	3.1	143.8	61.2	3.8
Internal Link Dist (m)	214.4			233.5	46.8	
Turn Bay Length (m)		50.0	30.0			
Base Capacity (vph)	1091	986	532	1656	648	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.22	0.03	0.51	0.40	0.02

**Intersection Summary**

Area Type: Other  
 Cycle Length: 97.7  
 Actuated Cycle Length: 70.1  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 17.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 66.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 8: Valley View Drive & Commercial Street**





Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	941	943	80	44	45
Future Vol, veh/h	29	941	943	80	44	45
Conflicting Peds, #/hr	2	0	0	2	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	34	1094	1097	93	51	52

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1192	0	-	0	2308 1152
Stage 1	-	-	-	-	1146 -
Stage 2	-	-	-	-	1162 -
Critical Hdwy	4.12	-	-	-	6.43 6.22
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.218	-	-	-	3.527 3.318
Pot Cap-1 Maneuver	586	-	-	-	- 42 241
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	296 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	585	-	-	-	- 39 239
Mov Cap-2 Maneuver	-	-	-	-	150 -
Stage 1	-	-	-	-	284 -
Stage 2	-	-	-	-	295 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	46.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	585	-	-	-	185
HCM Lane V/C Ratio	0.058	-	-	-	0.559
HCM Control Delay (s)	11.5	-	-	-	46.7
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	3

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

New Minas Transportation Study  
10: Prospect Road/Driveway & Commercial Street

Scenario 2 Background Growth PM

12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	620	25	214	769	8	60	24	234	56	33	21
Future Volume (vph)	9	620	25	214	769	8	60	24	234	56	33	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%				0%
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.99					0.99
Frt		0.994			0.999			0.864				0.941
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1870	0	1789	1881	0	1789	1627	0	1789	1728	0
Flt Permitted	0.312			0.123			0.715			0.299		
Satd. Flow (perm)	587	1870	0	232	1881	0	1328	1627	0	563	1728	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			275				25
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	3		5	5		3	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	11	729	29	252	905	9	71	28	275	66	39	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	758	0	252	914	0	71	303	0	66	64	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	45.2	45.2		20.4	45.2		30.6	30.6		30.6	30.6	
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6	5.6	
Act Effect Green (s)	40.4	40.4		58.2	58.4		13.4	13.4		13.4	13.4	
Actuated g/C Ratio	0.49	0.49		0.70	0.71		0.16	0.16		0.16	0.16	
v/c Ratio	0.04	0.83		0.63	0.69		0.33	0.61		0.73	0.21	
Control Delay	15.1	30.1		18.5	11.6		34.8	11.4		74.3	21.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	30.1		18.5	11.6		34.8	11.4		74.3	21.8	
LOS	B	C		B	B		C	B		E	C	
Approach Delay		29.8			13.1			15.8				48.5
Approach LOS		C			B			B				D
Stops (vph)	6	493		95	434		49	45		52	30	
Fuel Used(l)	1	61		13	44		4	8		5	2	
CO Emissions (g/hr)	13	1130		238	823		69	143		90	38	

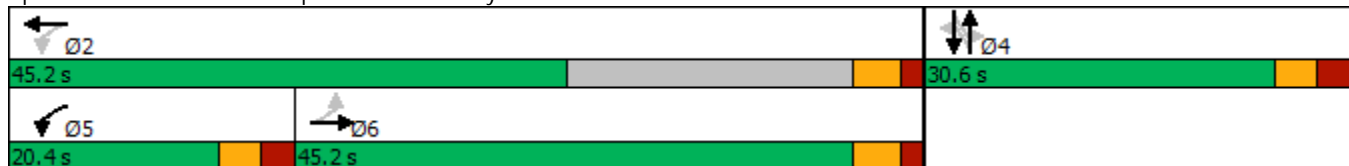


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	3	218		46	159		13	28		17	7	
VOC Emissions (g/hr)	3	261		55	190		16	33		21	9	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	0.9	100.5		13.3	66.4		10.2	3.9		10.2	5.5	
Queue Length 95th (m)	4.1	#185.2		40.1	136.6		20.3	20.0		22.6	14.3	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	286	914		448	1386		405	687		171	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.83		0.56	0.66		0.18	0.44		0.39	0.12	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 96.2  
 Actuated Cycle Length: 82.7  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 20.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 86.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

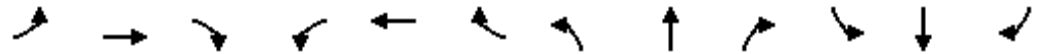
Splits and Phases: 10: Prospect Road/Driveway & Commercial Street



New Minas Transportation Study  
 11: Highbury Road & Commercial Street

Scenario 2 Background Growth PM

12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	763	48	45	838	6	46	31	34	59	29	60
Future Volume (vph)	19	763	48	45	838	6	46	31	34	59	29	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			1.00	
Frt		0.991			0.999			0.958			0.945	
Flt Protected	0.950			0.950				0.980			0.981	
Satd. Flow (prot)	1789	1861	0	1789	1881	0	0	1747	0	0	1739	0
Flt Permitted	0.153			0.157				0.776			0.837	
Satd. Flow (perm)	288	1861	0	296	1881	0	0	1383	0	0	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4						23			36	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	5%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	803	51	47	882	6	48	33	36	62	31	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	854	0	47	888	0	0	117	0	0	156	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	16.8	46.0		16.5	45.7		28.6	28.6		28.6	28.6	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	46.6	43.5		48.2	46.4			11.4			11.4	
Actuated g/C Ratio	0.63	0.59		0.65	0.62			0.15			0.15	
v/c Ratio	0.06	0.78		0.14	0.76			0.50			0.60	
Control Delay	5.5	22.1		5.9	19.5			31.0			32.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.5	22.1		5.9	19.5			31.0			32.7	
LOS	A	C		A	B			C			C	
Approach Delay		21.7			18.8			31.0			32.7	
Approach LOS		C			B			C			C	
Stops (vph)	8	559		16	520			78			102	
Fuel Used(l)	1	71		3	70			6			8	
CO Emissions (g/hr)	24	1315		56	1301			112			140	

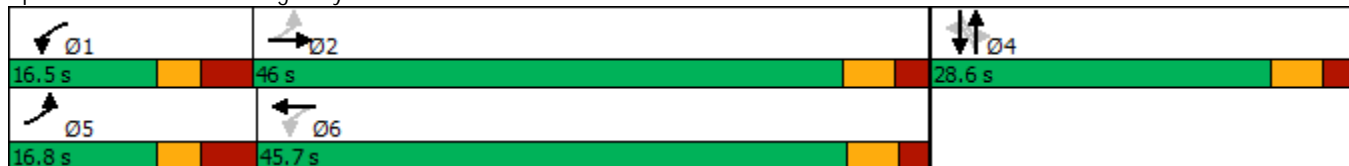


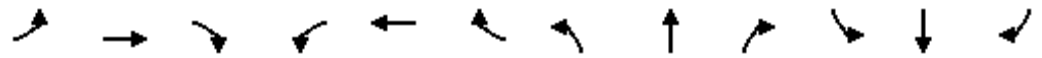
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	5	254		11	251			22				27
VOC Emissions (g/hr)	6	303		13	300			26				32
Dilemma Vehicles (#)	0	0		0	0			0				0
Queue Length 50th (m)	0.8	101.1		1.8	59.4			12.6				16.3
Queue Length 95th (m)	3.2	#201.4		5.8	#210.4			27.4				34.0
Internal Link Dist (m)		552.1			544.7			128.7				84.5
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	391	1091		399	1173			449				489
Starvation Cap Reductn	0	0		0	0			0				0
Spillback Cap Reductn	0	0		0	0			0				0
Storage Cap Reductn	0	0		0	0			0				0
Reduced v/c Ratio	0.05	0.78		0.12	0.76			0.26				0.32

Intersection Summary

Area Type: Other  
 Cycle Length: 91.1  
 Actuated Cycle Length: 74.3  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 21.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 64.6%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

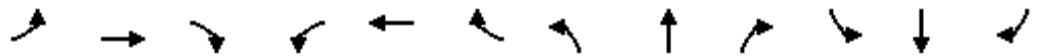
Splits and Phases: 11: Highbury Road & Commercial Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	480	205	171	471	513	153	151	108	371	190	34
Future Volume (vph)	48	480	205	171	471	513	153	151	108	371	190	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	70.0		70.0	50.0		50.0	100.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.98				0.98		0.99		1.00	
Frt			0.850				0.850		0.937			0.977
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	3185	0	1789	3439	0
Flt Permitted	0.383			0.286			0.442			0.585		
Satd. Flow (perm)	721	1883	1576	539	1883	1568	832	3185	0	1099	3439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			404		113				12
Link Speed (k/h)		50			50			80				80
Link Distance (m)		192.5			576.1			411.6				196.8
Travel Time (s)		13.9			41.5			18.5				8.9
Confl. Peds. (#/hr)	5		2	2		5			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	8%	4%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	500	214	178	491	534	159	157	113	386	198	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	500	214	178	491	534	159	270	0	386	233	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	16.3	55.2	55.2	20.7	55.2	55.2	36.5	56.0		16.5	41.0	
Total Lost Time (s)	6.3	5.2	5.2	5.7	5.2	5.2	6.5	6.0		6.5	6.0	
Act Effect Green (s)	56.5	50.2	50.2	65.3	56.5	56.5	28.0	15.7		22.1	12.6	
Actuated g/C Ratio	0.51	0.45	0.45	0.59	0.51	0.51	0.25	0.14		0.20	0.11	
v/c Ratio	0.11	0.59	0.27	0.40	0.51	0.54	0.49	0.49		1.37	0.58	
Control Delay	11.8	27.5	7.3	13.4	22.4	7.3	36.4	27.9		219.3	51.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.8	27.5	7.3	13.4	22.4	7.3	36.4	27.9		219.3	51.0	
LOS	B	C	A	B	C	A	D	C		F	D	
Approach Delay		20.8			14.4			31.1			155.9	
Approach LOS		C			B			C			F	
Stops (vph)	23	352	38	73	310	98	115	130		309	195	
Fuel Used(l)	2	27	6	13	41	33	29	44		93	28	
CO Emissions (g/hr)	34	499	107	237	760	616	540	814		1736	518	



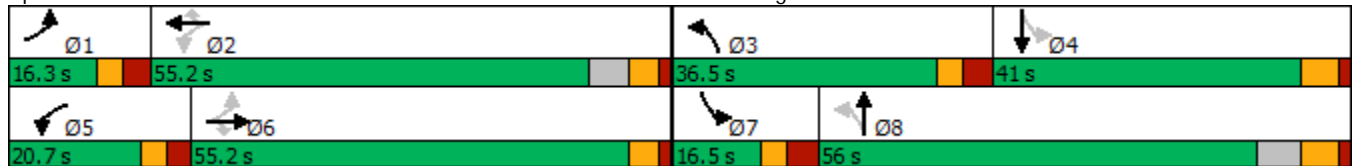


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	7	96	21	46	147	119	104	157		335	100	
VOC Emissions (g/hr)	8	115	25	55	175	142	125	188		400	119	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	11		0	10	
Queue Length 50th (m)	4.2	78.0	6.5	15.9	71.1	15.2	26.7	16.2		-81.9	24.0	
Queue Length 95th (m)	10.8	133.4	24.1	31.0	118.6	49.7	45.6	29.5		#143.6	39.4	
Internal Link Dist (m)		168.5			552.1			387.6			172.8	
Turn Bay Length (m)	50.0		25.0	70.0		70.0	50.0			100.0		
Base Capacity (vph)	482	854	801	495	972	1005	511	1646		282	1100	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.59	0.27	0.36	0.51	0.53	0.31	0.16		1.37	0.21	

Intersection Summary

Area Type: Other  
 Cycle Length: 153.4  
 Actuated Cycle Length: 110.7  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.37  
 Intersection Signal Delay: 47.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 82.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street



New Minas Transportation Study  
 13: New Minas Connector Road & Prospect Road

Scenario 2 Background Growth PM  
 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	16	55	46	325	54	78	53	318	308	88	449	29
Future Volume (vph)	16	55	46	325	54	78	53	318	308	88	449	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	60.0		0.0	60.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.912			0.926			0.991	
Flt Protected		0.993		0.950			0.950			0.950		
Satd. Flow (prot)	0	1771	0	1772	1688	0	1789	1703	0	1755	1866	0
Flt Permitted		0.954		0.742			0.382			0.256		
Satd. Flow (perm)	0	1702	0	1384	1688	0	719	1703	0	473	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			82			76				5
Link Speed (k/h)		50			50			80				80
Link Distance (m)		133.5			262.5			70.9				257.2
Travel Time (s)		9.6			18.9			3.2				11.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	3%	6%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	17	58	48	342	57	82	56	335	324	93	473	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	123	0	342	139	0	56	659	0	93	504	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2				6
Permitted Phases	4			4			2			6		
Total Split (s)	39.8	39.8		39.8	39.8		42.1	42.1		42.1	42.1	
Total Lost Time (s)		5.8		5.8	5.8		6.1	6.1		6.1	6.1	
Act Effect Green (s)		22.7		22.7	22.7		36.4	36.4		36.4	36.4	
Actuated g/C Ratio		0.32		0.32	0.32		0.51	0.51		0.51	0.51	
v/c Ratio		0.21		0.78	0.23		0.15	0.73		0.38	0.53	
Control Delay		11.5		34.2	8.6		13.2	19.8		19.6	15.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		11.5		34.2	8.6		13.2	19.8		19.6	15.7	
LOS		B		C	A		B	B		B	B	
Approach Delay		11.5			26.8			19.3			16.3	
Approach LOS		B			C			B			B	
Stops (vph)		48		275	40		29	409		58	311	
Fuel Used(l)		4		23	5		2	36		15	80	
CO Emissions (g/hr)		67		424	94		46	679		281	1497	

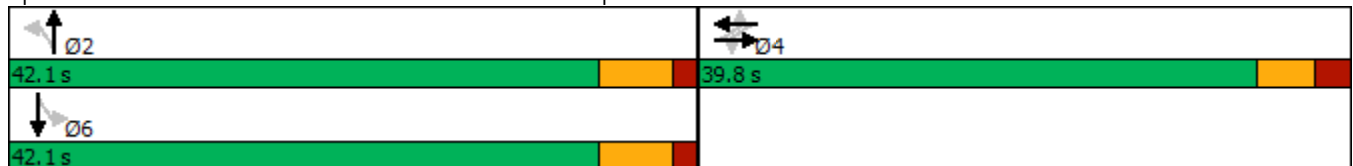


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)		13		82	18		9	131		54	289	
VOC Emissions (g/hr)		15		98	22		11	157		65	345	
Dilemma Vehicles (#)		0		0	0		0	42		0	33	
Queue Length 50th (m)		6.9		40.3	5.2		3.6	55.1		6.9	40.7	
Queue Length 95th (m)		16.9		67.2	15.5		12.6	#141.0		24.0	88.2	
Internal Link Dist (m)		109.5			238.5			46.9			233.2	
Turn Bay Length (m)				60.0			60.0			70.0		
Base Capacity (vph)		847		668	858		367	908		242	957	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.15		0.51	0.16		0.15	0.73		0.38	0.53	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 81.9  
 Actuated Cycle Length: 71.1  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 19.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 81.1%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 13: New Minas Connector Road & Prospect Road**



Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕		↕	↑			↕	
Traffic Vol, veh/h	0	0	0	26	0	264	19	415	0	0	482	338
Future Vol, veh/h	0	0	0	26	0	264	19	415	0	0	482	338
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	5	2	5	2	3	2	2	2	4
Mvmt Flow	0	0	0	27	0	272	20	428	0	0	497	348

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	1139	1313	428	845	0	-	0
Stage 1	468	468	-	-	-	-	-
Stage 2	671	845	-	-	-	-	-
Critical Hdwy	6.45	6.52	6.25	4.12	-	-	-
Critical Hdwy Stg 1	5.45	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.45	5.52	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.345	2.218	-	-	-
Pot Cap-1 Maneuver	220	158	620	792	-	0	0
Stage 1	624	561	-	-	-	0	0
Stage 2	502	379	-	-	-	0	0
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	215	0	620	792	-	-	-
Mov Cap-2 Maneuver	215	0	-	-	-	-	-
Stage 1	608	0	-	-	-	-	-
Stage 2	502	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.2	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	792	-	530	-
HCM Lane V/C Ratio	0.025	-	0.564	-
HCM Control Delay (s)	9.7	-	20.2	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.1	-	3.5	-

Intersection												
Int Delay, s/veh	89.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↔		↔	↕	
Traffic Vol, veh/h	293	0	36	0	0	0	0	141	11	294	214	0
Future Vol, veh/h	293	0	36	0	0	0	0	141	11	294	214	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	2	3	2	2	2	2	2	11	2	2	2
Mvmt Flow	302	0	37	0	0	0	0	145	11	303	221	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	978	983	221	-	0	0	156	0	0
Stage 1	827	827	-	-	-	-	-	-	-
Stage 2	151	156	-	-	-	-	-	-	-
Critical Hdwy	6.45	6.52	6.23	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.45	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.45	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.327	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 274	249	816	0	-	-	1424	-	0
Stage 1	424	386	-	0	-	-	-	-	0
Stage 2	870	769	-	0	-	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	~ 216	0	816	-	-	-	1424	-	-
Mov Cap-2 Maneuver	~ 216	0	-	-	-	-	-	-	-
Stage 1	424	0	-	-	-	-	-	-	-
Stage 2	685	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	261.1	0	4.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	1424	-
HCM Lane V/C Ratio	-	-	1.443	0.213	-
HCM Control Delay (s)	-	-	261.1	8.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	19.5	0.8	-

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	71	81	6	134	116
Future Vol, veh/h	6	71	81	6	134	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	83	94	7	156	135

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	545	98	0	0	101
Stage 1	98	-	-	-	-
Stage 2	447	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	499	958	-	-	1491
Stage 1	926	-	-	-	-
Stage 2	644	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	447	958	-	-	1491
Mov Cap-2 Maneuver	447	-	-	-	-
Stage 1	926	-	-	-	-
Stage 2	576	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	880	1491
HCM Lane V/C Ratio	-	-	0.102	0.105
HCM Control Delay (s)	-	-	9.6	7.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:30	3:30	3:30	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6945	6964	6948	7082	6887	7150	7067
Vehs Exited	6889	6956	6950	7092	6891	7148	7003
Starting Vehs	280	305	345	329	348	306	292
Ending Vehs	336	313	343	319	344	308	356
Travel Distance (km)	9840	9872	9967	10136	9766	10118	10073
Travel Time (hr)	408.3	379.7	390.9	379.6	399.9	346.6	380.2
Total Delay (hr)	217.4	188.1	198.2	182.5	209.7	149.8	184.3
Total Stops	9187	8924	8673	9241	8744	10107	9490
Fuel Used (l)	960.6	939.4	950.4	952.2	948.3	925.5	949.9

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6893	6973	6993	6985
Vehs Exited	6813	7059	7001	6981
Starting Vehs	291	404	339	315
Ending Vehs	371	318	331	321
Travel Distance (km)	9910	9974	9955	9961
Travel Time (hr)	424.9	417.6	438.0	396.6
Total Delay (hr)	232.1	224.1	243.6	203.0
Total Stops	9015	9386	10702	9348
Fuel Used (l)	978.3	980.8	986.9	957.2

Interval #0 Information Seeding

Start Time	3:30
End Time	4:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1664	1693	1670	1713	1680	1743	1767
Vehs Exited	1632	1704	1690	1712	1685	1740	1736
Starting Vehs	280	305	345	329	348	306	292
Ending Vehs	312	294	325	330	343	309	323
Travel Distance (km)	2327	2420	2410	2484	2446	2427	2509
Travel Time (hr)	78.2	83.6	89.0	79.0	88.0	70.7	80.0
Total Delay (hr)	32.8	36.6	42.3	30.9	40.2	23.7	31.1
Total Stops	2119	2239	2118	2175	2000	2179	2468
Fuel Used (l)	210.1	222.4	224.0	221.2	226.0	212.1	224.0

**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1663	1674	1742	1702
Vehs Exited	1625	1763	1771	1705
Starting Vehs	291	404	339	315
Ending Vehs	329	315	310	316
Travel Distance (km)	2391	2531	2482	2443
Travel Time (hr)	92.0	91.1	93.0	84.5
Total Delay (hr)	45.4	42.3	44.5	37.0
Total Stops	2085	2190	2287	2184
Fuel Used (l)	227.0	235.7	231.8	223.4

**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1852	1825	1804	1848	1861	1916	1867
Vehs Exited	1774	1713	1761	1790	1832	1852	1802
Starting Vehs	312	294	325	330	343	309	323
Ending Vehs	390	406	368	388	372	373	388
Travel Distance (km)	2595	2455	2602	2533	2529	2675	2648
Travel Time (hr)	107.1	94.8	103.2	93.3	103.1	88.6	95.9
Total Delay (hr)	56.8	47.3	52.7	43.8	54.0	36.5	44.6
Total Stops	2436	2364	2357	2328	2403	2706	2646
Fuel Used (l)	252.3	233.9	248.4	236.3	245.8	240.9	246.6

**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1861	1865	1794	1851
Vehs Exited	1768	1788	1701	1778
Starting Vehs	329	315	310	316
Ending Vehs	422	392	403	384
Travel Distance (km)	2604	2534	2471	2565
Travel Time (hr)	110.3	106.9	105.9	100.9
Total Delay (hr)	59.9	57.4	57.7	51.1
Total Stops	2539	2578	2711	2505
Fuel Used (l)	256.7	248.9	241.6	245.1

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1713	1722	1720	1756	1703	1782	1704
Vehs Exited	1778	1818	1755	1779	1725	1773	1789
Starting Vehs	390	406	368	388	372	373	388
Ending Vehs	325	310	333	365	350	382	303
Travel Distance (km)	2513	2566	2532	2594	2442	2545	2505
Travel Time (hr)	112.4	100.6	99.1	102.3	104.3	95.1	99.0
Total Delay (hr)	63.5	51.1	50.5	51.8	56.7	45.6	50.1
Total Stops	2372	2213	2136	2473	2306	2820	2253
Fuel Used (l)	251.3	246.3	242.7	249.2	241.8	240.8	239.8

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1679	1702	1737	1716
Vehs Exited	1778	1740	1748	1767
Starting Vehs	422	392	403	384
Ending Vehs	323	354	392	332
Travel Distance (km)	2545	2454	2487	2518
Travel Time (hr)	112.8	109.5	125.1	106.0
Total Delay (hr)	63.0	61.7	76.7	57.1
Total Stops	2378	2503	3186	2463
Fuel Used (l)	254.0	247.1	260.1	247.3

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1716	1724	1754	1765	1643	1709	1729
Vehs Exited	1705	1721	1744	1811	1649	1783	1676
Starting Vehs	325	310	333	365	350	382	303
Ending Vehs	336	313	343	319	344	308	356
Travel Distance (km)	2405	2430	2423	2525	2348	2470	2411
Travel Time (hr)	110.7	100.6	99.7	104.9	104.6	92.2	105.3
Total Delay (hr)	64.2	53.2	52.7	56.0	58.8	44.0	58.6
Total Stops	2260	2108	2062	2265	2035	2402	2123
Fuel Used (l)	246.9	236.7	235.3	245.5	234.7	231.7	239.5

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1690	1732	1720	1717
Vehs Exited	1642	1768	1781	1727
Starting Vehs	323	354	392	332
Ending Vehs	371	318	331	321
Travel Distance (km)	2370	2455	2515	2435
Travel Time (hr)	109.8	110.1	114.0	105.2
Total Delay (hr)	63.7	62.7	64.8	57.9
Total Stops	2013	2115	2518	2188
Fuel Used (l)	240.5	249.1	253.4	241.3

**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.3	0.2	0.1	0.1
Total Delay (hr)	0.9	0.1	0.1	0.2	0.3	0.1	1.6
Total Del/Veh (s)	5.4	4.9	6.7	1.5	15.0	8.4	4.7
Stop Delay (hr)	0.0	0.0	0.0	0.1	0.2	0.1	0.4
Stop Del/Veh (s)	0.0	0.0	4.4	0.4	12.7	7.7	1.1

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.2	0.4	0.2	1.0	0.2	0.3	0.4	0.3	0.2	0.1	0.1	0.1
Total Delay (hr)	0.1	2.1	0.2	0.4	1.6	0.0	2.5	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	16.9	13.9	3.3	14.7	11.1	11.2	42.5	35.1	2.3	27.9	35.4	10.3
Stop Delay (hr)	0.0	1.4	0.0	0.2	0.6	0.0	2.3	0.1	0.0	0.1	0.1	0.0
Stop Del/Veh (s)	12.7	9.2	0.0	8.0	4.0	5.3	38.3	29.7	0.0	26.2	32.3	9.8

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	7.1
Total Del/Veh (s)	14.9
Stop Delay (hr)	4.7
Stop Del/Veh (s)	9.8

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.6	3.8	0.2	0.2	0.2
Total Delay (hr)	0.1	2.2	0.1	0.2	1.6	0.0	0.6	0.1	0.2	0.6	0.2	0.1
Total Del/Veh (s)	19.5	11.9	10.3	9.3	8.9	7.0	26.2	25.1	5.5	26.0	24.5	15.2
Stop Delay (hr)	0.1	1.1	0.0	0.2	0.8	0.0	0.5	0.1	0.1	0.5	0.2	0.1
Stop Del/Veh (s)	14.0	6.2	6.0	7.1	4.6	4.3	24.0	21.6	4.9	22.8	20.0	13.9

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.5
Total Delay (hr)	6.0
Total Del/Veh (s)	11.9
Stop Delay (hr)	3.9
Stop Del/Veh (s)	7.7



**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.5	0.2	0.3	0.2	0.1
Total Delay (hr)	2.1	0.3	0.1	3.2	1.7	0.0	7.4
Total Del/Veh (s)	10.2	5.9	18.3	14.1	23.8	8.0	13.1
Stop Delay (hr)	1.1	0.1	0.0	1.5	1.5	0.0	4.2
Stop Del/Veh (s)	5.1	2.1	11.5	6.8	20.8	8.2	7.5

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Denied Del/Veh (s)	0.4	0.1	0.1	0.1	6.9	4.7	0.4
Total Delay (hr)	0.1	0.9	1.6	0.1	1.7	1.3	5.8
Total Del/Veh (s)	14.2	3.6	5.9	4.6	133.6	98.4	9.9
Stop Delay (hr)	0.1	0.1	0.4	0.0	1.7	1.3	3.5
Stop Del/Veh (s)	9.7	0.3	1.3	1.1	132.8	98.8	6.1

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.4	0.4	0.0	3.6	0.4	0.5	0.1	0.2	0.2
Total Delay (hr)	0.1	3.8	0.1	2.4	6.7	0.1	0.5	0.2	1.0	0.6	0.2	0.1
Total Del/Veh (s)	34.1	17.5	18.9	41.0	30.9	29.6	30.7	26.3	15.5	37.1	23.0	13.7
Stop Delay (hr)	0.1	2.0	0.1	1.6	3.7	0.0	0.4	0.1	0.8	0.5	0.2	0.1
Stop Del/Veh (s)	25.6	9.5	11.5	27.3	16.8	17.3	27.1	21.3	13.1	34.6	19.9	13.0

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.8
Total Del/Veh (s)	25.3
Stop Delay (hr)	9.8
Stop Del/Veh (s)	15.6

**11: Highbury Road & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.1	3.5	0.2	0.3	4.4	0.0	0.3	0.2	0.1	0.4	0.2	0.3
Total Del/Veh (s)	22.2	15.0	14.0	24.0	18.2	13.0	24.0	23.9	14.6	27.7	24.7	16.8
Stop Delay (hr)	0.1	1.6	0.1	0.2	1.8	0.0	0.2	0.2	0.1	0.4	0.2	0.3
Stop Del/Veh (s)	13.9	7.0	7.7	14.0	7.5	4.8	21.1	19.7	13.3	24.6	20.1	15.3

**11: Highbury Road & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	10.1
Total Del/Veh (s)	17.4
Stop Delay (hr)	5.2
Stop Del/Veh (s)	9.0

**12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.4	1.3	3.4	1.2	0.8	1.3	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.4	4.4	1.2	1.2	3.2	1.7	1.6	2.2	0.3	25.6	3.2	0.2
Total Del/Veh (s)	27.8	32.7	19.7	25.5	24.0	11.6	36.8	49.0	10.0	276.0	72.8	21.1
Stop Delay (hr)	0.3	3.2	0.8	0.7	1.7	0.1	1.3	1.8	0.1	25.6	2.7	0.1
Stop Del/Veh (s)	20.1	23.7	12.6	14.8	12.7	0.7	30.5	39.3	4.8	276.5	62.1	15.3

**12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.8
Denied Del/Veh (s)	1.0
Total Delay (hr)	45.1
Total Del/Veh (s)	56.6
Stop Delay (hr)	38.5
Stop Del/Veh (s)	48.2

**13: New Minas Connector Road & Prospect Road Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.2	3.5	0.9	0.9	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	0.3	0.0	2.8	0.3	0.1	0.3	1.5	0.3	0.5	1.8	0.1
Total Del/Veh (s)	17.9	18.7	2.8	29.9	22.0	4.3	21.9	16.0	3.8	21.5	14.7	8.0
Stop Delay (hr)	0.1	0.2	0.0	2.3	0.2	0.0	0.3	0.9	0.2	0.4	0.9	0.0
Stop Del/Veh (s)	15.1	14.9	0.2	24.8	15.7	0.2	19.8	10.3	1.8	17.8	7.1	5.4

**13: New Minas Connector Road & Prospect Road Performance by movement**

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.7
Total Delay (hr)	8.1
Total Del/Veh (s)	15.9
Stop Delay (hr)	5.5
Stop Del/Veh (s)	11.0

**14: New Minas Connector Road & H101 WB Off-Ramp Performance by movement**

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.2	1.9	0.0	0.4	0.7	0.2	3.6
Total Del/Veh (s)	34.5	25.2	9.0	3.9	5.2	2.5	8.3
Stop Delay (hr)	0.2	1.7	0.0	0.1	0.1	0.1	2.2
Stop Del/Veh (s)	30.0	22.2	7.1	0.6	0.6	0.6	5.0

**15: New Canaan Road/New Minas Connector Road & H101 EB Off-Ramp Performance by movement**

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.8	0.1	0.1	0.0	0.3	0.2	2.5
Total Del/Veh (s)	22.2	14.8	1.8	0.2	4.0	3.1	9.2
Stop Delay (hr)	1.4	0.1	0.0	0.0	0.1	0.0	1.6
Stop Del/Veh (s)	17.2	11.5	0.1	0.1	0.6	0.0	5.7

16: New Canaan Road & Highbury School Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	5.3	2.5	0.5	0.1	1.6	0.5	1.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.4	2.1	0.0	0.0	0.3	0.0	0.5

Total Network Performance

Denied Delay (hr)	51.4
Denied Del/Veh (s)	26.1
Total Delay (hr)	151.6
Total Del/Veh (s)	74.7
Stop Delay (hr)	108.1
Stop Del/Veh (s)	53.3

**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	7.0	438.3	41.6	27.8
Average Queue (m)	0.3	21.9	9.0	11.7
95th Queue (m)	3.6	247.2	30.0	21.9
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	1			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	L	TR	LT	LTR
Maximum Queue (m)	25.4	104.5	29.9	81.9	83.5	17.0
Average Queue (m)	3.1	47.3	12.0	31.7	41.5	3.9
95th Queue (m)	13.6	88.5	23.2	64.8	69.0	12.5
Link Distance (m)	157.3		873.9		82.0	86.5
Upstream Blk Time (%)						1
Queuing Penalty (veh)						0
Storage Bay Dist (m)	25.0	100.0				
Storage Blk Time (%)	0	17	0			
Queuing Penalty (veh)	0	3	0			

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	24.0	73.9	42.5	39.7	105.7	37.6	28.1	47.3
Average Queue (m)	5.3	27.9	24.1	8.4	37.3	13.4	7.8	19.3
95th Queue (m)	16.2	56.7	46.5	25.1	78.6	27.7	17.6	35.9
Link Distance (m)	240.7		118.4		118.4	54.0	111.4	
Upstream Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		
Storage Bay Dist (m)	25.0	40.0					35.0	
Storage Blk Time (%)	0	7	1				0	0
Queuing Penalty (veh)	0	30	4				0	0

**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	99.4	52.2	23.2	126.2	62.7	7.8
Average Queue (m)	46.7	18.2	3.4	58.1	32.1	1.3
95th Queue (m)	81.9	46.7	14.2	112.0	53.4	5.5
Link Distance (m)	224.9			240.7	60.4	60.4
Upstream Blk Time (%)					1	
Queuing Penalty (veh)					0	
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	4	0	0	16		
Queuing Penalty (veh)	9	2	0	2		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	14.8	22.6	56.1	76.2
Average Queue (m)	4.9	1.6	9.8	32.1
95th Queue (m)	13.2	11.3	68.8	81.4
Link Distance (m)		361.5	224.9	103.9
Upstream Blk Time (%)			0	6
Queuing Penalty (veh)			1	0
Storage Bay Dist (m)	25.0			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

**Intersection: 10: Prospect Road/Driveway & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	28.3	114.7	27.3	266.8	37.6	65.9	26.2	29.8
Average Queue (m)	3.1	59.3	22.7	117.0	11.9	28.5	11.4	10.1
95th Queue (m)	15.0	103.2	32.7	274.9	26.9	52.5	22.0	22.4
Link Distance (m)		551.4		361.5		173.0	80.9	80.9
Upstream Blk Time (%)				0				
Queuing Penalty (veh)				2				
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	20	7	21	0	1		
Queuing Penalty (veh)	0	2	56	45	0	1		



**Intersection: 11: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	23.8	342.7	27.3	151.2	36.8	45.4
Average Queue (m)	4.2	75.6	8.0	68.3	14.6	19.7
95th Queue (m)	14.9	252.9	21.4	127.1	28.5	36.3
Link Distance (m)		556.7		551.4	143.8	98.9
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	18	0	20		
Queuing Penalty (veh)	0	4	0	9		

**Intersection: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	B6	SB	SB
Directions Served	L	T	R	L	T	R	L	T	TR	T	L	T
Maximum Queue (m)	52.2	176.3	27.5	69.6	164.8	72.5	51.8	79.8	52.0	42.6	102.4	205.3
Average Queue (m)	12.7	92.4	21.9	24.1	59.0	16.9	28.4	32.3	17.2	2.3	101.8	190.6
95th Queue (m)	38.4	161.2	38.3	49.0	122.5	67.0	49.7	60.0	44.8	38.7	108.1	242.8
Link Distance (m)		181.3			556.7			400.3		240.4		182.7
Upstream Blk Time (%)		1										85
Queuing Penalty (veh)		0										0
Storage Bay Dist (m)	50.0		25.0	70.0		70.0	50.0		50.0		100.0	
Storage Blk Time (%)	0	34	2	0	3	0	1	1	0		89	19
Queuing Penalty (veh)	0	86	9	0	17	2	3	4	0		84	72

**Intersection: 12: New Minas Connector Road/Cornwallis River Crossing & Commercial Street**

Movement	SB	B32
Directions Served	TR	T
Maximum Queue (m)	44.7	260.1
Average Queue (m)	21.3	225.9
95th Queue (m)	38.4	339.3
Link Distance (m)	182.7	243.7
Upstream Blk Time (%)		81
Queuing Penalty (veh)		0
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 13: New Minas Connector Road & Prospect Road**

Movement	EB	WB	WB	NB	NB	SB	SB	B20
Directions Served	LTR	L	TR	L	TR	L	TR	T
Maximum Queue (m)	27.8	62.1	95.4	34.6	57.8	38.0	70.6	40.7
Average Queue (m)	10.7	42.4	15.5	8.9	32.9	11.1	30.6	1.5
95th Queue (m)	22.7	63.4	55.2	22.8	59.5	27.9	58.9	41.5
Link Distance (m)	123.6		250.8		55.2		240.4	400.3
Upstream Blk Time (%)				0	1			0
Queuing Penalty (veh)				0	10			0
Storage Bay Dist (m)		60.0		60.0		70.0		
Storage Blk Time (%)		3	0	0	1	0	0	
Queuing Penalty (veh)		3	1	0	1	0	0	

**Intersection: 14: New Minas Connector Road & H101 WB Off-Ramp**

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (m)	79.5	11.6	25.0	37.7
Average Queue (m)	34.3	3.2	1.8	2.1
95th Queue (m)	79.0	10.1	12.5	19.4
Link Distance (m)	279.6		111.3	55.2
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (m)		50.0		
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

**Intersection: 15: New Canaan Road/New Minas Connector Road & H101 EB Off-Ramp**

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (m)	79.5	21.7
Average Queue (m)	32.2	9.2
95th Queue (m)	62.4	19.1
Link Distance (m)	290.9	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		50.0
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

**Intersection: 16: New Canaan Road & Highbury School Road**

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (m)	17.8	12.8
Average Queue (m)	8.9	2.8
95th Queue (m)	13.7	9.9
Link Distance (m)	241.1	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	230.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 32: Bend**

Movement	NB
Directions Served	T
Maximum Queue (m)	34.7
Average Queue (m)	1.8
95th Queue (m)	30.7
Link Distance (m)	182.7
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Network Summary**

Network wide Queuing Penalty: 465
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Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	298	41	15	285	75	33
Future Vol, veh/h	298	41	15	285	75	33
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	6	3	8	4	7	8
Mvmt Flow	335	46	17	320	84	37

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	382	0	713
Stage 1	-	-	-	-	359
Stage 2	-	-	-	-	354
Critical Hdwy	-	-	4.18	-	6.47
Critical Hdwy Stg 1	-	-	-	-	5.47
Critical Hdwy Stg 2	-	-	-	-	5.47
Follow-up Hdwy	-	-	2.272	-	3.563
Pot Cap-1 Maneuver	-	-	1144	-	391
Stage 1	-	-	-	-	696
Stage 2	-	-	-	-	699
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1143	-	384
Mov Cap-2 Maneuver	-	-	-	-	384
Stage 1	-	-	-	-	695
Stage 2	-	-	-	-	686

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	442	-	-	1143	-
HCM Lane V/C Ratio	0.275	-	-	0.015	-
HCM Control Delay (s)	16.2	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-

New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	406	66	69	475	6	38	6	66	6	10	25
Future Volume (vph)	6	406	66	69	475	6	38	6	66	6	10	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			1.00	0.98		0.99	
Frt			0.850		0.998				0.850		0.919	
Flt Protected	0.950			0.950				0.959			0.992	
Satd. Flow (prot)	1789	1865	1601	1706	1873	0	0	1747	1512	0	1621	0
Flt Permitted	0.470			0.433				0.725			0.935	
Satd. Flow (perm)	873	1865	1601	777	1873	0	0	1318	1476	0	1527	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		1				75			27
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		163.1			885.4			89.5			94.5	
Travel Time (s)		11.7			63.7			6.4			6.8	
Confl. Peds. (#/hr)	13					13	1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	7%	2%	25%	3%	20%	8%	20%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	441	72	75	516	7	41	7	72	7	11	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	441	72	75	523	0	0	48	72	0	45	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	49.0	49.0	49.0	11.0	60.0		30.0	30.0	30.0	30.0	30.0	
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7		5.7	
Act Effect Green (s)	50.0	50.0	50.0	59.0	58.8			8.3	8.3		8.3	
Actuated g/C Ratio	0.67	0.67	0.67	0.79	0.79			0.11	0.11		0.11	
v/c Ratio	0.01	0.35	0.07	0.11	0.35			0.33	0.31		0.23	
Control Delay	6.8	8.6	1.8	2.9	4.1			36.5	11.7		19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	6.8	8.6	1.8	2.9	4.1			36.5	11.7		19.9	
LOS	A	A	A	A	A			D	B		B	
Approach Delay		7.6			3.9			21.6			19.9	
Approach LOS		A			A			C			B	
Stops (vph)	3	185	6	17	142			41	17		21	
Fuel Used(l)	0	13	1	13	90			3	2		1	
CO Emissions (g/hr)	4	244	23	239	1682			47	29		27	

New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	1	47	4	46	325			9	6		5	
VOC Emissions (g/hr)	1	56	5	55	388			11	7		6	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	0.4	28.9	0.0	1.9	19.5			6.3	0.0		2.3	
Queue Length 95th (m)	1.9	51.1	4.1	5.3	37.4			15.6	10.1		10.9	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	586	1252	1101	702	1479			430	532		516	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.35	0.07	0.11	0.35			0.11	0.14		0.09	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	74.5
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	7.6
Intersection LOS:	A
Intersection Capacity Utilization:	54.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 7: Commercial Street & Cornwallis Avenue 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	475	18	23	550	23	16	6	18	63	8	13
Future Volume (vph)	11	475	18	23	550	23	16	6	18	63	8	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			1.00			1.00	
Frt		0.995			0.994				0.850		0.979	
Flt Protected	0.950			0.950				0.964			0.964	
Satd. Flow (prot)	1644	3527	0	1722	1869	0	0	1816	1601	0	1673	0
Flt Permitted	0.434			0.409				0.791			0.766	
Satd. Flow (perm)	743	3527	0	741	1869	0	0	1486	1601	0	1329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			4				107			10
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		258.2			128.7			65.9			120.6	
Travel Time (s)		18.6			9.3			4.7			8.7	
Confl. Peds. (#/hr)	12					12	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	3%	2%	6%	2%	2%	2%	2%	2%	8%	17%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	505	19	24	585	24	17	6	19	67	9	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	524	0	24	609	0	0	23	19	0	90	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4		4	4		
Total Split (s)	45.0	45.0		13.0	58.0		32.0	32.0	32.0	32.0	32.0	
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4		5.4	
Act Effect Green (s)	51.4	51.4		55.1	56.8			9.8	9.8		9.8	
Actuated g/C Ratio	0.70	0.70		0.75	0.77			0.13	0.13		0.13	
v/c Ratio	0.02	0.21		0.04	0.42			0.12	0.06		0.49	
Control Delay	8.5	6.9		3.9	5.4			28.7	0.4		35.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	8.5	6.9		3.9	5.4			28.7	0.4		35.4	
LOS	A	A		A	A			C	A		D	
Approach Delay		7.0			5.3			15.9			35.4	
Approach LOS		A			A			B			D	
Stops (vph)	6	185		7	198			22	0		67	
Fuel Used(l)	0	19		1	14			1	0		5	
CO Emissions (g/hr)	9	351		9	256			21	2		89	



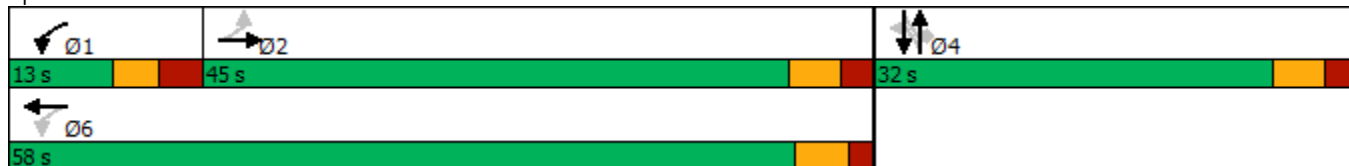


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	68		2	49			4	0			17
VOC Emissions (g/hr)	2	81		2	59			5	1			21
Dilemma Vehicles (#)	0	0		0	0			0	0			0
Queue Length 50th (m)	0.4	9.9		0.8	26.9			2.8	0.0			10.3
Queue Length 95th (m)	3.3	31.0		3.0	54.2			8.8	0.0			23.1
Internal Link Dist (m)		234.2			104.7			41.9				96.6
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	517	2457		646	1440			536	646			485
Starvation Cap Reductn	0	0		0	0			0	0			0
Spillback Cap Reductn	0	0		0	0			0	0			0
Storage Cap Reductn	0	0		0	0			0	0			0
Reduced v/c Ratio	0.02	0.21		0.04	0.42			0.04	0.03			0.19

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	73.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	8.4
Intersection LOS:	A
Intersection Capacity Utilization:	51.3%
ICU Level of Service:	A
Analysis Period (min):	15

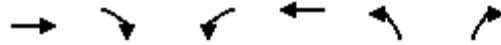
Splits and Phases: 7: Commercial Street & Cornwallis Avenue



New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 8: Valley View Drive & Commercial Street 12-19-2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	536	64	6	593	83	6
Future Volume (vph)	536	64	6	593	83	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%		
Storage Length (m)	50.0		30.0	0.0		0.0
Storage Lanes	1		1	1		1
Taper Length (m)	2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt	0.850					
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1865	1601	1789	1883	1789	1601
Flt Permitted			0.358		0.950	
Satd. Flow (perm)	1865	1601	674	1883	1768	1601
Right Turn on Red	Yes					
Satd. Flow (RTOR)	70					
Link Speed (k/h)	50			50	50	
Link Distance (m)	240.4			258.2	70.8	
Travel Time (s)	17.3			18.6	5.1	
Confl. Peds. (#/hr)					4	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	589	70	7	652	91	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	70	7	652	91	7
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1		6	
Permitted Phases	2		6		4	
Total Split (s)	55.0	55.0	13.0	68.0	22.0	22.0
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	63.9	63.9	65.3	66.3	9.7	9.7
Actuated g/C Ratio	0.76	0.76	0.78	0.79	0.12	0.12
v/c Ratio	0.42	0.06	0.01	0.44	0.44	0.04
Control Delay	7.2	2.1	3.3	5.3	41.4	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	2.1	3.3	5.3	41.4	19.5
LOS	A	A	A	A	D	B
Approach Delay	6.7			5.3	39.8	
Approach LOS	A			A	D	
Stops (vph)	207	6	2	196	73	5
Fuel Used(l)	20	2	0	21	5	0
CO Emissions (g/hr)	370	32	4	398	90	5

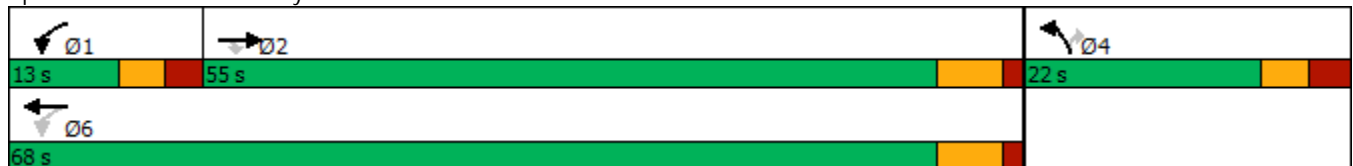


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	71	6	1	77	17	1
VOC Emissions (g/hr)	85	7	1	92	21	1
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	28.3	0.0	0.3	32.7	13.8	0.0
Queue Length 95th (m)	86.9	5.1	1.3	60.6	27.6	3.7
Internal Link Dist (m)	216.4			234.2	46.8	
Turn Bay Length (m)		50.0	30.0			
Base Capacity (vph)	1415	1232	619	1483	337	307
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.06	0.01	0.44	0.27	0.02

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	84.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	8.3
Intersection LOS:	A
Intersection Capacity Utilization	47.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 8: Valley View Drive & Commercial Street



Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	651	621	94	66	86
Future Vol, veh/h	103	651	621	94	66	86
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	25	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	6
Mvmt Flow	116	731	698	106	74	97

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	805	0	-	0	1715 753
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	963 -
Critical Hdwy	4.12	-	-	-	6.42 6.26
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.354
Pot Cap-1 Maneuver	819	-	-	-	99 403
Stage 1	-	-	-	-	466 -
Stage 2	-	-	-	-	370 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	818	-	-	-	85 402
Mov Cap-2 Maneuver	-	-	-	-	214 -
Stage 1	-	-	-	-	399 -
Stage 2	-	-	-	-	370 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	22.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	818	-	-	-	214	402
HCM Lane V/C Ratio	0.141	-	-	-	0.347	0.24
HCM Control Delay (s)	10.1	-	-	-	30.5	16.8
HCM Lane LOS	B	-	-	-	D	C
HCM 95th %tile Q(veh)	0.5	-	-	-	1.5	0.9

New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 10: Prospect Road/Driveway & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	581	20	110	535	6	64	19	210	41	30	19
Future Volume (vph)	20	581	20	110	535	6	64	19	210	41	30	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.99					0.99
Frt		0.995			0.998			0.862				0.943
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1874	0	1789	1879	0	1789	1609	0	1722	1732	0
Flt Permitted	0.435			0.261			0.721			0.364		
Satd. Flow (perm)	781	1874	0	492	1879	0	1340	1609	0	660	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			236				21
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	9					9	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	2%	13%	2%	6%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	22	653	22	124	601	7	72	21	236	46	34	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	675	0	124	608	0	72	257	0	46	55	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	51.4	51.4		13.6	65.0		25.0	25.0		25.0	25.0	
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6	5.6	
Act Effect Green (s)	50.3	50.3		60.4	60.6		11.0	11.0		11.0	11.0	
Actuated g/C Ratio	0.61	0.61		0.73	0.74		0.13	0.13		0.13	0.13	
v/c Ratio	0.05	0.59		0.26	0.44		0.40	0.61		0.52	0.22	
Control Delay	9.5	14.4		5.2	6.1		38.7	12.7		53.8	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	14.4		5.2	6.1		38.7	12.7		53.8	23.4	
LOS	A	B		A	A		D	B		D	C	
Approach Delay		14.2			5.9			18.4			37.3	
Approach LOS		B			A			B			D	
Stops (vph)	10	370		30	199		55	43		39	29	
Fuel Used(l)	1	47		5	26		4	7		3	2	
CO Emissions (g/hr)	27	882		93	487		79	133		54	36	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	5	170		18	94		15	26		10	7	
VOC Emissions (g/hr)	6	203		22	112		18	31		13	8	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	1.3	60.9		4.3	28.5		10.4	2.9		6.7	4.7	
Queue Length 95th (m)	5.3	117.3		11.8	62.8		21.8	21.5		16.9	14.0	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	476	1145		489	1381		315	559		155	424	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.59		0.25	0.44		0.23	0.46		0.30	0.13	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 82.4  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 12.9 Intersection LOS: B  
 Intersection Capacity Utilization 75.9% ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 10: Prospect Road/Driveway & Commercial Street



New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 11: Highbury Road & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	554	18	20	431	6	45	20	45	28	24	50
Future Volume (vph)	15	554	18	20	431	6	45	20	45	28	24	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99			1.00	
Frt		0.995			0.998			0.945			0.934	
Flt Protected	0.950			0.950				0.980			0.986	
Satd. Flow (prot)	1690	1873	0	1722	1879	0	0	1662	0	0	1662	0
Flt Permitted	0.460			0.340				0.842			0.881	
Satd. Flow (perm)	816	1873	0	616	1879	0	0	1428	0	0	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			37			51	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	4		2	2		4			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	2%	2%	6%	2%	2%	6%	2%	8%	5%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	589	19	21	459	6	48	21	48	30	26	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	608	0	21	465	0	0	117	0	0	109	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	14.0	47.6		13.6	47.2		28.8	28.8		28.8	28.8	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	47.2	45.5		48.7	48.3			9.8			9.8	
Actuated g/C Ratio	0.66	0.63		0.68	0.67			0.14			0.14	
v/c Ratio	0.03	0.51		0.04	0.37			0.52			0.44	
Control Delay	4.5	11.4		4.4	7.8			29.0			22.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	4.5	11.4		4.4	7.8			29.0			22.8	
LOS	A	B		A	A			C			C	
Approach Delay		11.2			7.7			29.0			22.8	
Approach LOS		B			A			C			C	
Stops (vph)	7	312		7	188			69			52	
Fuel Used(l)	1	43		1	30			6			4	
CO Emissions (g/hr)	19	806		24	567			104			75	



New Minas Transportation Study Scenario 2B Background Growth with Improvements AM  
 11: Highbury Road & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	156		5	109			20			14	
VOC Emissions (g/hr)	4	186		6	131			24			17	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (m)	0.5	27.1		0.7	18.3			8.5			6.0	
Queue Length 95th (m)	2.5	97.7		2.9	67.9			25.8			21.5	
Internal Link Dist (m)		552.1			544.7			128.7			84.5	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	625	1187		527	1261			491			519	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.03	0.51		0.04	0.37			0.24			0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	71.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization:	50.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: Highbury Road & Commercial Street

Ø1 13.6 s	Ø2 47.6 s	Ø4 28.8 s
Ø5 14 s	Ø6 47.2 s	

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	126	110	6	35	41
Future Vol, veh/h	6	126	110	6	35	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	25	5	3	2	11	2
Mvmt Flow	7	140	122	7	39	46

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	250	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	124	-	-	-	-	-
Critical Hdwy	6.65	6.25	-	-	4.21	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.345	-	-	2.299	-
Pot Cap-1 Maneuver	691	916	-	-	1403	-
Stage 1	846	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	672	916	-	-	1403	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1403
HCM Lane V/C Ratio	-	-	0.163	0.028
HCM Control Delay (s)	-	-	9.8	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:30	7:30	7:30	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	3741	3834	3728	3801	3717	3682	3774
Vehs Exited	3753	3824	3746	3815	3733	3708	3757
Starting Vehs	112	105	148	136	142	127	108
Ending Vehs	100	115	130	122	126	101	125
Travel Distance (km)	4908	5064	4804	4995	4893	4776	4842
Travel Time (hr)	125.3	129.1	121.9	127.8	124.9	122.1	122.7
Total Delay (hr)	24.0	24.9	22.9	24.6	24.3	23.8	22.7
Total Stops	2767	2846	2733	2856	2856	2782	2713
Fuel Used (l)	383.2	393.7	374.6	392.3	383.9	374.8	377.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	3704	3830	3862	3768
Vehs Exited	3699	3837	3860	3775
Starting Vehs	98	121	129	117
Ending Vehs	103	114	131	107
Travel Distance (km)	4834	4960	5028	4911
Travel Time (hr)	122.8	127.9	129.0	125.3
Total Delay (hr)	23.0	25.8	25.5	24.2
Total Stops	2702	2836	2876	2800
Fuel Used (l)	375.6	387.4	391.8	383.5

Interval #0 Information Seeding

Start Time	7:30
End Time	8:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	887	927	891	904	944	904	913
Vehs Exited	882	901	913	935	963	918	891
Starting Vehs	112	105	148	136	142	127	108
Ending Vehs	117	131	126	105	123	113	130
Travel Distance (km)	1154	1246	1179	1197	1279	1174	1157
Travel Time (hr)	29.1	31.5	29.9	30.9	32.9	30.1	29.5
Total Delay (hr)	5.2	5.9	5.7	6.2	6.6	5.9	5.5
Total Stops	639	673	658	667	783	694	651
Fuel Used (l)	89.8	96.1	91.4	94.9	99.5	91.6	89.9

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	962	944	935	918
Vehs Exited	925	922	926	915
Starting Vehs	98	121	129	117
Ending Vehs	135	143	138	120
Travel Distance (km)	1234	1231	1236	1209
Travel Time (hr)	31.4	31.1	30.8	30.7
Total Delay (hr)	5.8	5.7	5.5	5.8
Total Stops	670	636	632	673
Fuel Used (l)	94.7	94.5	94.1	93.7

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1043	1056	986	1038	1019	974	1051
Vehs Exited	1025	1036	980	998	1028	949	1033
Starting Vehs	117	131	126	105	123	113	130
Ending Vehs	135	151	132	145	114	138	148
Travel Distance (km)	1353	1371	1260	1351	1318	1251	1330
Travel Time (hr)	35.4	35.2	32.2	34.9	34.0	32.1	34.0
Total Delay (hr)	7.5	7.1	6.2	6.9	7.0	6.4	6.5
Total Stops	815	797	733	808	790	737	743
Fuel Used (l)	105.9	107.3	98.6	106.4	105.6	98.4	104.2

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1000	1086	1060	1028
Vehs Exited	998	1096	1040	1017
Starting Vehs	135	143	138	120
Ending Vehs	137	133	158	133
Travel Distance (km)	1322	1402	1337	1330
Travel Time (hr)	33.8	36.8	35.3	34.4
Total Delay (hr)	6.6	8.1	7.8	7.0
Total Stops	764	855	837	783
Fuel Used (l)	103.6	110.4	106.2	104.7

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	901	895	913	890	877	897	910
Vehs Exited	900	939	925	924	881	914	961
Starting Vehs	135	151	132	145	114	138	148
Ending Vehs	136	107	120	111	110	121	97
Travel Distance (km)	1182	1198	1183	1176	1177	1173	1195
Travel Time (hr)	30.0	30.2	29.5	29.7	29.5	29.6	30.2
Total Delay (hr)	5.7	5.7	5.2	5.5	5.4	5.5	5.6
Total Stops	635	639	646	676	623	629	676
Fuel Used (l)	91.7	92.9	92.9	92.1	90.7	91.8	93.5

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	857	874	955	899
Vehs Exited	893	891	990	923
Starting Vehs	137	133	158	133
Ending Vehs	101	116	123	106
Travel Distance (km)	1116	1128	1281	1181
Travel Time (hr)	28.3	29.0	33.3	29.9
Total Delay (hr)	5.3	5.7	7.0	5.6
Total Stops	630	648	757	657
Fuel Used (l)	87.2	88.1	101.5	92.2

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	910	956	938	969	877	907	900
Vehs Exited	946	948	928	958	861	927	872
Starting Vehs	136	107	120	111	110	121	97
Ending Vehs	100	115	130	122	126	101	125
Travel Distance (km)	1219	1250	1182	1272	1119	1178	1161
Travel Time (hr)	30.8	32.3	30.3	32.2	28.5	30.3	29.1
Total Delay (hr)	5.7	6.3	5.8	6.0	5.3	6.0	5.1
Total Stops	678	737	696	705	660	722	643
Fuel Used (l)	95.8	97.4	91.7	98.9	88.2	93.0	90.1

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	885	926	912	917
Vehs Exited	883	928	904	917
Starting Vehs	101	116	123	106
Ending Vehs	103	114	131	107
Travel Distance (km)	1162	1199	1174	1192
Travel Time (hr)	29.2	31.0	29.5	30.3
Total Delay (hr)	5.3	6.4	5.3	5.7
Total Stops	638	697	650	682
Fuel Used (l)	90.1	94.4	90.0	92.9



**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.2	0.2	0.1	0.1
Total Delay (hr)	0.4	0.0	0.0	0.0	0.2	0.1	0.8
Total Del/Veh (s)	3.5	3.2	3.3	0.4	8.8	5.0	3.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Stop Del/Veh (s)	0.0	0.0	1.3	0.0	6.3	4.2	0.8

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	0.3	0.2	1.2	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.5	0.1	0.2	0.9	0.0	0.3	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	7.6	4.5	2.8	9.6	6.8	6.0	27.6	27.2	2.2	27.2	27.5	7.0
Stop Delay (hr)	0.0	0.3	0.0	0.1	0.2	0.0	0.3	0.0	0.0	0.0	0.1	0.0
Stop Del/Veh (s)	5.2	2.4	0.0	3.9	1.6	1.6	25.2	23.1	0.0	25.2	24.2	6.7

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	2.2
Total Del/Veh (s)	6.7
Stop Delay (hr)	1.0
Stop Del/Veh (s)	3.2

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.4	0.4	0.2	0.1	4.1	0.1	0.1	0.2
Total Delay (hr)	0.0	0.8	0.0	0.0	0.8	0.0	0.1	0.1	0.0	0.5	0.1	0.1
Total Del/Veh (s)	12.8	5.4	4.6	5.6	4.9	2.7	23.3	28.5	4.4	27.8	25.2	13.7
Stop Delay (hr)	0.0	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.4	0.1	0.0
Stop Del/Veh (s)	8.6	2.2	2.3	4.0	2.2	1.6	21.8	25.3	4.2	24.8	21.1	12.3

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	2.4
Total Del/Veh (s)	6.8
Stop Delay (hr)	1.4
Stop Del/Veh (s)	4.0

**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.2	0.1	0.0
Total Delay (hr)	0.7	0.0	0.0	0.8	0.8	0.0	2.4
Total Del/Veh (s)	3.9	2.5	6.9	5.0	31.6	5.3	6.0
Stop Delay (hr)	0.3	0.0	0.0	0.3	0.7	0.0	1.3
Stop Del/Veh (s)	1.5	0.8	3.2	1.8	29.3	5.3	3.3

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	3.9	0.3	0.2
Total Delay (hr)	0.3	0.7	0.6	0.1	0.7	0.2	2.5
Total Del/Veh (s)	10.0	3.4	3.2	2.1	37.7	8.2	5.3
Stop Delay (hr)	0.2	0.1	0.0	0.0	0.7	0.2	1.1
Stop Del/Veh (s)	5.6	0.3	0.1	0.1	35.4	7.2	2.3

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	3.7	0.4	0.4	0.1	0.1	0.1
Total Delay (hr)	0.1	2.4	0.1	0.5	1.3	0.0	0.6	0.2	0.8	0.5	0.3	0.1
Total Del/Veh (s)	18.7	14.4	10.5	14.4	8.0	6.1	33.6	32.3	14.6	41.7	31.3	11.5
Stop Delay (hr)	0.1	1.2	0.0	0.3	0.6	0.0	0.5	0.1	0.7	0.5	0.2	0.1
Stop Del/Veh (s)	11.5	6.9	5.2	9.4	3.6	3.2	30.1	27.4	12.6	39.3	27.8	10.9

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	6.8
Total Del/Veh (s)	14.0
Stop Delay (hr)	4.3
Stop Del/Veh (s)	8.9

**11: Highbury Road & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.8	0.4	0.4	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.1	0.2
Total Delay (hr)	0.0	1.3	0.0	0.1	1.2	0.0	0.3	0.1	0.2	0.2	0.1	0.2
Total Del/Veh (s)	10.2	8.4	6.6	13.0	7.0	5.7	25.2	23.5	12.4	23.1	23.1	10.0
Stop Delay (hr)	0.0	0.6	0.0	0.0	0.4	0.0	0.3	0.1	0.1	0.2	0.1	0.1
Stop Del/Veh (s)	5.4	3.7	3.1	7.3	2.6	2.2	22.1	19.2	11.0	20.5	19.3	9.1

**11: Highbury Road & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	3.7
Total Del/Veh (s)	9.3
Stop Delay (hr)	2.0
Stop Del/Veh (s)	5.1

**16: New Canaan Road & Highbury School Road Performance by movement**

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.1	0.2	0.1	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	5.2	3.2	0.7	0.1	0.8	0.1	1.7
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	2.7	2.3	0.0	0.0	0.3	0.0	1.0

**Total Network Performance**

Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.5
Total Delay (hr)	23.6
Total Del/Veh (s)	21.9
Stop Delay (hr)	11.7
Stop Del/Veh (s)	10.8

**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	1.6	173.4	13.7	27.4
Average Queue (m)	0.1	6.2	1.1	12.7
95th Queue (m)	1.2	126.6	6.9	22.4
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	L	TR	LT	R	LTR
Maximum Queue (m)	16.0	58.6	20.4	54.2	25.0	5.0	18.3
Average Queue (m)	1.5	18.9	7.3	18.1	9.6	0.2	6.6
95th Queue (m)	8.0	42.4	17.2	43.1	21.2	5.1	15.3
Link Distance (m)		157.3		873.9	82.0	82.0	86.5
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	25.0		100.0				
Storage Blk Time (%)	0	3					
Queuing Penalty (veh)	0	0					

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	14.6	39.9	38.2	9.3	56.7	13.6	6.4	36.3
Average Queue (m)	2.1	12.9	12.4	2.0	19.8	3.1	2.2	13.4
95th Queue (m)	9.0	29.5	28.7	7.0	43.7	9.3	6.4	27.6
Link Distance (m)		238.9		118.4	118.4	52.6		111.4
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	25.0		40.0				35.0	
Storage Blk Time (%)		1	0					
Queuing Penalty (veh)		3	0					

**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	50.8	25.3	9.1	58.4	38.4	8.9
Average Queue (m)	21.5	3.3	0.6	22.2	16.6	1.5
95th Queue (m)	43.4	14.3	4.5	48.6	32.2	6.6
Link Distance (m)	225.1			238.9	58.7	58.7
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	0	0		3		
Queuing Penalty (veh)	0	0		0		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (m)	21.4	12.6	10.3	26.7	42.5
Average Queue (m)	10.5	0.4	1.0	12.2	12.5
95th Queue (m)	19.4	5.3	5.7	23.6	27.6
Link Distance (m)		358.0	225.1		103.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	25.0			25.0	
Storage Blk Time (%)	0	0		3	1
Queuing Penalty (veh)	1	0		3	1

**Intersection: 10: Prospect Road/Driveway & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	24.6	107.2	27.3	82.4	35.1	52.8	26.8	25.9
Average Queue (m)	4.5	45.4	14.9	33.5	12.2	24.1	9.8	9.8
95th Queue (m)	17.8	85.9	28.2	67.1	26.2	41.4	23.0	20.9
Link Distance (m)		551.4		358.0		173.0	80.9	80.9
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	10	1	8	0	0		
Queuing Penalty (veh)	0	2	3	9	0	0		

**Intersection: 11: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	15.6	76.2	22.2	68.1	39.2	32.2
Average Queue (m)	2.1	32.8	3.2	25.4	15.0	12.9
95th Queue (m)	9.3	61.1	12.4	52.1	30.5	24.9
Link Distance (m)		568.7		551.4	143.8	98.9
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	8	0	5		
Queuing Penalty (veh)	0	1	0	1		

**Intersection: 16: New Canaan Road & Highbury School Road**

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (m)	24.9	12.6
Average Queue (m)	11.8	1.3
95th Queue (m)	19.7	6.9
Link Distance (m)	241.1	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		230.0
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 25
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Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	500	83	35	404	64	28
Future Vol, veh/h	500	83	35	404	64	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	7	3	2	5
Mvmt Flow	562	93	39	454	72	31

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	655	0	1141
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	532
Critical Hdwy	-	-	4.17	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.263	-	3.518
Pot Cap-1 Maneuver	-	-	909	-	222
Stage 1	-	-	-	-	543
Stage 2	-	-	-	-	589
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	909	-	209
Mov Cap-2 Maneuver	-	-	-	-	209
Stage 1	-	-	-	-	543
Stage 2	-	-	-	-	555

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	28.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	253	-	-	909	-
HCM Lane V/C Ratio	0.409	-	-	0.043	-
HCM Control Delay (s)	28.7	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-



New Minas Transportation Study Scenario 2B Background Growth with Improvements PM  
 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	519	163	98	500	9	211	8	151	8	6	8
Future Volume (vph)	15	519	163	98	500	9	211	8	151	8	6	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			0.99				0.99
Frt			0.850		0.997				0.850			0.951
Flt Protected	0.950			0.950				0.954				0.982
Satd. Flow (prot)	1789	1883	1601	1789	1876	0	0	1797	1601	0	1737	0
Flt Permitted	0.470			0.327				0.718				0.880
Satd. Flow (perm)	875	1883	1601	616	1876	0	0	1334	1601	0	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168		2				156			8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		163.1			885.4			89.5				94.5
Travel Time (s)		11.7			63.7			6.4				6.8
Confl. Peds. (#/hr)	12					12	7					7
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	15	535	168	101	515	9	218	8	156	8	6	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	535	168	101	524	0	0	226	156	0	22	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	48.0	48.0	48.0	9.0	57.0		33.0	33.0	33.0	33.0	33.0	
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7		5.7	
Act Effect Green (s)	45.2	45.2	45.2	53.5	52.3			18.6	18.6		18.6	
Actuated g/C Ratio	0.55	0.55	0.55	0.65	0.64			0.23	0.23		0.23	
v/c Ratio	0.03	0.51	0.18	0.21	0.44			0.75	0.32		0.06	
Control Delay	11.8	15.7	2.7	7.6	9.8			44.6	6.2		18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	11.8	15.7	2.7	7.6	9.8			44.6	6.2		18.1	
LOS	B	B	A	A	A			D	A		B	
Approach Delay		12.6			9.5			28.9			18.1	
Approach LOS		B			A			C			B	
Stops (vph)	9	325	16	36	244			194	20		12	
Fuel Used(l)	1	22	3	19	100			14	2		1	
CO Emissions (g/hr)	11	402	60	351	1857			255	46		14	

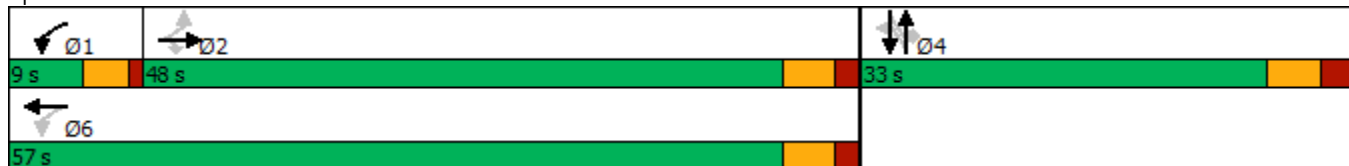


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	78	12	68	358			49	9		3	
VOC Emissions (g/hr)	2	93	14	81	428			59	11		3	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	1.0	51.2	0.0	5.0	35.9			32.6	0.0		1.7	
Queue Length 95th (m)	4.6	96.6	9.8	13.5	73.3			55.5	12.9		7.0	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	483	1040	959	474	1198			446	639		526	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.03	0.51	0.18	0.21	0.44			0.51	0.24		0.04	

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	81.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	15.1
Intersection LOS:	B
Intersection Capacity Utilization:	64.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study Scenario 2B Background Growth with Improvements PM  
 7: Commercial Street & Cornwallis Avenue 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	689	23	94	658	24	80	18	99	75	24	26
Future Volume (vph)	25	689	23	94	658	24	80	18	99	75	24	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			0.99			0.99	
Frt		0.995			0.995				0.850		0.972	
Flt Protected	0.950			0.950				0.961			0.971	
Satd. Flow (prot)	1789	3561	0	1789	1872	0	0	1810	1601	0	1756	0
Flt Permitted	0.378			0.278				0.696			0.755	
Satd. Flow (perm)	709	3561	0	524	1872	0	0	1302	1601	0	1365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			4				110			15
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		258.2			128.7			65.9			120.6	
Travel Time (s)		18.6			9.3			4.7			8.7	
Confl. Peds. (#/hr)	7					7	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	766	26	104	731	27	89	20	110	83	27	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	792	0	104	758	0	0	109	110	0	139	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4		4	4		
Total Split (s)	47.0	47.0		13.0	60.0		30.0	30.0	30.0	30.0	30.0	
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4		5.4	
Act Effect Green (s)	44.1	44.1		54.1	54.9			12.2	12.2		12.2	
Actuated g/C Ratio	0.57	0.57		0.70	0.71			0.16	0.16		0.16	
v/c Ratio	0.07	0.39		0.22	0.57			0.53	0.32		0.62	
Control Delay	11.0	11.5		5.7	8.5			39.7	8.7		38.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	11.0	11.5		5.7	8.5			39.7	8.7		38.9	
LOS	B	B		A	A			D	A		D	
Approach Delay		11.5			8.2			24.2			38.9	
Approach LOS		B			A			C			D	
Stops (vph)	15	383		30	322			86	18		99	
Fuel Used(l)	1	32		2	20			6	2		7	
CO Emissions (g/hr)	22	603		42	373			103	31		138	

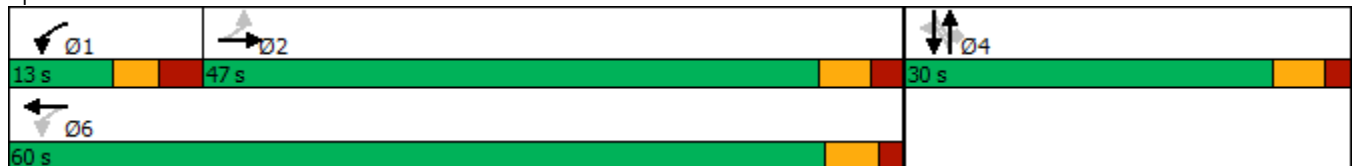


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	116		8	72			20	6		27	
VOC Emissions (g/hr)	5	139		10	86			24	7		32	
Dilemma Vehicles (#)	0	0		0	0			0	0		0	
Queue Length 50th (m)	1.9	34.1		4.1	44.9			14.9	0.0		17.1	
Queue Length 95th (m)	6.7	55.1		10.9	93.7			29.6	12.1		33.8	
Internal Link Dist (m)		234.2			104.7			41.9			96.6	
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	401	2021		478	1320			412	582		443	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.07	0.39		0.22	0.57			0.26	0.19		0.31	

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	77.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	13.3
Intersection LOS:	B
Intersection Capacity Utilization:	70.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 7: Commercial Street & Cornwallis Avenue

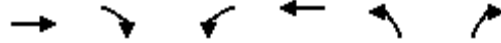


New Minas Transportation Study Scenario 2B Background Growth with Improvements PM  
 8: Valley View Drive & Commercial Street

12-19-2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	704	206	13	806	251	11
Future Volume (vph)	704	206	13	806	251	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		50.0	30.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.97	
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1883	1601	1789	1883	1789	1601
Flt Permitted			0.234		0.950	
Satd. Flow (perm)	1883	1601	441	1883	1741	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		179				11
Link Speed (k/h)	50			50	50	
Link Distance (m)	240.4			258.2	70.8	
Travel Time (s)	17.3			18.6	5.1	
Confl. Peds. (#/hr)					9	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	733	215	14	840	261	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	733	215	14	840	261	11
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Total Split (s)	51.3	51.3	12.7	64.0	26.0	26.0
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	55.8	55.8	58.4	58.2	16.6	16.6
Actuated g/C Ratio	0.64	0.64	0.67	0.67	0.19	0.19
v/c Ratio	0.61	0.20	0.03	0.67	0.77	0.04
Control Delay	13.8	2.9	5.7	12.4	48.5	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	2.9	5.7	12.4	48.5	15.0
LOS	B	A	A	B	D	B
Approach Delay	11.3			12.3	47.2	
Approach LOS	B			B	D	
Stops (vph)	416	24	6	467	231	6
Fuel Used(l)	33	6	1	38	16	0
CO Emissions (g/hr)	611	106	9	706	302	6

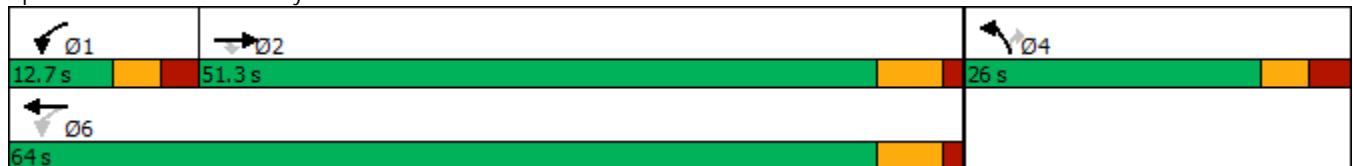


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	118	20	2	136	58	1
VOC Emissions (g/hr)	141	24	2	163	70	1
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	60.3	1.9	0.7	76.3	41.4	0.0
Queue Length 95th (m)	144.8	13.7	2.7	124.0	66.6	4.2
Internal Link Dist (m)	216.4		234.2		46.8	
Turn Bay Length (m)	50.0		30.0			
Base Capacity (vph)	1209	1092	405	1262	410	376
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.20	0.03	0.67	0.64	0.03

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	86.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	16.4
Intersection LOS:	B
Intersection Capacity Utilization:	66.3%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: Valley View Drive & Commercial Street



Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	941	943	80	44	45
Future Vol, veh/h	29	941	943	80	44	45
Conflicting Peds, #/hr	2	0	0	2	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	25	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	34	1094	1097	93	51	52

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1192	0	0 2308 1152
Stage 1	-	-	- 1146 -
Stage 2	-	-	- 1162 -
Critical Hdwy	4.12	-	- 6.43 6.22
Critical Hdwy Stg 1	-	-	- 5.43 -
Critical Hdwy Stg 2	-	-	- 5.43 -
Follow-up Hdwy	2.218	-	- 3.527 3.318
Pot Cap-1 Maneuver	586	-	- ~ 42 241
Stage 1	-	-	- 302 -
Stage 2	-	-	- 296 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	585	-	- ~ 39 239
Mov Cap-2 Maneuver	-	-	- 150 -
Stage 1	-	-	- 284 -
Stage 2	-	-	- 295 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	32.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	585	-	-	-	150	239
HCM Lane V/C Ratio	0.058	-	-	-	0.341	0.219
HCM Control Delay (s)	11.5	-	-	-	40.9	24.2
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.4	0.8

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



New Minas Transportation Study Scenario 2B Background Growth with Improvements PM  
 10: Prospect Road/Driveway & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	620	25	214	769	8	60	24	234	56	33	21
Future Volume (vph)	9	620	25	214	769	8	60	24	234	56	33	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%				0%
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.99					0.99
Frt		0.994			0.999			0.864				0.941
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1870	0	1789	1881	0	1789	1627	0	1789	1728	0
Flt Permitted	0.294			0.150			0.715			0.286		
Satd. Flow (perm)	553	1870	0	283	1881	0	1329	1627	0	539	1728	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			275				25
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	3		5	5		3	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	11	729	29	252	905	9	71	28	275	66	39	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	758	0	252	914	0	71	303	0	66	64	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	47.2	47.2		18.0	65.2		24.8	24.8		24.8	24.8	
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6	5.6	
Act Effect Green (s)	44.2	44.2		60.0	60.2		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.52	0.52		0.71	0.71		0.16	0.16		0.16	0.16	
v/c Ratio	0.04	0.78		0.65	0.69		0.33	0.61		0.75	0.21	
Control Delay	13.4	25.6		16.5	11.5		34.8	11.3		79.6	21.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	25.6		16.5	11.5		34.8	11.3		79.6	21.9	
LOS	B	C		B	B		C	B		E	C	
Approach Delay		25.4			12.5			15.8				51.2
Approach LOS		C			B			B				D
Stops (vph)	6	487		84	435		49	46		51	30	
Fuel Used(l)	1	58		12	44		4	8		5	2	
CO Emissions (g/hr)	13	1086		227	822		69	143		94	38	

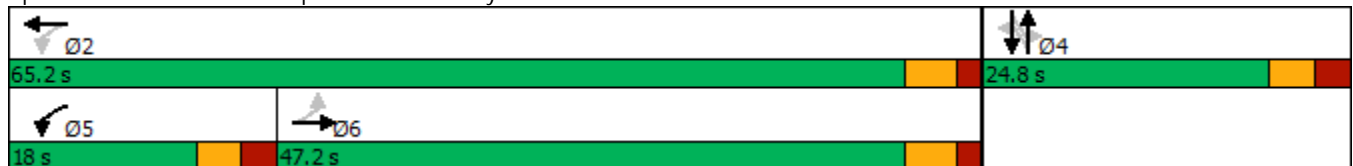


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	3	210		44	159		13	28		18	7	
VOC Emissions (g/hr)	3	250		52	189		16	33		22	9	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	0.9	99.7		12.3	73.6		10.3	3.9		10.3	5.5	
Queue Length 95th (m)	3.7	#153.7		31.4	119.2		20.6	20.3		#25.6	14.5	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	287	973		423	1332		301	581		121	410	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.78		0.60	0.69		0.24	0.52		0.55	0.16	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 85  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 19.2 Intersection LOS: B  
 Intersection Capacity Utilization 86.3% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 10: Prospect Road/Driveway & Commercial Street**



New Minas Transportation Study Scenario 2B Background Growth with Improvements PM  
 11: Highbury Road & Commercial Street 12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	763	48	45	838	6	46	31	34	59	29	60
Future Volume (vph)	19	763	48	45	838	6	46	31	34	59	29	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			1.00	
Frt		0.991			0.999			0.958			0.945	
Flt Protected	0.950			0.950				0.980			0.981	
Satd. Flow (prot)	1789	1861	0	1789	1881	0	0	1747	0	0	1739	0
Flt Permitted	0.158			0.162				0.772			0.833	
Satd. Flow (perm)	298	1861	0	305	1881	0	0	1376	0	0	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1			24			36	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	5%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	803	51	47	882	6	48	33	36	62	31	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	854	0	47	888	0	0	117	0	0	156	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	13.9	47.7		13.6	47.4		28.7	28.7		28.7	28.7	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	48.3	45.2		49.8	48.0			11.5			11.5	
Actuated g/C Ratio	0.63	0.59		0.65	0.63			0.15			0.15	
v/c Ratio	0.06	0.77		0.14	0.75			0.51			0.61	
Control Delay	5.5	21.3		5.8	18.9			31.7			33.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.5	21.3		5.8	18.9			31.7			33.8	
LOS	A	C		A	B			C			C	
Approach Delay		20.9			18.2			31.7			33.8	
Approach LOS		C			B			C			C	
Stops (vph)	7	557		16	522			76			102	
Fuel Used(l)	1	70		3	70			6			8	
CO Emissions (g/hr)	24	1305		56	1294			112			143	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	5	252		11	250			22			28	
VOC Emissions (g/hr)	5	301		13	298			26			33	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (m)	0.8	101.4		1.8	59.7			12.8			16.8	
Queue Length 95th (m)	3.2	#201.9		5.8	#213.0			27.8			34.6	
Internal Link Dist (m)		552.1			544.7			128.7			84.5	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	330	1107		339	1187			439			478	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.06	0.77		0.14	0.75			0.27			0.33	

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	76.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	21.3
Intersection LOS:	C
Intersection Capacity Utilization:	64.6%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

**Splits and Phases: 11: Highbury Road & Commercial Street**

Ø1 13.6 s	Ø2 47.7 s	Ø4 28.7 s
Ø5 13.9 s	Ø6 47.4 s	

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	71	81	6	134	116
Future Vol, veh/h	6	71	81	6	134	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	83	94	7	156	135

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	545	98	0	0	101	0
Stage 1	98	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	499	958	-	-	1491	-
Stage 1	926	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	447	958	-	-	1491	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	880	1491
HCM Lane V/C Ratio	-	-	0.102	0.105
HCM Control Delay (s)	-	-	9.6	7.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:30	3:30	3:30	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	5336	5409	5331	5379	5324	5515	5287
Vehs Exited	5347	5430	5285	5386	5299	5505	5309
Starting Vehs	203	213	190	211	180	183	195
Ending Vehs	192	192	236	204	205	193	173
Travel Distance (km)	6881	6969	6809	6883	6791	7040	6765
Travel Time (hr)	200.6	196.8	200.4	197.3	193.9	206.6	188.5
Total Delay (hr)	58.2	53.0	59.8	54.8	53.6	61.6	48.6
Total Stops	5293	4990	5393	5075	5052	5593	4750
Fuel Used (l)	564.5	565.0	558.9	561.8	554.6	583.7	547.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	5333	5483	5359	5374
Vehs Exited	5324	5493	5353	5371
Starting Vehs	174	174	179	181
Ending Vehs	183	164	185	184
Travel Distance (km)	6785	6969	6745	6864
Travel Time (hr)	190.8	212.9	191.6	197.9
Total Delay (hr)	51.1	68.7	52.6	56.2
Total Stops	4882	5840	4911	5176
Fuel Used (l)	551.0	581.7	549.4	561.8

Interval #0 Information Seeding

Start Time	3:30
End Time	4:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1254	1336	1334	1361	1243	1314	1289
Vehs Exited	1275	1371	1334	1374	1232	1301	1286
Starting Vehs	203	213	190	211	180	183	195
Ending Vehs	182	178	190	198	191	196	198
Travel Distance (km)	1618	1762	1663	1751	1559	1643	1674
Travel Time (hr)	46.0	48.1	46.5	51.7	42.8	45.6	45.7
Total Delay (hr)	12.5	11.7	12.2	15.3	10.4	11.8	11.3
Total Stops	1187	1138	1234	1326	1060	1158	1088
Fuel Used (l)	131.1	141.8	135.6	144.5	124.7	133.3	133.7

**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1342	1299	1261	1301
Vehs Exited	1328	1290	1262	1305
Starting Vehs	174	174	179	181
Ending Vehs	188	183	178	181
Travel Distance (km)	1687	1611	1625	1659
Travel Time (hr)	46.2	45.2	44.6	46.2
Total Delay (hr)	11.5	12.0	11.2	12.0
Total Stops	1113	1193	1091	1161
Fuel Used (l)	135.9	130.9	129.9	134.1



**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1457	1455	1448	1349	1529	1485	1418
Vehs Exited	1380	1410	1379	1340	1475	1425	1400
Starting Vehs	182	178	190	198	191	196	198
Ending Vehs	259	223	259	207	245	256	216
Travel Distance (km)	1848	1848	1825	1720	1903	1868	1765
Travel Time (hr)	55.5	55.8	58.6	49.3	58.6	57.9	50.3
Total Delay (hr)	17.2	17.7	20.9	13.7	19.4	19.5	13.9
Total Stops	1508	1521	1694	1222	1678	1652	1335
Fuel Used (l)	152.3	152.9	152.4	139.3	160.6	158.7	144.1

**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1444	1517	1443	1454
Vehs Exited	1400	1441	1400	1405
Starting Vehs	188	183	178	181
Ending Vehs	232	259	221	234
Travel Distance (km)	1878	1893	1803	1835
Travel Time (hr)	56.1	61.0	54.5	55.8
Total Delay (hr)	17.4	21.8	17.3	17.9
Total Stops	1559	1804	1484	1547
Fuel Used (l)	155.0	160.0	149.6	152.5

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1333	1261	1207	1315	1260	1357	1313
Vehs Exited	1393	1317	1262	1301	1343	1416	1335
Starting Vehs	259	223	259	207	245	256	216
Ending Vehs	199	167	204	221	162	197	194
Travel Distance (km)	1758	1645	1614	1657	1676	1777	1698
Travel Time (hr)	52.0	45.0	47.1	46.8	47.2	54.3	47.9
Total Delay (hr)	15.5	11.2	13.9	12.4	12.8	17.5	12.7
Total Stops	1329	1143	1261	1219	1183	1534	1237
Fuel Used (l)	145.8	132.0	132.6	134.4	136.4	149.4	138.4

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1266	1295	1287	1287
Vehs Exited	1310	1403	1311	1340
Starting Vehs	232	259	221	234
Ending Vehs	188	151	197	179
Travel Distance (km)	1589	1758	1651	1682
Travel Time (hr)	44.1	56.4	46.3	48.7
Total Delay (hr)	11.3	20.0	12.2	13.9
Total Stops	1105	1447	1180	1264
Fuel Used (l)	128.4	149.8	134.8	138.2

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1292	1357	1342	1354	1292	1359	1267
Vehs Exited	1299	1332	1310	1371	1249	1363	1288
Starting Vehs	199	167	204	221	162	197	194
Ending Vehs	192	192	236	204	205	193	173
Travel Distance (km)	1657	1713	1707	1755	1654	1751	1628
Travel Time (hr)	47.2	47.8	48.2	49.6	45.3	48.9	44.5
Total Delay (hr)	12.9	12.4	12.8	13.3	11.1	12.7	10.8
Total Stops	1269	1188	1204	1308	1131	1249	1090
Fuel Used (l)	135.3	138.3	138.3	143.7	133.0	142.3	131.1

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1281	1372	1368	1329
Vehs Exited	1286	1359	1380	1327
Starting Vehs	188	151	197	179
Ending Vehs	183	164	185	184
Travel Distance (km)	1631	1707	1666	1687
Travel Time (hr)	44.3	50.2	46.2	47.2
Total Delay (hr)	10.9	14.9	11.9	12.4
Total Stops	1105	1396	1156	1210
Fuel Used (l)	131.6	141.0	135.1	137.0

**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.4	0.1	0.1	0.1
Total Delay (hr)	0.9	0.1	0.0	0.1	0.2	0.1	1.5
Total Del/Veh (s)	5.1	4.7	5.4	1.2	14.5	7.4	4.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.1	0.3
Stop Del/Veh (s)	0.0	0.0	3.2	0.2	12.2	6.6	0.9

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.8	0.4	0.3	0.9	0.2	0.1	0.3	0.3	0.2	0.1	0.1	0.1
Total Delay (hr)	0.1	1.4	0.2	0.4	1.6	0.0	1.8	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	13.5	9.6	3.3	14.0	11.3	9.7	30.1	33.7	2.3	22.2	24.5	8.1
Stop Delay (hr)	0.0	0.8	0.0	0.2	0.6	0.0	1.6	0.1	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	9.7	5.7	0.0	7.1	4.2	4.3	26.2	28.1	0.0	20.3	21.5	7.9

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	5.7
Total Del/Veh (s)	11.9
Stop Delay (hr)	3.4
Stop Del/Veh (s)	7.1

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.5	0.6	0.5	0.5	3.9	0.2	0.2	0.2
Total Delay (hr)	0.2	2.1	0.1	0.3	1.4	0.0	0.6	0.1	0.2	0.6	0.2	0.1
Total Del/Veh (s)	20.6	11.0	8.2	10.4	7.9	5.6	27.5	27.2	5.9	27.8	29.1	17.0
Stop Delay (hr)	0.1	1.1	0.0	0.2	0.7	0.0	0.5	0.1	0.1	0.5	0.2	0.1
Stop Del/Veh (s)	15.0	5.6	4.3	8.1	4.0	3.3	25.3	23.5	5.3	24.7	24.7	15.6

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	5.8
Total Del/Veh (s)	11.5
Stop Delay (hr)	3.8
Stop Del/Veh (s)	7.4

**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.3	0.1	0.6	0.1	0.1
Total Delay (hr)	2.0	0.3	0.1	2.4	2.4	0.0	7.2
Total Del/Veh (s)	9.0	5.3	18.5	10.9	34.3	8.7	12.5
Stop Delay (hr)	1.0	0.1	0.0	1.1	2.2	0.0	4.4
Stop Del/Veh (s)	4.3	1.7	12.2	5.0	31.2	8.7	7.6

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.1	0.1	0.1	4.8	1.1	0.2
Total Delay (hr)	0.1	1.0	1.2	0.1	1.6	0.4	4.4
Total Del/Veh (s)	14.5	3.8	4.4	3.7	122.3	32.1	7.4
Stop Delay (hr)	0.1	0.1	0.1	0.0	1.6	0.4	2.2
Stop Del/Veh (s)	9.8	0.2	0.4	0.4	120.8	31.4	3.7

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.1	0.0	3.6	0.5	0.4	0.1	0.1	0.1
Total Delay (hr)	0.1	4.0	0.1	2.1	5.2	0.0	0.6	0.2	1.2	1.1	0.3	0.1
Total Del/Veh (s)	30.9	17.0	17.1	35.5	24.3	19.7	37.5	32.6	18.7	66.8	27.8	13.6
Stop Delay (hr)	0.0	2.0	0.1	1.4	2.6	0.0	0.5	0.2	1.1	1.1	0.2	0.1
Stop Del/Veh (s)	20.0	8.7	9.7	24.0	12.2	10.9	33.7	27.1	16.1	64.3	24.6	13.0

**10: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.0
Total Del/Veh (s)	23.5
Stop Delay (hr)	9.3
Stop Del/Veh (s)	14.6

**11: Highbury Road & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.9	0.8	0.8	0.4	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.1	3.7	0.2	0.3	3.7	0.0	0.4	0.2	0.2	0.4	0.2	0.3
Total Del/Veh (s)	23.2	16.8	14.1	23.8	15.8	15.1	28.2	27.2	16.7	26.1	26.0	17.4
Stop Delay (hr)	0.1	1.7	0.1	0.2	1.4	0.0	0.3	0.2	0.2	0.4	0.2	0.3
Stop Del/Veh (s)	15.5	7.7	7.2	14.7	6.1	6.8	25.2	22.8	15.3	23.1	21.4	16.1

**11: Highbury Road & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	9.7
Total Del/Veh (s)	17.3
Stop Delay (hr)	5.0
Stop Del/Veh (s)	8.9

**16: New Canaan Road & Highbury School Road Performance by movement**

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	5.5	2.7	0.5	0.1	1.7	0.2	1.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.2	2.2	0.0	0.0	0.2	0.0	0.5

**Total Network Performance**

Denied Delay (hr)	1.1
Denied Del/Veh (s)	0.7
Total Delay (hr)	55.1
Total Del/Veh (s)	35.7
Stop Delay (hr)	29.0
Stop Del/Veh (s)	18.8

**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	3.4	439.9	35.0	25.3
Average Queue (m)	0.1	18.9	6.6	11.9
95th Queue (m)	1.6	229.1	22.8	21.3
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	1			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	L	TR	LT	LTR
Maximum Queue (m)	22.2	75.0	25.6	73.2	63.7	15.9
Average Queue (m)	3.2	34.8	11.2	32.7	35.1	4.2
95th Queue (m)	12.9	63.0	21.3	60.4	56.6	12.3
Link Distance (m)	157.3		873.9		82.0	86.5
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)	25.0	100.0				
Storage Blk Time (%)	0	11				
Queuing Penalty (veh)	0	2				

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	26.0	80.6	42.5	20.8	86.6	39.1	28.7	39.0
Average Queue (m)	5.8	27.9	24.2	7.4	33.7	14.2	8.1	17.1
95th Queue (m)	17.7	59.7	47.0	16.5	68.4	29.6	18.6	32.0
Link Distance (m)	238.9		118.4		118.4	52.6	111.4	
Upstream Blk Time (%)	0					0		
Queuing Penalty (veh)	0					0		
Storage Bay Dist (m)	25.0	40.0		35.0				
Storage Blk Time (%)	0	7	1	0				
Queuing Penalty (veh)	0	27	3	0				



**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	103.2	52.5	24.7	107.1	65.0	10.8
Average Queue (m)	45.7	18.5	4.0	52.0	40.5	2.3
95th Queue (m)	87.1	48.3	14.8	96.2	62.5	8.4
Link Distance (m)	225.1			238.9	58.7	58.7
Upstream Blk Time (%)					2	
Queuing Penalty (veh)					0	
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	4	0	0	12		
Queuing Penalty (veh)	8	1	0	2		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (m)	15.3	20.3	55.7	26.8	65.0
Average Queue (m)	5.6	1.5	5.0	13.1	17.0
95th Queue (m)	14.1	10.6	31.6	27.4	54.6
Link Distance (m)		358.0	225.1		103.5
Upstream Blk Time (%)					2
Queuing Penalty (veh)					0
Storage Bay Dist (m)	25.0			25.0	
Storage Blk Time (%)	0	0		16	7
Queuing Penalty (veh)	0	0		7	3

**Intersection: 10: Prospect Road/Driveway & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	17.3	132.3	27.3	278.1	46.8	67.3	48.5	27.5
Average Queue (m)	1.9	61.3	22.5	96.5	14.1	29.6	15.7	10.2
95th Queue (m)	10.6	118.1	32.9	237.2	32.0	54.7	37.6	22.0
Link Distance (m)		551.4		358.0		173.0	80.9	80.9
Upstream Blk Time (%)				0			0	
Queuing Penalty (veh)				1			0	
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	18	8	16	0	2		
Queuing Penalty (veh)	0	2	62	35	0	1		

**Intersection: 11: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	21.5	147.0	25.9	129.9	35.9	39.8
Average Queue (m)	4.6	64.5	8.3	62.2	15.7	18.7
95th Queue (m)	14.6	118.3	21.8	113.8	29.4	32.9
Link Distance (m)		568.7		551.4	143.8	98.9
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	21	0	17		
Queuing Penalty (veh)	0	4	2	8		

**Intersection: 16: New Canaan Road & Highbury School Road**

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (m)	16.3	11.4
Average Queue (m)	8.8	2.4
95th Queue (m)	14.1	9.0
Link Distance (m)	241.1	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		230.0
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Network Summary**

Network wide Queuing Penalty: 170

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	581	46	15	407	80	33
Future Vol, veh/h	581	46	15	407	80	33
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	6	3	8	4	7	8
Mvmt Flow	653	52	17	457	90	37

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	706	0	1171
Stage 1	-	-	-	-	680
Stage 2	-	-	-	-	491
Critical Hdwy	-	-	4.18	-	6.47
Critical Hdwy Stg 1	-	-	-	-	5.47
Critical Hdwy Stg 2	-	-	-	-	5.47
Follow-up Hdwy	-	-	2.272	-	3.563
Pot Cap-1 Maneuver	-	-	865	-	208
Stage 1	-	-	-	-	494
Stage 2	-	-	-	-	605
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	864	-	202
Mov Cap-2 Maneuver	-	-	-	-	202
Stage 1	-	-	-	-	494
Stage 2	-	-	-	-	589

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	35.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	240	-	-	864	-
HCM Lane V/C Ratio	0.529	-	-	0.02	-
HCM Control Delay (s)	35.7	-	-	9.2	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	2.8	-	-	0.1	-

New Minas Transportation Study  
2: Silver Fox Avenue/Bonavista Avenue & Commercial Street

Scenario 3 Development AM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	704	66	69	622	6	38	6	66	6	10	30
Future Volume (vph)	11	704	66	69	622	6	38	6	66	6	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00			1.00	0.98		0.99	
Frt			0.850		0.998				0.850		0.913	
Flt Protected	0.950			0.950				0.959			0.993	
Satd. Flow (prot)	1789	1865	1601	1706	1874	0	0	1747	1512	0	1613	0
Flt Permitted	0.405			0.257				0.721			0.942	
Satd. Flow (perm)	756	1865	1601	461	1874	0	0	1311	1476	0	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		1				75			33
Link Speed (k/h)		50			50			50				50
Link Distance (m)		163.1			885.4			89.5				94.5
Travel Time (s)		11.7			63.7			6.4				6.8
Confl. Peds. (#/hr)	13					13	1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	7%	2%	25%	3%	20%	8%	20%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	12	765	72	75	676	7	41	7	72	7	11	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	765	72	75	683	0	0	48	72	0	51	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	53.3	53.3	53.3	9.0	62.3		27.7	27.7	27.7	27.7		27.7
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7			5.7
Act Effect Green (s)	53.9	53.9	53.9	61.3	61.2			8.4	8.4			8.4
Actuated g/C Ratio	0.70	0.70	0.70	0.80	0.80			0.11	0.11			0.11
v/c Ratio	0.02	0.58	0.06	0.17	0.46			0.34	0.32			0.26
Control Delay	6.1	10.7	1.5	3.3	4.9			38.0	11.9			19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0
Total Delay	6.1	10.7	1.5	3.3	4.9			38.0	11.9			19.7
LOS	A	B	A	A	A			D	B			B
Approach Delay		9.8			4.7			22.4				19.7
Approach LOS		A			A			C				B
Stops (vph)	6	382	6	16	205			41	16			23
Fuel Used(l)	0	25	1	13	119			3	2			2
CO Emissions (g/hr)	7	470	23	239	2211			48	28			31

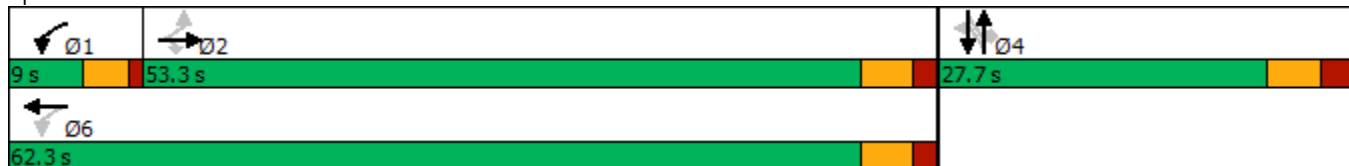


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	1	91	4	46	427			9	5		6	
VOC Emissions (g/hr)	2	108	5	55	510			11	7		7	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	0.6	59.9	0.0	1.9	29.0			6.5	0.0		2.4	
Queue Length 95th (m)	2.5	105.2	3.8	5.3	55.4			16.2	10.2		11.7	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	530	1308	1147	448	1490			375	476		461	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.02	0.58	0.06	0.17	0.46			0.13	0.15		0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	76.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	8.8
Intersection LOS:	A
Intersection Capacity Utilization:	63.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study  
7: Commercial Street & Cornwallis Avenue

Scenario 3 Development AM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	641	18	23	898	28	16	6	18	73	8	13
Future Volume (vph)	11	641	18	23	898	28	16	6	18	73	8	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00			1.00			1.00	
Frt		0.996			0.995				0.850		0.981	
Flt Protected	0.950			0.950				0.964			0.963	
Satd. Flow (prot)	1644	3531	0	1722	1871	0	0	1816	1601	0	1675	0
Flt Permitted	0.247			0.335				0.789			0.760	
Satd. Flow (perm)	427	3531	0	607	1871	0	0	1483	1601	0	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				107			9
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		258.9			128.7			65.9			120.6	
Travel Time (s)		18.6			9.3			4.7			8.7	
Confl. Peds. (#/hr)	12					12	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	3%	2%	6%	2%	2%	2%	2%	2%	8%	17%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	682	19	24	955	30	17	6	19	78	9	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	701	0	24	985	0	0	23	19	0	101	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4		4	4		
Total Split (s)	47.4	47.4		13.0	60.4		29.6	29.6	29.6	29.6	29.6	
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4		5.4	
Act Effect Green (s)	53.9	53.9		57.5	59.3			10.7	10.7		10.7	
Actuated g/C Ratio	0.70	0.70		0.75	0.77			0.14	0.14		0.14	
v/c Ratio	0.04	0.28		0.04	0.68			0.11	0.06		0.53	
Control Delay	9.3	7.5		4.2	9.8			29.3	0.4		38.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	9.3	7.5		4.2	9.8			29.3	0.4		38.1	
LOS	A	A		A	A			C	A		D	
Approach Delay		7.6			9.6			16.2			38.1	
Approach LOS		A			A			B			D	
Stops (vph)	6	260		7	494			21	0		78	
Fuel Used(l)	0	26		1	29			1	0		6	
CO Emissions (g/hr)	9	481		10	546			21	2		105	

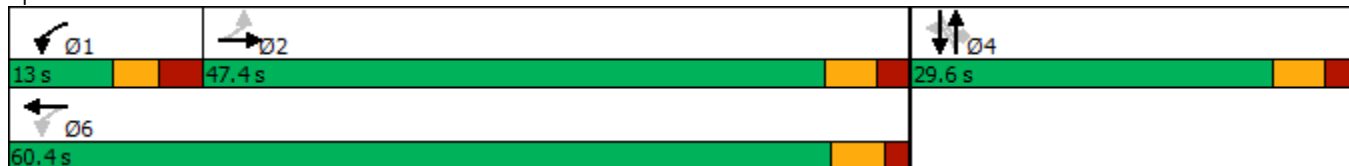


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	93		2	105			4	0		20	
VOC Emissions (g/hr)	2	111		2	126			5	1		24	
Dilemma Vehicles (#)	0	0		0	0			0	0		0	
Queue Length 50th (m)	0.4	15.0		0.8	66.1			3.0	0.0		12.5	
Queue Length 95th (m)	3.6	44.4		3.2	141.4			9.0	0.0		26.6	
Internal Link Dist (m)		234.9			104.7			41.9			96.6	
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	298	2469		554	1440			465	576		421	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.04	0.28		0.04	0.68			0.05	0.03		0.24	

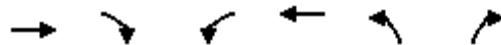
Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	77.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	10.5
Intersection LOS:	B
Intersection Capacity Utilization:	70.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 7: Commercial Street & Cornwallis Avenue







Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	682	64	11	911	83	11
Future Volume (vph)	682	64	11	911	83	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		50.0	30.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1865	1601	1789	1883	1789	1601
Flt Permitted			0.275		0.950	
Satd. Flow (perm)	1865	1601	518	1883	1768	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		64				12
Link Speed (k/h)	50			50	50	
Link Distance (m)	239.7			258.9	70.8	
Travel Time (s)	17.3			18.6	5.1	
Confl. Peds. (#/hr)					4	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	749	70	12	1001	91	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	749	70	12	1001	91	12
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Total Split (s)	56.2	56.2	12.7	68.9	21.1	21.1
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	64.8	64.8	66.3	67.3	9.8	9.8
Actuated g/C Ratio	0.76	0.76	0.78	0.79	0.12	0.12
v/c Ratio	0.53	0.06	0.02	0.67	0.44	0.06
Control Delay	8.7	2.3	3.5	8.9	41.9	17.7
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	8.7	2.3	3.5	9.0	41.9	17.7
LOS	A	A	A	A	D	B
Approach Delay	8.2			8.9	39.1	
Approach LOS	A			A	D	
Stops (vph)	302	7	4	441	73	6
Fuel Used(l)	27	2	0	39	5	0
CO Emissions (g/hr)	500	32	7	717	91	7



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	96	6	1	138	17	1
VOC Emissions (g/hr)	115	7	2	165	21	2
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	41.0	0.3	0.4	70.3	14.0	0.0
Queue Length 95th (m)	126.4	5.6	1.8	135.9	27.7	4.6
Internal Link Dist (m)	215.7			234.9	46.8	
Turn Bay Length (m)		50.0	30.0			
Base Capacity (vph)	1419	1233	507	1487	315	292
Starvation Cap Reductn	0	0	0	52	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.06	0.02	0.70	0.29	0.04

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	85.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	10.2
Intersection LOS:	B
Intersection Capacity Utilization:	63.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 8: Valley View Drive & Commercial Street



Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	762	849	99	76	86
Future Vol, veh/h	103	762	849	99	76	86
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	25	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	6
Mvmt Flow	116	856	954	111	85	97

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1066	0	0 2099 1012
Stage 1	-	-	- 1011 -
Stage 2	-	-	- 1088 -
Critical Hdwy	4.12	-	- 6.42 6.26
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.354
Pot Cap-1 Maneuver	654	-	- 57 285
Stage 1	-	-	- 352 -
Stage 2	-	-	- 323 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	653	-	- 47 284
Mov Cap-2 Maneuver	-	-	- 161 -
Stage 1	-	-	- 289 -
Stage 2	-	-	- 323 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	653	-	-	-	161	284
HCM Lane V/C Ratio	0.177	-	-	-	0.53	0.34
HCM Control Delay (s)	11.7	-	-	-	50.2	24.1
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	2.6	1.5

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

New Minas Transportation Study  
26: Prospect Road/Driveway & Commercial Street

Scenario 3 Development AM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	725	20	120	686	6	64	19	220	41	30	19
Future Volume (vph)	25	725	20	120	686	6	64	19	220	41	30	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.99					0.99
Frt		0.996			0.999			0.862				0.943
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1876	0	1789	1881	0	1789	1610	0	1722	1732	0
Flt Permitted	0.371			0.150			0.721			0.354		
Satd. Flow (perm)	668	1876	0	283	1881	0	1340	1610	0	642	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			247				21
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	9					9	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	2%	13%	2%	6%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	28	815	22	135	771	7	72	21	247	46	34	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	837	0	135	778	0	72	268	0	46	55	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	52.4	52.4		12.8	65.2		24.8	24.8		24.8	24.8	
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6	5.6	
Act Effect Green (s)	47.5	47.5		59.9	60.1		11.3	11.3		11.3	11.3	
Actuated g/C Ratio	0.58	0.58		0.73	0.73		0.14	0.14		0.14	0.14	
v/c Ratio	0.07	0.77		0.40	0.57		0.39	0.62		0.52	0.21	
Control Delay	9.8	20.7		7.6	7.8		38.1	12.4		53.8	23.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	20.7		7.6	7.8		38.1	12.4		53.8	23.1	
LOS	A	C		A	A		D	B		D	C	
Approach Delay		20.3			7.8			17.9				37.1
Approach LOS		C			A			B				D
Stops (vph)	13	530		34	305		55	43		38	29	
Fuel Used(l)	2	64		6	36		4	7		3	2	
CO Emissions (g/hr)	34	1190		106	661		78	137		54	36	

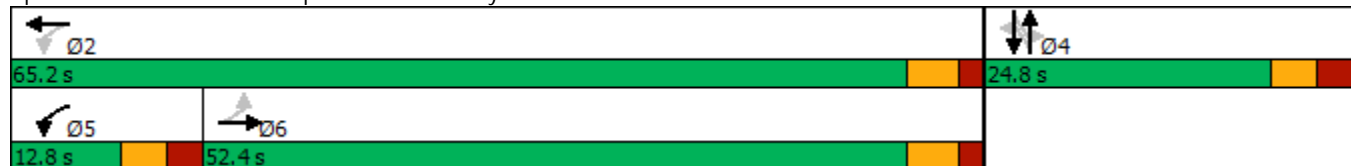


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	7	230		21	128		15	26		10	7	
VOC Emissions (g/hr)	8	275		25	153		18	31		12	8	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	1.7	88.5		4.8	42.9		10.4	2.9		6.8	4.8	
Queue Length 95th (m)	6.4	#187.9		13.1	95.8		21.7	21.9		17.0	13.9	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	385	1084		341	1374		313	565		150	421	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.77		0.40	0.57		0.23	0.47		0.31	0.13	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 82.3  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 15.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 84.6%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 26: Prospect Road/Driveway & Commercial Street**



New Minas Transportation Study  
21: Highbury Road & Commercial Street

Scenario 3 Development AM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	739	18	20	520	6	45	20	55	33	24	50
Future Volume (vph)	15	739	18	20	520	6	45	20	55	33	24	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00			0.99			1.00	
Frt		0.996			0.998			0.938			0.937	
Flt Protected	0.950			0.950				0.982			0.985	
Satd. Flow (prot)	1690	1875	0	1722	1879	0	0	1648	0	0	1667	0
Flt Permitted	0.392			0.214				0.846			0.853	
Satd. Flow (perm)	696	1875	0	388	1879	0	0	1420	0	0	1443	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			46			47	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	4		2	2		4			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	2%	2%	6%	2%	2%	6%	2%	8%	5%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	786	19	21	553	6	48	21	59	35	26	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	805	0	21	559	0	0	128	0	0	114	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	13.9	47.7		13.6	47.4		28.7	28.7		28.7	28.7	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	47.1	45.4		48.6	48.2			9.9			9.9	
Actuated g/C Ratio	0.65	0.63		0.68	0.67			0.14			0.14	
v/c Ratio	0.03	0.68		0.05	0.44			0.54			0.48	
Control Delay	4.7	15.6		4.6	8.8			28.2			24.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	4.7	15.6		4.6	8.8			28.2			24.9	
LOS	A	B		A	A			C			C	
Approach Delay		15.3			8.6			28.2			24.9	
Approach LOS		B			A			C			C	
Stops (vph)	7	469		7	242			70			58	
Fuel Used(l)	1	61		1	37			6			4	
CO Emissions (g/hr)	19	1135		24	695			110			83	

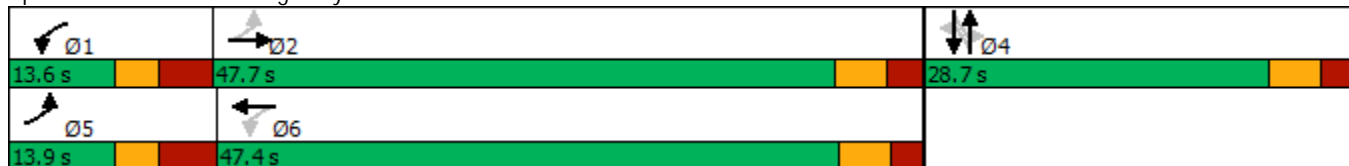


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	219		5	134			21			16	
VOC Emissions (g/hr)	4	262		6	160			25			19	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (m)	0.5	43.0		0.7	23.9			8.7			7.0	
Queue Length 95th (m)	2.6	#173.9		3.0	87.7			26.8			23.3	
Internal Link Dist (m)		552.1			544.7			128.7			84.5	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	555	1184		395	1257			493			501	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.03	0.68		0.05	0.44			0.26			0.23	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	72
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	14.6
Intersection LOS:	B
Intersection Capacity Utilization:	59.9%
ICU Level of Service:	B
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 21: Highbury Road & Commercial Street





Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:30	7:30	7:30	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	4473	4372	4373	4366	4344	4378	4403
Vehs Exited	4482	4415	4380	4418	4356	4359	4429
Starting Vehs	182	197	167	203	183	153	189
Ending Vehs	173	154	160	151	171	172	163
Travel Distance (km)	6456	6332	6375	6455	6517	6321	6368
Travel Time (hr)	172.6	169.2	172.0	171.6	173.3	168.1	171.0
Total Delay (hr)	39.4	38.8	40.9	38.6	39.2	38.2	40.0
Total Stops	3590	3464	3509	3513	3418	3524	3658
Fuel Used (l)	503.6	495.0	497.5	504.7	505.9	491.9	498.5

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:30	7:30	7:30	7:30
End Time	9:00	9:00	9:00	9:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	4479	4453	4461	4409
Vehs Exited	4497	4449	4451	4423
Starting Vehs	180	158	178	172
Ending Vehs	162	162	188	159
Travel Distance (km)	6577	6516	6417	6433
Travel Time (hr)	182.0	176.2	171.9	172.8
Total Delay (hr)	46.6	41.7	39.1	40.2
Total Stops	3834	3759	3506	3577
Fuel Used (l)	523.1	509.7	499.6	503.0

Interval #0 Information Seeding

Start Time	7:30
End Time	8:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1026	1094	1082	1033	1008	1045	1018
Vehs Exited	1066	1134	1083	1074	1005	1051	1049
Starting Vehs	182	197	167	203	183	153	189
Ending Vehs	142	157	166	162	186	147	158
Travel Distance (km)	1537	1630	1578	1582	1506	1524	1501
Travel Time (hr)	39.2	44.5	41.2	42.4	39.4	39.9	39.3
Total Delay (hr)	7.6	11.0	8.8	9.8	8.3	8.4	8.4
Total Stops	719	853	794	907	812	869	785
Fuel Used (l)	117.9	128.3	121.3	124.6	116.3	116.7	117.2

**Interval #1 Information Recording**

Start Time	8:00
End Time	8:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1078	1075	1071	1051
Vehs Exited	1097	1080	1082	1072
Starting Vehs	180	158	178	172
Ending Vehs	161	153	167	154
Travel Distance (km)	1557	1572	1572	1556
Travel Time (hr)	42.1	41.3	41.2	41.0
Total Delay (hr)	10.0	8.9	8.6	9.0
Total Stops	903	839	779	826
Fuel Used (l)	123.1	122.2	120.7	120.8

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1276	1166	1145	1201	1216	1208	1196
Vehs Exited	1198	1134	1112	1162	1211	1172	1152
Starting Vehs	142	157	166	162	186	147	158
Ending Vehs	220	189	199	201	191	183	202
Travel Distance (km)	1786	1641	1637	1712	1844	1734	1692
Travel Time (hr)	48.8	43.9	46.8	46.5	52.5	48.6	46.3
Total Delay (hr)	11.9	10.1	13.1	11.2	14.3	13.0	11.5
Total Stops	1081	951	961	1002	1068	1113	1039
Fuel Used (l)	139.8	127.1	130.1	134.1	145.7	138.1	133.1

**Interval #2 Information Recording**

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1266	1227	1197	1210
Vehs Exited	1213	1173	1143	1168
Starting Vehs	161	153	167	154
Ending Vehs	214	207	221	195
Travel Distance (km)	1873	1795	1690	1740
Travel Time (hr)	55.4	51.2	45.7	48.6
Total Delay (hr)	16.8	14.1	10.8	12.7
Total Stops	1207	1218	931	1060
Fuel Used (l)	152.7	143.7	131.6	137.6

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1068	1054	1069	1062	1039	997	1077
Vehs Exited	1114	1090	1133	1119	1059	1038	1095
Starting Vehs	220	189	199	201	191	183	202
Ending Vehs	174	153	135	144	171	142	184
Travel Distance (km)	1567	1553	1567	1621	1554	1440	1592
Travel Time (hr)	42.8	40.1	41.9	42.9	39.2	37.5	42.3
Total Delay (hr)	10.5	8.1	9.7	9.4	7.6	7.9	9.7
Total Stops	876	798	887	813	685	729	838
Fuel Used (l)	123.3	120.4	122.1	126.6	119.9	111.1	123.2

**Interval #3 Information Recording**

Start Time	8:30
End Time	8:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1044	1041	1085	1052
Vehs Exited	1089	1069	1120	1094
Starting Vehs	214	207	221	195
Ending Vehs	169	179	186	158
Travel Distance (km)	1552	1541	1579	1557
Travel Time (hr)	41.9	40.7	42.4	41.2
Total Delay (hr)	10.0	8.9	9.7	9.1
Total Stops	789	808	855	804
Fuel Used (l)	122.6	118.4	123.2	121.1

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1103	1058	1077	1070	1081	1128	1112
Vehs Exited	1104	1057	1052	1063	1081	1098	1133
Starting Vehs	174	153	135	144	171	142	184
Ending Vehs	173	154	160	151	171	172	163
Travel Distance (km)	1566	1508	1593	1540	1613	1622	1583
Travel Time (hr)	41.7	40.7	42.2	39.8	42.3	42.1	43.0
Total Delay (hr)	9.4	9.6	9.3	8.2	9.0	8.8	10.4
Total Stops	914	862	867	791	853	813	996
Fuel Used (l)	122.7	119.2	124.0	119.4	124.0	125.9	124.9

**Interval #4 Information Recording**

Start Time	8:45
End Time	9:00
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1091	1110	1108	1094
Vehs Exited	1098	1127	1106	1094
Starting Vehs	169	179	186	158
Ending Vehs	162	162	188	159
Travel Distance (km)	1596	1608	1576	1580
Travel Time (hr)	42.7	42.9	42.6	42.0
Total Delay (hr)	9.9	9.8	10.0	9.4
Total Stops	935	894	941	883
Fuel Used (l)	124.7	125.4	124.1	123.4

**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.3	0.4	0.2	0.2	0.1
Total Delay (hr)	1.0	0.1	0.0	0.1	0.3	0.1	1.6
Total Del/Veh (s)	4.8	4.4	5.3	0.7	15.7	9.0	4.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.3	0.1	0.4
Stop Del/Veh (s)	0.0	0.0	3.4	0.1	13.2	8.0	1.1

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.9	0.5	0.2	1.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	1.3	0.1	0.2	1.4	0.0	0.3	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	11.7	6.7	2.9	12.7	8.1	7.9	29.9	32.9	2.1	32.4	28.2	9.0
Stop Delay (hr)	0.0	0.6	0.0	0.1	0.3	0.0	0.3	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	7.8	3.0	0.0	6.0	1.6	0.8	27.6	29.2	0.0	30.3	24.7	8.7

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.6
Total Del/Veh (s)	8.0
Stop Delay (hr)	1.5
Stop Del/Veh (s)	3.3

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.4	0.9	0.7	0.2	0.1	4.0	0.1	0.1	0.2
Total Delay (hr)	0.1	1.1	0.0	0.0	2.1	0.0	0.1	0.0	0.0	0.6	0.1	0.1
Total Del/Veh (s)	23.0	6.0	4.9	6.8	8.4	5.9	26.9	24.7	4.5	29.1	37.0	21.5
Stop Delay (hr)	0.1	0.4	0.0	0.0	0.8	0.0	0.1	0.0	0.0	0.5	0.1	0.1
Stop Del/Veh (s)	19.0	2.4	2.6	5.0	3.3	2.8	25.5	21.5	4.5	26.1	32.2	20.5

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	4.3
Total Del/Veh (s)	8.7
Stop Delay (hr)	2.3
Stop Del/Veh (s)	4.5

**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	1.1	0.1	0.0	2.1	0.8	0.0	4.0
Total Del/Veh (s)	5.0	3.0	12.0	8.0	31.7	7.9	7.7
Stop Delay (hr)	0.4	0.0	0.0	0.6	0.7	0.0	1.8
Stop Del/Veh (s)	2.0	0.8	6.4	2.5	29.5	8.4	3.5

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	5.6	2.4	0.3
Total Delay (hr)	0.5	1.0	1.0	0.1	2.0	0.7	5.3
Total Del/Veh (s)	16.5	3.8	4.0	3.1	95.3	29.7	8.7
Stop Delay (hr)	0.3	0.1	0.0	0.0	2.0	0.7	3.1
Stop Del/Veh (s)	11.5	0.2	0.1	0.2	93.4	28.7	5.1

**21: Highbury Road & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.6	0.7	0.8	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.1	2.4	0.1	0.1	1.7	0.0	0.3	0.1	0.3	0.2	0.2	0.2
Total Del/Veh (s)	14.9	11.4	9.1	15.1	7.9	9.2	26.7	24.1	15.5	26.4	25.1	11.3
Stop Delay (hr)	0.0	1.0	0.0	0.0	0.6	0.0	0.3	0.1	0.2	0.2	0.1	0.1
Stop Del/Veh (s)	7.9	4.7	4.2	9.0	2.8	4.6	23.6	19.6	14.1	23.8	21.1	10.5

**21: Highbury Road & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	5.5
Total Del/Veh (s)	11.0
Stop Delay (hr)	2.8
Stop Del/Veh (s)	5.5

26: Prospect Road/Driveway & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.5	0.4	0.1	0.1	0.1
Total Delay (hr)	0.2	4.1	0.1	0.7	2.3	0.0	0.7	0.2	1.2	0.6	0.3	0.1
Total Del/Veh (s)	27.2	18.3	15.0	20.7	9.7	10.4	38.3	34.9	20.1	48.1	29.6	12.1
Stop Delay (hr)	0.1	1.9	0.0	0.5	0.9	0.0	0.6	0.2	1.1	0.5	0.2	0.1
Stop Del/Veh (s)	17.9	8.6	7.1	14.4	3.9	4.9	34.6	29.7	17.7	45.7	26.3	11.3

26: Prospect Road/Driveway & Commercial Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	10.2
Total Del/Veh (s)	16.8
Stop Delay (hr)	6.1
Stop Del/Veh (s)	10.0

Total Network Performance

Denied Delay (hr)	0.9
Denied Del/Veh (s)	0.8
Total Delay (hr)	39.3
Total Del/Veh (s)	30.9
Stop Delay (hr)	18.2
Stop Del/Veh (s)	14.3



**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	5.4	436.6	30.0	31.8
Average Queue (m)	0.2	15.6	3.4	14.8
95th Queue (m)	3.1	206.4	16.7	26.5
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	R	L	TR	LT	LTR
Maximum Queue (m)	15.1	92.8	16.0	25.2	62.6	24.8	24.2
Average Queue (m)	1.8	34.3	0.6	9.3	23.8	9.2	8.0
95th Queue (m)	8.7	75.7	16.4	19.9	51.5	19.9	18.3
Link Distance (m)		157.3	157.3		873.9	82.0	86.5
Upstream Blk Time (%)	0		0				
Queuing Penalty (veh)	0		0				
Storage Bay Dist (m)	25.0			100.0			
Storage Blk Time (%)	0	8					
Queuing Penalty (veh)	0	1					

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	13.4	45.0	38.8	63.7	115.9	12.4	7.8	37.3
Average Queue (m)	2.4	15.2	15.6	5.2	45.3	2.7	1.5	15.2
95th Queue (m)	9.0	32.9	32.5	35.6	92.2	8.3	5.1	30.6
Link Distance (m)		238.8		118.4	118.4	51.5		111.3
Upstream Blk Time (%)				0	1			
Queuing Penalty (veh)				0	0			
Storage Bay Dist (m)	25.0		40.0			35.0		
Storage Blk Time (%)	0	2	0					
Queuing Penalty (veh)	0	5	0					

**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	67.6	28.7	19.7	94.8	33.8	7.0
Average Queue (m)	29.3	4.3	2.0	40.4	14.5	1.5
95th Queue (m)	57.7	19.5	10.4	81.3	27.9	5.5
Link Distance (m)	224.6			238.8	58.7	58.7
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	1	0	0	8		
Queuing Penalty (veh)	1	0	0	1		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (m)	25.0	17.2	20.9	27.4	82.2
Average Queue (m)	12.1	1.1	2.6	17.4	24.2
95th Queue (m)	22.3	15.8	12.8	30.4	68.6
Link Distance (m)		358.0	224.6		103.5
Upstream Blk Time (%)					3
Queuing Penalty (veh)					0
Storage Bay Dist (m)	25.0			25.0	
Storage Blk Time (%)	1	0		19	8
Queuing Penalty (veh)	8	0		17	7

**Intersection: 21: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	27.1	103.1	18.4	68.8	40.7	34.0
Average Queue (m)	3.3	46.5	3.4	31.4	16.8	13.1
95th Queue (m)	14.1	83.6	11.8	60.3	31.7	26.3
Link Distance (m)		568.7		551.4	143.8	98.9
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	14	0	8		
Queuing Penalty (veh)	0	2	0	2		

Intersection: 26: Prospect Road/Driveway & Commercial Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	32.6	145.1	27.3	104.3	43.0	60.4	33.0	26.4
Average Queue (m)	5.2	63.7	16.5	47.8	14.4	29.2	10.3	9.2
95th Queue (m)	19.0	123.4	29.8	88.1	30.5	50.6	24.5	21.3
Link Distance (m)		551.4		358.0		173.0	80.9	80.9
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	17	1	12	0	1		
Queuing Penalty (veh)	0	4	10	14	0	1		

Network Summary

Network wide Queuing Penalty: 73

Intersection						
Int Delay, s/veh	8.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	700	88	35	717	69	28
Future Vol, veh/h	700	88	35	717	69	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	7	3	2	5
Mvmt Flow	787	99	39	806	78	31

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	886	0	1721
Stage 1	-	-	-	-	837
Stage 2	-	-	-	-	884
Critical Hdwy	-	-	4.17	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.263	-	3.518
Pot Cap-1 Maneuver	-	-	743	-	98
Stage 1	-	-	-	-	425
Stage 2	-	-	-	-	404
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	743	-	89
Mov Cap-2 Maneuver	-	-	-	-	89
Stage 1	-	-	-	-	425
Stage 2	-	-	-	-	366

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	143.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	114	-	-	743	-
HCM Lane V/C Ratio	0.956	-	-	0.053	-
HCM Control Delay (s)	143.7	-	-	10.1	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	6.1	-	-	0.2	-

New Minas Transportation Study  
 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street

Scenario 3 Development PM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	744	163	98	838	9	211	8	151	8	6	13
Future Volume (vph)	20	744	163	98	838	9	211	8	151	8	6	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			0.99				0.98
Frt			0.850		0.998				0.850			0.935
Flt Protected	0.950			0.950				0.954				0.985
Satd. Flow (prot)	1789	1883	1601	1789	1879	0	0	1797	1601	0	1706	0
Flt Permitted	0.241			0.191				0.714				0.897
Satd. Flow (perm)	452	1883	1601	360	1879	0	0	1327	1601	0	1554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168		1				156			13
Link Speed (k/h)		50			50			50				50
Link Distance (m)		163.1			885.4			89.5				94.5
Travel Time (s)		11.7			63.7			6.4				6.8
Confl. Peds. (#/hr)	12					12	7					7
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	21	767	168	101	864	9	218	8	156	8	6	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	767	168	101	873	0	0	226	156	0	27	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2		2	6			4		4	4		
Total Split (s)	53.0	53.0	53.0	9.0	62.0		28.0	28.0	28.0	28.0		28.0
Total Lost Time (s)	5.2	5.2	5.2	4.0	5.2			5.7	5.7			5.7
Act Effect Green (s)	50.1	50.1	50.1	58.4	57.2			18.5	18.5			18.5
Actuated g/C Ratio	0.58	0.58	0.58	0.67	0.66			0.21	0.21			0.21
v/c Ratio	0.08	0.70	0.17	0.31	0.70			0.80	0.34			0.08
Control Delay	11.3	19.2	2.2	8.2	14.1			53.5	6.9			18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0
Total Delay	11.3	19.2	2.2	8.2	14.1			53.5	6.9			18.3
LOS	B	B	A	A	B			D	A			B
Approach Delay		16.0			13.5			34.5				18.3
Approach LOS		B			B			C				B
Stops (vph)	10	534	14	33	529			197	21			14
Fuel Used(l)	1	34	3	19	172			15	3			1
CO Emissions (g/hr)	13	642	58	350	3199			284	48			17

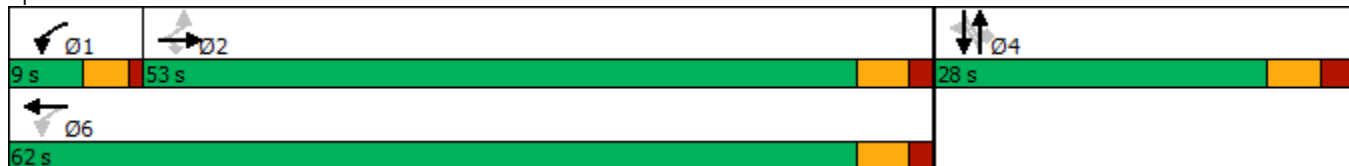


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	3	124	11	68	617			55	9		3	
VOC Emissions (g/hr)	3	148	13	81	738			66	11		4	
Dilemma Vehicles (#)	0	0	0	0	0			0	0		0	
Queue Length 50th (m)	1.6	93.2	0.0	5.4	86.5			35.5	0.0		1.8	
Queue Length 95th (m)	5.5	146.7	8.6	11.3	140.2			#65.3	14.0		8.1	
Internal Link Dist (m)		139.1			861.4			65.5			70.5	
Turn Bay Length (m)	25.0			100.0								
Base Capacity (vph)	261	1089	997	325	1241			342	528		410	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.08	0.70	0.17	0.31	0.70			0.66	0.30		0.07	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	86.6
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	18.0
Intersection LOS:	B
Intersection Capacity Utilization:	82.7%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street



New Minas Transportation Study  
7: Commercial Street & Cornwallis Avenue

Scenario 3 Development PM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1091	23	94	916	29	80	18	99	85	24	26
Future Volume (vph)	25	1091	23	94	916	29	80	18	99	85	24	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		40.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00			0.99			0.99	
Frt		0.997			0.995				0.850		0.974	
Flt Protected	0.950			0.950				0.961			0.970	
Satd. Flow (prot)	1789	3568	0	1789	1872	0	0	1810	1601	0	1758	0
Flt Permitted	0.180			0.135				0.690			0.746	
Satd. Flow (perm)	339	3568	0	254	1872	0	0	1291	1601	0	1352	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3				110			13
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		258.9			128.7			65.9			120.6	
Travel Time (s)		18.6			9.3			4.7			8.7	
Confl. Peds. (#/hr)	7					7	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	1212	26	104	1018	32	89	20	110	94	27	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	1238	0	104	1050	0	0	109	110	0	150	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4		4	4		
Total Split (s)	47.5	47.5		13.0	60.5		29.5	29.5	29.5	29.5	29.5	
Total Lost Time (s)	5.8	5.8		6.0	5.3			5.4	5.4		5.4	
Act Effect Green (s)	44.7	44.7		54.7	55.4			13.2	13.2		13.2	
Actuated g/C Ratio	0.56	0.56		0.69	0.70			0.17	0.17		0.17	
v/c Ratio	0.15	0.62		0.33	0.80			0.51	0.31		0.64	
Control Delay	13.9	15.1		7.9	15.9			38.3	8.4		40.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	13.9	15.1		7.9	15.9			38.3	8.4		40.6	
LOS	B	B		A	B			D	A		D	
Approach Delay		15.0			15.1			23.3			40.6	
Approach LOS		B			B			C			D	
Stops (vph)	16	728		30	599			85	18		110	
Fuel Used(l)	1	57		2	37			5	2		8	
CO Emissions (g/hr)	23	1053		45	679			101	31		153	

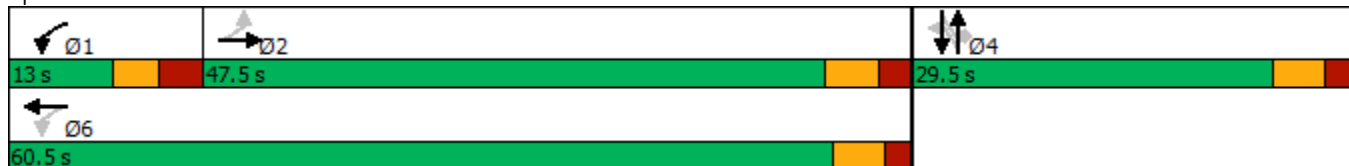


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	203		9	131			19	6		30	
VOC Emissions (g/hr)	5	243		10	157			23	7		35	
Dilemma Vehicles (#)	0	0		0	0			0	0		0	
Queue Length 50th (m)	2.0	65.8		4.3	89.7			15.1	0.0		19.3	
Queue Length 95th (m)	7.9	103.8		11.5	#226.5			29.6	12.1		37.0	
Internal Link Dist (m)		234.9			104.7			41.9			96.6	
Turn Bay Length (m)	25.0								35.0			
Base Capacity (vph)	190	2010		311	1308			393	564		421	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.15	0.62		0.33	0.80			0.28	0.20		0.36	

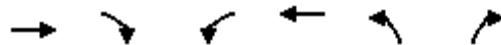
Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	79.3
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	17.1
Intersection LOS:	B
Intersection Capacity Utilization	84.9%
ICU Level of Service	E
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 7: Commercial Street & Cornwallis Avenue







Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1051	206	18	1009	251	16
Future Volume (vph)	1051	206	18	1009	251	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		50.0	30.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.97	
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1883	1601	1789	1883	1789	1601
Flt Permitted			0.063		0.950	
Satd. Flow (perm)	1883	1601	119	1883	1741	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		135				17
Link Speed (k/h)	50			50	50	
Link Distance (m)	239.7			258.9	70.8	
Travel Time (s)	17.3			18.6	5.1	
Confl. Peds. (#/hr)					9	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1095	215	19	1051	261	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1095	215	19	1051	261	17
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2	6			4
Total Split (s)	56.2	56.2	12.7	68.9	21.1	21.1
Total Lost Time (s)	5.9	5.9	5.7	5.9	6.1	6.1
Act Effect Green (s)	58.0	58.0	63.2	63.0	14.7	14.7
Actuated g/C Ratio	0.65	0.65	0.70	0.70	0.16	0.16
v/c Ratio	0.90	0.20	0.09	0.79	0.89	0.06
Control Delay	27.9	3.9	4.9	14.9	69.6	15.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	27.9	3.9	4.9	15.3	69.6	15.2
LOS	C	A	A	B	E	B
Approach Delay	24.0			15.1	66.2	
Approach LOS	C			B	E	
Stops (vph)	694	37	6	666	219	7
Fuel Used(l)	62	6	1	51	20	0
CO Emissions (g/hr)	1155	114	12	954	373	8



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
NOx Emissions (g/hr)	223	22	2	184	72	2
VOC Emissions (g/hr)	266	26	3	220	86	2
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (m)	116.2	3.7	0.8	105.7	44.6	0.0
Queue Length 95th (m)	#279.3	15.9	2.6	164.7	#86.1	5.5
Internal Link Dist (m)	215.7			234.9	46.8	
Turn Bay Length (m)		50.0	30.0			
Base Capacity (vph)	1216	1082	214	1323	299	282
Starvation Cap Reductn	0	0	0	46	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.20	0.09	0.82	0.87	0.06

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 89.7  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 24.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 79.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 8: Valley View Drive & Commercial Street**



Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Vol, veh/h	29	1203	1111	90	54	45
Future Vol, veh/h	29	1203	1111	90	54	45
Conflicting Peds, #/hr	2	0	0	2	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	25	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	34	1399	1292	105	63	52

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1399	0	-	0	2814 1353
Stage 1	-	-	-	-	1347 -
Stage 2	-	-	-	-	1467 -
Critical Hdwy	4.12	-	-	-	6.43 6.22
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.218	-	-	-	3.527 3.318
Pot Cap-1 Maneuver	488	-	-	-	~ 20 183
Stage 1	-	-	-	-	241 -
Stage 2	-	-	-	-	211 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	487	-	-	-	~ 19 182
Mov Cap-2 Maneuver	-	-	-	-	108 -
Stage 1	-	-	-	-	224 -
Stage 2	-	-	-	-	211 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	56.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	487	-	-	-	108	182
HCM Lane V/C Ratio	0.069	-	-	-	0.581	0.288
HCM Control Delay (s)	12.9	-	-	-	76.8	32.6
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.2	-	-	-	2.8	1.1

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

New Minas Transportation Study  
26: Prospect Road/Driveway & Commercial Street

Scenario 3 Development PM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	845	25	234	931	8	60	24	244	56	33	21
Future Volume (vph)	9	845	25	234	931	8	60	24	244	56	33	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%				0%
Storage Length (m)	35.0		0.0	25.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98					0.99
Frt		0.996			0.999			0.863				0.941
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1874	0	1789	1881	0	1789	1625	0	1789	1726	0
Flt Permitted	0.167			0.061			0.715			0.205		
Satd. Flow (perm)	315	1874	0	115	1881	0	1325	1625	0	386	1726	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			282				25
Link Speed (k/h)		50			50			50				50
Link Distance (m)		568.7			373.5			180.2				90.2
Travel Time (s)		40.9			26.9			13.0				6.5
Confl. Peds. (#/hr)	3		5	5		3	6					6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	11	994	29	275	1095	9	71	28	287	66	39	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1023	0	275	1104	0	71	315	0	66	64	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		6		5	2			4				4
Permitted Phases	6			2			4			4		
Total Split (s)	65.6	65.6		19.3	84.9		25.1	25.1		25.1		25.1
Total Lost Time (s)	5.2	5.2		5.4	5.2		5.6	5.6		5.6		5.6
Act Effect Green (s)	60.4	60.4		79.5	79.7		19.5	19.5		19.5		19.5
Actuated g/C Ratio	0.55	0.55		0.72	0.72		0.18	0.18		0.18		0.18
v/c Ratio	0.06	0.99		0.94	0.81		0.30	0.61		0.97		0.20
Control Delay	12.9	52.0		69.8	16.2		43.5	12.5		149.2		27.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	12.9	52.0		69.8	16.2		43.5	12.5		149.2		27.4
LOS	B	D		E	B		D	B		F		C
Approach Delay		51.6			26.9			18.2				89.3
Approach LOS		D			C			B				F
Stops (vph)	5	731		145	616		52	48		43		30
Fuel Used(l)	1	98		24	59		4	8		8		2
CO Emissions (g/hr)	13	1827		449	1094		78	153		146		42

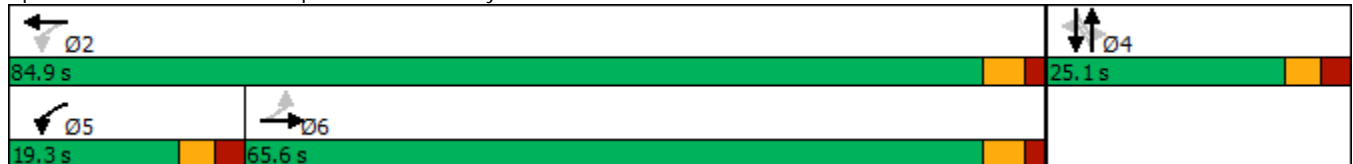


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	353		87	211		15	30		28	8	
VOC Emissions (g/hr)	3	421		103	252		18	35		34	10	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (m)	1.1	207.0		43.0	137.3		13.4	6.0		14.2	7.1	
Queue Length 95th (m)	3.7	#273.8		#82.6	171.6		25.3	25.8		#38.9	17.6	
Internal Link Dist (m)		544.7			349.5			156.2			66.2	
Turn Bay Length (m)	35.0			25.0			50.0					
Base Capacity (vph)	172	1030		294	1363		234	520		68	326	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.99		0.94	0.81		0.30	0.61		0.97	0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	37.3
Intersection LOS:	D
Intersection Capacity Utilization:	99.3%
ICU Level of Service:	F
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 26: Prospect Road/Driveway & Commercial Street



New Minas Transportation Study  
21: Highbury Road & Commercial Street

Scenario 3 Development PM  
12-19-2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	848	48	50	944	6	46	31	44	64	29	60
Future Volume (vph)	19	848	48	50	944	6	46	31	44	64	29	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			1.00	
Frt		0.992			0.999			0.951			0.947	
Flt Protected	0.950			0.950				0.981			0.980	
Satd. Flow (prot)	1789	1863	0	1789	1881	0	0	1734	0	0	1741	0
Flt Permitted	0.109			0.130				0.767			0.791	
Satd. Flow (perm)	205	1863	0	245	1881	0	0	1356	0	0	1405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4						27			30	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		576.1			568.7			152.7			108.5	
Travel Time (s)		41.5			40.9			11.0			7.8	
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	5%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	893	51	53	994	6	48	33	46	67	31	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	944	0	53	1000	0	0	127	0	0	161	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases	2			6			4			4		
Total Split (s)	13.8	57.9		13.5	57.6		28.6	28.6		28.6	28.6	
Total Lost Time (s)	6.8	6.0		6.5	5.7			5.6			5.6	
Act Effect Green (s)	57.8	54.7		59.3	57.5			13.4			13.4	
Actuated g/C Ratio	0.66	0.63		0.68	0.66			0.15			0.15	
v/c Ratio	0.08	0.81		0.18	0.81			0.55			0.67	
Control Delay	5.7	22.8		6.5	21.4			36.2			42.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.7	22.8		6.5	21.4			36.2			42.5	
LOS	A	C		A	C			D			D	
Approach Delay		22.5			20.6			36.2			42.5	
Approach LOS		C			C			D			D	
Stops (vph)	7	620		16	590			85			113	
Fuel Used(l)	1	79		3	80			7			9	
CO Emissions (g/hr)	24	1465		62	1491			131			169	

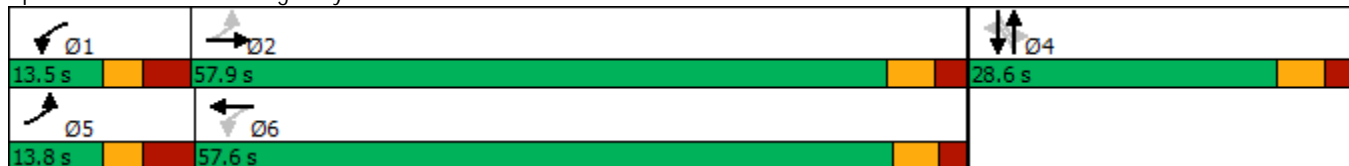


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	5	283		12	288			25			33	
VOC Emissions (g/hr)	5	338		14	344			30			39	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (m)	0.9	130.7		2.3	84.6			16.2			21.8	
Queue Length 95th (m)	3.5	#249.7		6.8	#270.4			33.3			41.6	
Internal Link Dist (m)		552.1			544.7			128.7			84.5	
Turn Bay Length (m)	25.0			25.0								
Base Capacity (vph)	263	1168		290	1238			380			395	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.81		0.18	0.81			0.33			0.41	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.4  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 23.8      Intersection LOS: C  
 Intersection Capacity Utilization 71.2%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 21: Highbury Road & Commercial Street



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:30	3:30	3:30	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	5916	5769	5978	5823	5859	5883	6083
Vehs Exited	5990	5729	5941	5853	5888	5863	6026
Starting Vehs	327	305	297	325	329	337	321
Ending Vehs	253	345	334	295	300	357	378
Travel Distance (km)	8657	8357	8673	8547	8541	8508	8801
Travel Time (hr)	339.3	374.4	341.5	359.9	438.6	381.4	457.0
Total Delay (hr)	160.9	202.2	162.3	182.9	262.2	204.9	275.6
Total Stops	9033	9158	8529	8846	10508	9704	10982
Fuel Used (l)	774.8	785.9	775.2	784.8	849.6	799.5	879.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:30	3:30	3:30	3:30
End Time	5:00	5:00	5:00	5:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	5829	5917	5750	5881
Vehs Exited	5817	5911	5657	5867
Starting Vehs	323	291	250	307
Ending Vehs	335	297	343	321
Travel Distance (km)	8435	8649	8254	8542
Travel Time (hr)	397.9	366.7	398.9	385.6
Total Delay (hr)	223.5	188.4	228.4	209.1
Total Stops	9777	9630	8515	9468
Fuel Used (l)	809.3	795.4	800.1	805.4

Interval #0 Information Seeding

Start Time	3:30
End Time	4:00
Total Time (min)	30
Volumes adjusted by Growth Factors.	
No data recorded this interval.	



**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1440	1386	1427	1356	1422	1463	1547
Vehs Exited	1512	1442	1477	1442	1423	1482	1519
Starting Vehs	327	305	297	325	329	337	321
Ending Vehs	255	249	247	239	328	318	349
Travel Distance (km)	2174	2061	2109	2073	2067	2153	2284
Travel Time (hr)	78.3	80.1	70.8	69.3	82.9	84.9	96.3
Total Delay (hr)	33.6	37.4	27.1	26.3	40.1	40.3	49.2
Total Stops	2140	1998	1652	1560	2394	2412	2656
Fuel Used (l)	189.3	182.7	178.8	175.4	184.9	192.9	209.6

**Interval #1 Information Recording**

Start Time	4:00
End Time	4:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1471	1434	1379	1428
Vehs Exited	1484	1439	1360	1458
Starting Vehs	323	291	250	307
Ending Vehs	310	286	269	280
Travel Distance (km)	2140	2103	2002	2117
Travel Time (hr)	83.1	76.1	59.9	78.2
Total Delay (hr)	38.7	32.7	18.6	34.4
Total Stops	2366	2145	1373	2070
Fuel Used (l)	189.0	184.2	163.1	185.0

**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1618	1522	1584	1577	1621	1540	1580
Vehs Exited	1489	1425	1435	1457	1553	1490	1525
Starting Vehs	255	249	247	239	328	318	349
Ending Vehs	384	346	396	359	396	368	404
Travel Distance (km)	2227	2096	2214	2190	2314	2162	2201
Travel Time (hr)	88.5	87.7	84.9	86.8	110.1	90.7	110.0
Total Delay (hr)	42.4	44.5	39.3	41.5	62.4	45.8	64.5
Total Stops	2476	2086	2074	2036	2965	2233	3000
Fuel Used (l)	198.5	191.5	195.0	197.1	222.6	198.9	217.1

**Interval #2 Information Recording**

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1519	1584	1605	1576
Vehs Exited	1463	1468	1500	1482
Starting Vehs	310	286	269	280
Ending Vehs	366	402	374	373
Travel Distance (km)	2100	2182	2210	2190
Travel Time (hr)	99.8	89.4	84.3	93.2
Total Delay (hr)	56.4	44.4	38.7	48.0
Total Stops	2630	2412	2400	2430
Fuel Used (l)	202.0	197.2	195.9	201.6

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	6	7
Vehs Entered	1423	1367	1486	1445	1399	1436	1431
Vehs Exited	1479	1383	1557	1465	1455	1451	1501
Starting Vehs	384	346	396	359	396	368	404
Ending Vehs	328	330	325	339	340	353	334
Travel Distance (km)	2119	2033	2219	2159	2047	2080	2168
Travel Time (hr)	96.0	106.1	96.4	102.4	126.1	102.0	128.3
Total Delay (hr)	52.3	64.4	50.6	57.7	84.0	59.0	83.7
Total Stops	2536	2388	2614	2605	2758	2596	2677
Fuel Used (l)	200.4	204.9	205.3	206.8	223.2	201.2	228.8

**Interval #3 Information Recording**

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	8	9	10	Avg
Vehs Entered	1352	1430	1354	1413
Vehs Exited	1405	1476	1377	1455
Starting Vehs	366	402	374	373
Ending Vehs	313	356	351	326
Travel Distance (km)	2052	2158	2004	2104
Travel Time (hr)	108.5	106.9	115.1	108.8
Total Delay (hr)	66.2	62.4	73.7	65.4
Total Stops	2234	2754	2321	2545
Fuel Used (l)	207.0	210.6	209.5	209.8

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1435	1494	1481	1445	1417	1444	1525
Vehs Exited	1510	1479	1472	1489	1457	1440	1481
Starting Vehs	328	330	325	339	340	353	334
Ending Vehs	253	345	334	295	300	357	378
Travel Distance (km)	2137	2167	2132	2124	2112	2114	2148
Travel Time (hr)	76.4	100.5	89.5	101.4	119.5	103.7	122.4
Total Delay (hr)	32.6	55.9	45.4	57.3	75.7	59.9	78.2
Total Stops	1881	2686	2189	2645	2391	2463	2649
Fuel Used (l)	186.7	206.7	196.1	205.5	218.9	206.5	224.3

**Interval #4 Information Recording**

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	8	9	10	Avg
Vehs Entered	1487	1469	1412	1460
Vehs Exited	1465	1528	1420	1474
Starting Vehs	313	356	351	326
Ending Vehs	335	297	343	321
Travel Distance (km)	2142	2206	2038	2132
Travel Time (hr)	106.5	94.3	139.7	105.4
Total Delay (hr)	62.2	48.9	97.4	61.4
Total Stops	2547	2319	2421	2419
Fuel Used (l)	211.2	203.4	231.7	209.1

**1: Deep Hollow Road & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.7	0.6	0.2	0.2	0.3
Total Delay (hr)	1.4	0.1	0.1	0.5	0.7	0.2	3.0
Total Del/Veh (s)	6.0	5.6	8.5	2.6	35.9	19.6	6.0
Stop Delay (hr)	0.0	0.0	0.1	0.2	0.6	0.2	1.0
Stop Del/Veh (s)	0.0	0.0	5.8	0.9	33.4	18.8	2.1

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.0	0.6	0.3	1.0	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1
Total Delay (hr)	0.2	2.7	0.1	0.6	4.0	0.0	2.0	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	31.4	13.1	3.3	21.7	16.9	13.1	34.0	41.7	2.4	26.4	22.5	11.7
Stop Delay (hr)	0.2	1.5	0.0	0.3	1.2	0.0	1.7	0.1	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	26.5	7.2	0.0	11.8	5.1	4.5	30.1	35.9	0.1	24.6	19.7	11.5

**2: Silver Fox Avenue/Bonavista Avenue & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.5
Total Delay (hr)	10.0
Total Del/Veh (s)	15.7
Stop Delay (hr)	5.2
Stop Del/Veh (s)	8.1

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.0	1.3	13.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.9	0.6	0.5	48.8	51.0	47.6	0.4	0.5	3.8	0.2	0.2	0.2
Total Delay (hr)	0.3	5.3	0.1	0.5	7.8	0.2	0.7	0.1	0.2	0.7	0.2	0.2
Total Del/Veh (s)	47.2	17.4	14.3	18.5	31.2	28.0	30.8	28.6	7.5	29.9	30.3	26.8
Stop Delay (hr)	0.3	2.5	0.0	0.4	5.7	0.2	0.6	0.1	0.2	0.6	0.2	0.2
Stop Del/Veh (s)	38.4	8.1	6.8	15.3	22.8	22.4	28.9	25.2	7.0	26.7	25.8	25.3

**7: Commercial Street & Cornwallis Avenue Performance by movement**

Movement	All
Denied Delay (hr)	14.9
Denied Del/Veh (s)	21.6
Total Delay (hr)	16.2
Total Del/Veh (s)	23.5
Stop Delay (hr)	10.9
Stop Del/Veh (s)	15.8

**8: Valley View Drive & Commercial Street Performance by movement**

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.6	0.2	0.0	1.5	3.6	0.2	6.0
Denied Del/Veh (s)	1.9	2.8	2.8	5.3	51.0	40.1	8.5
Total Delay (hr)	6.0	0.9	0.3	13.5	5.1	0.1	25.9
Total Del/Veh (s)	20.0	14.8	60.5	48.0	73.1	25.8	35.9
Stop Delay (hr)	2.5	0.3	0.2	9.1	4.9	0.1	17.1
Stop Del/Veh (s)	8.4	4.9	46.1	32.3	69.9	26.1	23.8

**9: Commercial Street & Jones Road Performance by movement**

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.1	2.7	0.2	11.6	10.6	25.2
Denied Del/Veh (s)	0.6	0.2	8.5	8.7	803.7	796.8	35.2
Total Delay (hr)	0.3	2.1	12.5	0.9	9.7	5.3	30.8
Total Del/Veh (s)	37.9	6.3	38.5	38.1	854.0	593.9	43.0
Stop Delay (hr)	0.3	0.1	6.8	0.5	9.8	5.3	22.7
Stop Del/Veh (s)	31.4	0.3	21.0	22.0	857.9	596.8	31.7

**21: Highbury Road & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.8	0.9	0.8	0.1	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.1	4.0	0.2	0.4	5.3	0.0	0.4	0.2	0.2	0.6	0.3	0.4
Total Del/Veh (s)	25.4	16.7	13.7	30.2	20.3	17.7	30.8	29.6	20.2	30.3	32.3	21.8
Stop Delay (hr)	0.1	1.7	0.1	0.2	2.1	0.0	0.3	0.2	0.2	0.5	0.2	0.3
Stop Del/Veh (s)	16.6	7.3	6.2	18.7	8.1	7.4	27.9	25.1	18.8	26.9	27.5	20.1

**21: Highbury Road & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.4
Total Delay (hr)	12.1
Total Del/Veh (s)	19.9
Stop Delay (hr)	6.1
Stop Del/Veh (s)	10.0

**26: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	2.2	6.9	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	36.0	27.9	0.0	3.6	0.5	0.5	0.6	0.3	0.2
Total Delay (hr)	0.1	9.8	0.3	7.1	22.1	0.2	0.8	0.4	2.5	2.6	0.3	0.1
Total Del/Veh (s)	54.1	37.4	38.5	112.1	87.8	91.5	52.5	52.3	35.0	172.3	38.2	18.7
Stop Delay (hr)	0.1	5.6	0.2	5.2	14.4	0.1	0.8	0.3	2.2	2.6	0.3	0.1
Stop Del/Veh (s)	37.4	21.5	24.0	82.9	57.1	59.9	47.4	45.8	31.4	170.0	34.8	18.1

**26: Prospect Road/Driveway & Commercial Street Performance by movement**

Movement	All
Denied Delay (hr)	9.2
Denied Del/Veh (s)	13.2
Total Delay (hr)	46.3
Total Del/Veh (s)	65.1
Stop Delay (hr)	32.0
Stop Del/Veh (s)	44.9

**Total Network Performance**

Denied Delay (hr)	56.1
Denied Del/Veh (s)	33.8
Total Delay (hr)	153.0
Total Del/Veh (s)	89.0
Stop Delay (hr)	95.8
Stop Del/Veh (s)	55.7

**Intersection: 1: Deep Hollow Road & Commercial Street**

Movement	EB	B40	WB	NB
Directions Served	TR	T	LT	LR
Maximum Queue (m)	5.5	700.6	80.4	36.8
Average Queue (m)	0.3	43.6	16.5	16.1
95th Queue (m)	3.1	357.4	56.0	30.4
Link Distance (m)	591.4	873.9	128.6	252.8
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		1	0	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 2: Silver Fox Avenue/Bonavista Avenue & Commercial Street**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	TR	LT	R	LTR
Maximum Queue (m)	25.9	123.3	47.3	72.6	130.3	66.8	5.4	17.0
Average Queue (m)	5.4	59.8	1.7	15.6	57.2	35.4	0.2	4.5
95th Queue (m)	17.2	105.4	28.5	45.3	110.1	58.3	5.5	12.8
Link Distance (m)		157.3	157.3		873.9	82.0	82.0	86.5
Upstream Blk Time (%)		0	0			0		
Queuing Penalty (veh)		0	0			0		
Storage Bay Dist (m)	25.0			100.0				
Storage Blk Time (%)	0	20		0	1			
Queuing Penalty (veh)	0	4		0	1			

**Intersection: 7: Commercial Street & Cornwallis Avenue**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (m)	26.0	170.0	42.5	125.1	131.4	36.6	29.6	41.2
Average Queue (m)	6.4	60.4	34.7	62.1	91.0	12.8	6.9	18.6
95th Queue (m)	18.6	134.5	52.0	154.8	157.5	26.6	18.5	34.4
Link Distance (m)		238.8		118.4	118.4	51.5		111.3
Upstream Blk Time (%)		0		13	35	0		
Queuing Penalty (veh)		0		0	0	0		
Storage Bay Dist (m)	25.0		40.0				35.0	
Storage Blk Time (%)	1	16	5			0	0	
Queuing Penalty (veh)	11	94	27			0	0	



**Intersection: 8: Valley View Drive & Commercial Street**

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (m)	205.0	52.5	32.3	246.5	70.3	39.8
Average Queue (m)	105.2	27.7	6.5	159.0	52.5	4.2
95th Queue (m)	193.7	63.9	22.0	296.5	76.7	22.2
Link Distance (m)	224.6			238.8	58.7	58.7
Upstream Blk Time (%)	0			6	31	1
Queuing Penalty (veh)	1			61	0	0
Storage Bay Dist (m)		50.0	30.0			
Storage Blk Time (%)	15	1	0	36		
Queuing Penalty (veh)	31	5	1	7		

**Intersection: 9: Commercial Street & Jones Road**

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (m)	20.2	45.9	226.6	27.4	114.3
Average Queue (m)	6.3	5.7	144.5	22.1	99.1
95th Queue (m)	17.0	27.4	287.8	35.3	136.9
Link Distance (m)		358.0	224.6		103.5
Upstream Blk Time (%)			2		84
Queuing Penalty (veh)			26		0
Storage Bay Dist (m)	25.0			25.0	
Storage Blk Time (%)	0	1		72	86
Queuing Penalty (veh)	6	0		33	46

**Intersection: 21: Highbury Road & Commercial Street**

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	23.3	144.0	27.2	183.5	37.4	47.5
Average Queue (m)	4.1	69.4	8.5	82.2	17.1	22.2
95th Queue (m)	14.5	120.3	20.8	163.8	31.4	40.7
Link Distance (m)		568.7		551.4	143.8	98.9
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	25.0		25.0			
Storage Blk Time (%)	0	21	0	20		
Queuing Penalty (veh)	0	4	0	10		

Intersection: 26: Prospect Road/Driveway & Commercial Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	25.6	295.5	27.3	361.4	50.5	93.9	59.7	34.5
Average Queue (m)	2.4	129.2	25.7	323.2	16.8	46.1	24.7	10.4
95th Queue (m)	12.9	272.3	31.2	447.8	40.5	83.4	57.1	24.4
Link Distance (m)		551.4		358.0		173.0	80.9	80.9
Upstream Blk Time (%)				5			1	
Queuing Penalty (veh)				55			0	
Storage Bay Dist (m)	35.0		25.0		50.0			
Storage Blk Time (%)	0	29	27	20	0	10		
Queuing Penalty (veh)	0	3	253	46	0	6		

Network Summary

Network wide Queuing Penalty: 735



## **Appendix B: Arcady Reports**

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Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** 212004 Commercial Street & Granite Drive.j9  
**Path:** Z:\Harbourside Transportation Consultants\Projects\212004 New Minas Transportation\02 Analysis\Arcady  
**Report generation date:** 2021-12-08 4:01:46 PM

- » Existing Configuration - S1 Existing, AM
- » Existing Configuration - S1 Existing, PM
- » Existing Configuration - S2 Background Growth, AM
- » Existing Configuration - S2 Background Growth, PM
- » Existing Configuration - S3 Development, AM
- » Existing Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
<b>Existing Configuration - S1 Existing</b>												
1 - Commercial Street (East Leg)	0.5	1.99	0.19	A	1.96	A	1.5	2.21	0.27	A	2.28	A
2 - Old Dyke Road	0.5	4.15	0.02	A			0.5	5.01	0.09	A		
3 - Commercial Street (West Leg)	0.5	1.87	0.18	A			1.4	2.09	0.26	A		
4 - Granite Drive	0.5	1.86	0.05	A			0.5	2.06	0.06	A		
<b>Existing Configuration - S2 Background Growth</b>												
1 - Commercial Street (East Leg)	1.2	2.14	0.24	A	2.10	A	2.4	2.48	0.34	A	2.55	A
2 - Old Dyke Road	0.5	4.55	0.03	A			0.5	5.90	0.13	A		
3 - Commercial Street (West Leg)	1.1	1.98	0.22	A			2.1	2.31	0.33	A		
4 - Granite Drive	0.5	1.98	0.07	A			0.5	2.25	0.08	A		
<b>Existing Configuration - S3 Development</b>												
1 - Commercial Street (East Leg)	2.7	3.04	0.37	A	2.95	A	1.8	4.40	0.58	A	3.88	A
2 - Old Dyke Road	0.5	7.29	0.05	A			1.5	14.41	0.27	B		
3 - Commercial Street (West Leg)	1.3	2.17	0.24	A			2.8	2.92	0.39	A		
4 - Granite Drive	2.2	3.46	0.45	A			2.9	3.47	0.39	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

## File summary

### File Description

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\fallaire
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

## Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

# Existing Configuration - S1 Existing, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	1.96	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Commercial Street (East Leg)	
2	Old Dyke Road	
3	Commercial Street (West Leg)	
4	Granite Drive	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Commercial Street (East Leg)	7.50	8.00	15.0	15.0	45.0	30.0	
2 - Old Dyke Road	3.50	4.00	15.0	15.0	45.0	30.0	
3 - Commercial Street (West Leg)	7.50	8.00	15.0	25.0	45.0	30.0	
4 - Granite Drive	7.50	8.00	15.0	25.0	45.0	30.0	

### Bypass

Leg	Leg has bypass	Bypass utilisation (%)
1 - Commercial Street (East Leg)	✓	100
2 - Old Dyke Road		
3 - Commercial Street (West Leg)	✓	100
4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Commercial Street (East Leg)	0.754	2370
2 - Old Dyke Road	0.521	1178
3 - Commercial Street (West Leg)	0.774	2433
4 - Granite Drive	0.774	2433

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	382	100.000
2 - Old Dyke Road		✓	17	100.000
3 - Commercial Street (West Leg)		✓	430	100.000
4 - Granite Drive		✓	101	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	4	360	18
	2 - Old Dyke Road	3	0	10	4
	3 - Commercial Street (West Leg)	359	16	0	55
	4 - Granite Drive	8	4	89	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	2	2	2	11
	2 - Old Dyke Road	2	2	2	2
	3 - Commercial Street (West Leg)	3	2	2	11
	4 - Granite Drive	13	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.19	1.99	0.2	0.5	A
2 - Old Dyke Road	0.02	4.15	0.0	0.5	A
3 - Commercial Street (West Leg)	0.18	1.87	0.2	0.5	A
4 - Granite Drive	0.05	1.86	0.1	0.5	A

# Existing Configuration - S1 Existing, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	2.28	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	556	100.000
2 - Old Dyke Road		✓	68	100.000
3 - Commercial Street (West Leg)		✓	647	100.000
4 - Granite Drive		✓	98	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	6	525	25
	2 - Old Dyke Road	17	0	34	17
	3 - Commercial Street (West Leg)	530	22	1	94
	4 - Granite Drive	20	2	76	0

## Vehicle Mix



### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	2	2	2	8
	2 - Old Dyke Road	2	0	2	2
	3 - Commercial Street (West Leg)	2	2	2	3
	4 - Granite Drive	10	2	3	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.27	2.21	0.4	1.5	A
2 - Old Dyke Road	0.09	5.01	0.1	0.5	A
3 - Commercial Street (West Leg)	0.26	2.09	0.4	1.4	A
4 - Granite Drive	0.06	2.06	0.1	0.5	A

# Existing Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	2.10	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	479	100.000
2 - Old Dyke Road		✓	25	100.000
3 - Commercial Street (West Leg)		✓	538	100.000
4 - Granite Drive		✓	127	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	6	450	23
	2 - Old Dyke Road	6	0	13	6
	3 - Commercial Street (West Leg)	449	20	0	69
	4 - Granite Drive	10	6	111	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	2	2	2	11
	2 - Old Dyke Road	2	2	2	2
	3 - Commercial Street (West Leg)	3	2	2	11
	4 - Granite Drive	13	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.24	2.14	0.3	1.2	A
2 - Old Dyke Road	0.03	4.55	0.0	0.5	A
3 - Commercial Street (West Leg)	0.22	1.98	0.3	1.1	A
4 - Granite Drive	0.07	1.98	0.1	0.5	A

# Existing Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	2.55	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	695	100.000
2 - Old Dyke Road		✓	85	100.000
3 - Commercial Street (West Leg)		✓	810	100.000
4 - Granite Drive		✓	126	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	8	656	31
	2 - Old Dyke Road	21	0	43	21
	3 - Commercial Street (West Leg)	663	28	1	118
	4 - Granite Drive	25	6	95	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
	1 - Commercial Street (East Leg)	2	2	2	8
	2 - Old Dyke Road	2	0	2	2
	3 - Commercial Street (West Leg)	2	2	2	3
	4 - Granite Drive	10	2	3	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.34	2.48	0.5	2.4	A
2 - Old Dyke Road	0.13	5.90	0.2	0.5	A
3 - Commercial Street (West Leg)	0.33	2.31	0.5	2.1	A
4 - Granite Drive	0.08	2.25	0.1	0.5	A

# Existing Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	2.95	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	631	100.000
2 - Old Dyke Road		✓	25	100.000
3 - Commercial Street (West Leg)		✓	714	100.000
4 - Granite Drive		✓	769	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	6	450	175
	2 - Old Dyke Road	6	0	13	6
	3 - Commercial Street (West Leg)	463	20	0	231
	4 - Granite Drive	299	6	464	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
	1 - Commercial Street (East Leg)	2	2	2	11
	2 - Old Dyke Road	2	2	2	2
	3 - Commercial Street (West Leg)	3	2	2	11
	4 - Granite Drive	13	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.37	3.04	0.6	2.7	A
2 - Old Dyke Road	0.05	7.29	0.1	0.5	A
3 - Commercial Street (West Leg)	0.24	2.17	0.3	1.3	A
4 - Granite Drive	0.45	3.46	0.8	2.2	A

# Existing Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Granite Drive	Standard Roundabout		1, 2, 3, 4	3.88	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	1038	100.000
2 - Old Dyke Road		✓	85	100.000
3 - Commercial Street (West Leg)		✓	1222	100.000
4 - Granite Drive		✓	603	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	0	8	656	374
	2 - Old Dyke Road	21	0	43	21
	3 - Commercial Street (West Leg)	679	28	1	514
	4 - Granite Drive	239	6	358	0

## Vehicle Mix



### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Old Dyke Road	3 - Commercial Street (West Leg)	4 - Granite Drive
From	1 - Commercial Street (East Leg)	2	2	2	8
	2 - Old Dyke Road	2	0	2	2
	3 - Commercial Street (West Leg)	2	2	2	3
	4 - Granite Drive	10	2	3	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.58	4.40	1.4	1.8	A
2 - Old Dyke Road	0.27	14.41	0.4	1.5	B
3 - Commercial Street (West Leg)	0.39	2.92	0.6	2.8	A
4 - Granite Drive	0.39	3.47	0.6	2.9	A

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** 212004 Granite Drive & Silver Fox Avenue.j9  
**Path:** Z:\Harbourside Transportation Consultants\Projects\212004 New Minas Transportation\02 Analysis\Arcady  
**Report generation date:** 2021-12-08 3:59:40 PM

- » Existing Configuration - S1 Existing, AM
- » Existing Configuration - S1 Existing, PM
- » Existing Configuration - S2 Background Growth, AM
- » Existing Configuration - S2 Background Growth, PM
- » Existing Configuration - S3 Development, AM
- » Existing Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Existing Configuration - S1 Existing												
1 - Silver Fox Avenue	0.5	3.44	0.06	A	2.47	A	0.5	3.74	0.12	A	2.76	A
2 - Granite Drive (North Leg)	0.5	1.78	0.04	A			0.5	1.79	0.07	A		
3 - County Fair Mall	0.5	3.37	0.04	A			0.5	3.91	0.13	A		
4 - Old Granite Drive	0.5	3.42	0.02	A			0.5	3.77	0.02	A		
5 - Granite Drive (South Leg)	0.5	2.16	0.11	A			0.5	2.15	0.13	A		
Existing Configuration - S2 Background Growth												
1 - Silver Fox Avenue	0.5	3.57	0.08	A	2.55	A	0.5	3.99	0.15	A	2.92	A
2 - Granite Drive (North Leg)	0.5	1.81	0.05	A			0.5	1.86	0.09	A		
3 - County Fair Mall	0.5	3.47	0.06	A			0.5	4.21	0.17	A		
4 - Old Granite Drive	0.5	3.51	0.03	A			0.5	3.98	0.03	A		
5 - Granite Drive (South Leg)	0.5	2.24	0.14	A			0.5	2.24	0.16	A		
Existing Configuration - S3 Development												
1 - Silver Fox Avenue	0.5	5.97	0.14	A	4.15	A	1.2	6.23	0.27	A	4.34	A
2 - Granite Drive (North Leg)	1.2	2.28	0.22	A			1.5	3.40	0.49	A		
3 - County Fair Mall	0.5	4.30	0.08	A			2.7	9.24	0.37	A		
4 - Old Granite Drive	0.5	4.31	0.04	A			0.5	7.58	0.07	A		
5 - Granite Drive (South Leg)	1.9	4.77	0.59	A			1.4	3.60	0.48	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

## File summary

### File Description

Title	
Location	
Site number	
Date	2021-04-28
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\fallaire
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

## Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

# Existing Configuration - S1 Existing, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	2.47	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Silver Fox Avenue	
2	Granite Drive (North Leg)	
3	County Fair Mall	
4	Old Granite Drive	
5	Granite Drive (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Silver Fox Avenue	3.50	4.00	15.0	30.0	60.0	30.0	
2 - Granite Drive (North Leg)	7.50	8.00	15.0	15.0	60.0	30.0	
3 - County Fair Mall	3.50	4.00	15.0	25.0	60.0	30.0	
4 - Old Granite Drive	3.50	4.00	15.0	15.0	60.0	30.0	
5 - Granite Drive (South Leg)	4.00	8.00	25.0	20.0	60.0	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Silver Fox Avenue	0.478	1217
2 - Granite Drive (North Leg)	0.669	2370
3 - County Fair Mall	0.475	1209
4 - Old Granite Drive	0.462	1178
5 - Granite Drive (South Leg)	0.611	2014

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	60	100.000
2 - Granite Drive (North Leg)		✓	81	100.000
3 - County Fair Mall		✓	45	100.000
4 - Old Granite Drive		✓	22	100.000
5 - Granite Drive (South Leg)		✓	191	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	5	10	5	40
	2 - Granite Drive (North Leg)	5	0	5	5	66
	3 - County Fair Mall	15	5	0	5	20
	4 - Old Granite Drive	5	5	5	0	7
	5 - Granite Drive (South Leg)	59	91	35	6	0

## Vehicle Mix

### Truck Percentages

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	10
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	10	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.06	3.44	0.1	0.5	A
2 - Granite Drive (North Leg)	0.04	1.78	0.0	0.5	A
3 - County Fair Mall	0.04	3.37	0.0	0.5	A
4 - Old Granite Drive	0.02	3.42	0.0	0.5	A
5 - Granite Drive (South Leg)	0.11	2.16	0.1	0.5	A

# Existing Configuration - S1 Existing, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	2.76	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	119	100.000
2 - Granite Drive (North Leg)		✓	146	100.000
3 - County Fair Mall		✓	126	100.000
4 - Old Granite Drive		✓	22	100.000
5 - Granite Drive (South Leg)		✓	227	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	5	19	5	90
	2 - Granite Drive (North Leg)	9	0	6	5	126
	3 - County Fair Mall	16	10	0	5	95
	4 - Old Granite Drive	5	5	5	0	7
	5 - Granite Drive (South Leg)	57	82	83	5	0

## Vehicle Mix

### Truck Percentages

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	2
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	4	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.12	3.74	0.1	0.5	A
2 - Granite Drive (North Leg)	0.07	1.79	0.1	0.5	A
3 - County Fair Mall	0.13	3.91	0.2	0.5	A
4 - Old Granite Drive	0.02	3.77	0.0	0.5	A
5 - Granite Drive (South Leg)	0.13	2.15	0.1	0.5	A

# Existing Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	2.55	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	75	100.000
2 - Granite Drive (North Leg)		✓	99	100.000
3 - County Fair Mall		✓	56	100.000
4 - Old Granite Drive		✓	27	100.000
5 - Granite Drive (South Leg)		✓	240	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	6	13	6	50
	2 - Granite Drive (North Leg)	6	0	6	6	81
	3 - County Fair Mall	19	6	0	6	25
	4 - Old Granite Drive	6	6	6	0	9
	5 - Granite Drive (South Leg)	74	114	44	8	0

## Vehicle Mix



### Truck Percentages

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	10
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	10	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.08	3.57	0.1	0.5	A
2 - Granite Drive (North Leg)	0.05	1.81	0.1	0.5	A
3 - County Fair Mall	0.06	3.47	0.1	0.5	A
4 - Old Granite Drive	0.03	3.51	0.0	0.5	A
5 - Granite Drive (South Leg)	0.14	2.24	0.2	0.5	A

# Existing Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	2.92	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	149	100.000
2 - Granite Drive (North Leg)		✓	183	100.000
3 - County Fair Mall		✓	158	100.000
4 - Old Granite Drive		✓	27	100.000
5 - Granite Drive (South Leg)		✓	284	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	6	24	6	113
	2 - Granite Drive (North Leg)	11	0	8	6	158
	3 - County Fair Mall	20	13	0	6	119
	4 - Old Granite Drive	6	6	6	0	9
	5 - Granite Drive (South Leg)	71	103	104	6	0

## Vehicle Mix

### Truck Percentages

		To				
From		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	2
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	4	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.15	3.99	0.2	0.5	A
2 - Granite Drive (North Leg)	0.09	1.86	0.1	0.5	A
3 - County Fair Mall	0.17	4.21	0.2	0.5	A
4 - Old Granite Drive	0.03	3.98	0.0	0.5	A
5 - Granite Drive (South Leg)	0.16	2.24	0.2	0.5	A

# Existing Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	4.15	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	89	100.000
2 - Granite Drive (North Leg)		✓	413	100.000
3 - County Fair Mall		✓	70	100.000
4 - Old Granite Drive		✓	32	100.000
5 - Granite Drive (South Leg)		✓	977	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	6	13	6	64
	2 - Granite Drive (North Leg)	6	0	6	6	395
	3 - County Fair Mall	19	6	0	6	39
	4 - Old Granite Drive	6	6	6	0	14
	5 - Granite Drive (South Leg)	119	756	89	13	0

## Vehicle Mix

### Truck Percentages

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	10
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	10	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.14	5.97	0.2	0.5	A
2 - Granite Drive (North Leg)	0.22	2.28	0.3	1.2	A
3 - County Fair Mall	0.08	4.30	0.1	0.5	A
4 - Old Granite Drive	0.04	4.31	0.0	0.5	A
5 - Granite Drive (South Leg)	0.59	4.77	1.4	1.9	A

# Existing Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4, 5	4.34	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Silver Fox Avenue		✓	196	100.000
2 - Granite Drive (North Leg)		✓	922	100.000
3 - County Fair Mall		✓	205	100.000
4 - Old Granite Drive		✓	32	100.000
5 - Granite Drive (South Leg)		✓	824	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	0	6	24	6	160
	2 - Granite Drive (North Leg)	11	0	8	6	897
	3 - County Fair Mall	20	13	0	6	166
	4 - Old Granite Drive	6	6	6	0	14
	5 - Granite Drive (South Leg)	100	580	133	11	0

## Vehicle Mix

### Truck Percentages

		To				
		1 - Silver Fox Avenue	2 - Granite Drive (North Leg)	3 - County Fair Mall	4 - Old Granite Drive	5 - Granite Drive (South Leg)
From	1 - Silver Fox Avenue	2	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2	2
	3 - County Fair Mall	2	2	2	2	2
	4 - Old Granite Drive	2	2	2	2	2
	5 - Granite Drive (South Leg)	2	4	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Silver Fox Avenue	0.27	6.23	0.4	1.2	A
2 - Granite Drive (North Leg)	0.49	3.40	1.0	1.5	A
3 - County Fair Mall	0.37	9.24	0.6	2.7	A
4 - Old Granite Drive	0.07	7.58	0.1	0.5	A
5 - Granite Drive (South Leg)	0.48	3.60	0.9	1.4	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** 212004 Granite Drive & Highway 101.j9

**Path:** Z:\Harbourside Transportation Consultants\Projects\212004 New Minas Transportation\02 Analysis\Arcady

**Report generation date:** 2021-12-10 3:17:36 PM

- 
- »Existing Configuration - S1 Existing, AM
  - »Existing Configuration - S1 Existing, PM
  - »Existing Configuration - S2 Background Growth, AM
  - »Existing Configuration - S2 Background Growth, PM
  - »Existing Configuration - S3 Development, AM
  - »Existing Configuration - S3 Development, PM
  - »Ultimate Configuration - S1 Existing, AM
  - »Ultimate Configuration - S1 Existing, PM
  - »Ultimate Configuration - S2 Background Growth, AM
  - »Ultimate Configuration - S2 Background Growth, PM
  - »Ultimate Configuration - S3 Development, AM
  - »Ultimate Configuration - S3 Development, PM



### Summary of intersection performance

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
<b>Existing Configuration - S1 Existing</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	2.93	0.00	A	2.48	A	~1	0.00	0.00	A	1.74	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	0.5	1.68	0.06	A			0.5	1.74	0.15	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	0.5	3.15	0.08	A			0.5	3.21	0.11	A		
2 - Granite Dr & H101 EB - 2 - Granite Drive	0.5	3.15	0.07	A	3.21	A	0.5	3.23	0.13	A	3.33	A
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	3.27	0.08	A			0.5	3.46	0.11	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	~1	0.00	0.00	A			~1	0.00	0.00	A		
<b>Existing Configuration - S2 Background Growth</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	2.96	0.00	A	2.52	A	~1	0.00	0.00	A	1.81	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	0.5	1.71	0.08	A			0.5	1.82	0.18	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	0.5	3.22	0.10	A			0.5	3.31	0.13	A		
2 - Granite Dr & H101 EB - 2 - Granite Drive	0.5	3.21	0.09	A	3.30	A	0.5	3.35	0.16	A	3.49	A
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	3.39	0.11	A			0.5	3.65	0.15	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	~1	0.00	0.00	A			~1	0.00	0.00	A		
<b>Existing Configuration - S3 Development</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	6.21	0.15	A	18.90	C	1.0	6.46	0.27	A	8.17	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	1.5	2.37	0.27	A			3.2	4.92	0.65	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	49.0	29.92	0.91	D			16.0	13.18	0.78	B		
2 - Granite Dr & H101 EB - 2 - Granite Drive	1.9	5.27	0.46	A	4.13	A	100.6	93.91	1.03	F	47.15	E
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	4.37	0.13	A			1.1	8.04	0.27	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	1.5	3.51	0.54	A			1.9	3.07	0.45	A		
<b>Ultimate Configuration - S1 Existing</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	2.93	0.00	A	2.15	A	~1	0.00	0.00	A	1.46	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	0.5	1.68	0.06	A			0.5	1.74	0.15	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	0.5	1.95	0.05	A			0.5	1.96	0.07	A		
2 - Granite Dr & H101 EB - 2 - Granite Drive	0.5	1.95	0.05	A	2.65	A	0.5	1.95	0.08	A	2.64	A
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	3.27	0.08	A			0.5	3.46	0.11	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	~1	0.00	0.00	A			~1	0.00	0.00	A		
<b>Ultimate Configuration - S2 Background Growth</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	2.96	0.00	A	2.18	A	~1	0.00	0.00	A	1.51	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	0.5	1.71	0.08	A			0.5	1.82	0.18	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	0.5	1.97	0.06	A			0.5	2.00	0.09	A		
2 - Granite Dr & H101 EB - 2 - Granite Drive	0.5	1.98	0.06	A	2.72	A	0.5	2.00	0.10	A	2.75	A
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	3.39	0.11	A			0.5	3.65	0.15	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	~1	0.00	0.00	A			~1	0.00	0.00	A		
<b>Ultimate Configuration - S3 Development</b>												
1 - Granite Dr & H101 WB - 1 - WB Off-Ramp	0.5	6.23	0.15	A	4.03	A	1.1	6.46	0.27	A	4.65	A
1 - Granite Dr & H101 WB - 2 - Granite Drive	1.5	2.37	0.27	A			3.2	4.92	0.65	A		
1 - Granite Dr & H101 WB - 4 - Granite Drive	1.9	4.40	0.58	A			1.5	3.65	0.50	A		
2 - Granite Dr & H101 EB - 2 - Granite Drive	1.5	2.56	0.30	A	3.38	A	3.5	5.22	0.66	A	5.04	A
2 - Granite Dr & H101 EB - 3 - EB Off-Ramp	0.5	4.37	0.13	A			1.4	8.54	0.29	A		
2 - Granite Dr & H101 EB - 4 - Granite Drive	1.5	3.51	0.54	A			1.9	3.08	0.45	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

## File summary

### File Description

Title	
Location	
Site number	
Date	2021-04-22
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\fallaire
Description	

### Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

# Existing Configuration - S1 Existing, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	2.48	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	3.21	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	101	100.000
	2 - Granite Drive		✓	132	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	91	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data

**Demand (Veh/hr)**

1 - Granite Dr & H101 WB

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	100	0	1
	2 - Granite Drive	0	0	52	80
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	91	0	0

**Demand (Veh/hr)**

2 - Granite Dr & H101 EB

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	81	0	0	0
	3 - EB Off-Ramp	0	91	0	0
	4 - Granite Drive	0	0	0	0

**Vehicle Mix**

**Truck Percentages**

1 - Granite Dr & H101 WB

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**

2 - Granite Dr & H101 EB

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

**Results**

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	2.93	0.0	0.5	A
	2 - Granite Drive	0.06	1.68	0.1	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.08	3.15	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.07	3.15	0.1	0.5	A
	3 - EB Off-Ramp	0.08	3.27	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Existing Configuration - S1 Existing, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	1.74	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	3.33	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	106	100.000
	2 - Granite Drive		✓	318	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	122	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data



**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	106	0	0
	2 - Granite Drive	0	3	165	150
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	118	4	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	150	0	0	0
	3 - EB Off-Ramp	0	122	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	0.00	0.0	~1	A
	2 - Granite Drive	0.15	1.74	0.2	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.11	3.21	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.13	3.23	0.1	0.5	A
	3 - EB Off-Ramp	0.11	3.46	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Existing Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	2.52	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	3.30	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

## Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	126	100.000
	2 - Granite Drive		✓	165	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	114	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data

**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	125	0	1
	2 - Granite Drive	0	0	65	100
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	114	0	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	101	0	0	0
	3 - EB Off-Ramp	0	114	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	2.96	0.0	0.5	A
	2 - Granite Drive	0.08	1.71	0.1	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.10	3.22	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.09	3.21	0.1	0.5	A
	3 - EB Off-Ramp	0.11	3.39	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Existing Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	1.81	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	3.49	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

## Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	133	100.000
	2 - Granite Drive		✓	398	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	153	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data



**Demand (Veh/hr)**

1 - Granite Dr & H101 WB

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	133	0	0
	2 - Granite Drive	0	4	206	188
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	148	5	0

**Demand (Veh/hr)**

2 - Granite Dr & H101 EB

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	188	0	0	0
	3 - EB Off-Ramp	0	153	0	0
	4 - Granite Drive	0	0	0	0

**Vehicle Mix**

**Truck Percentages**

1 - Granite Dr & H101 WB

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**

2 - Granite Dr & H101 EB

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

**Results**

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	0.00	0.0	~1	A
	2 - Granite Drive	0.18	1.82	0.2	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.13	3.31	0.2	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.16	3.35	0.2	0.5	A
	3 - EB Off-Ramp	0.15	3.65	0.2	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Existing Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	18.90	C
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	4.13	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	216	100.000
	2 - Granite Drive		✓	512	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	291	100.000
	4 - Granite Drive		✓	1099	100.000

## Origin-Destination Data

**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	125	0	91
	2 - Granite Drive	0	0	82	430
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	851	208	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	101	0	0	420
	3 - EB Off-Ramp	0	114	0	177
	4 - Granite Drive	154	945	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.15	6.21	0.2	0.5	A
	2 - Granite Drive	0.27	2.37	0.4	1.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.91	29.92	8.9	49.0	D
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.46	5.27	0.9	1.9	A
	3 - EB Off-Ramp	0.13	4.37	0.2	0.5	A
	4 - Granite Drive	0.54	3.51	1.2	1.5	A



# Existing Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	8.17	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	47.15	E

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	4.25	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.517	1306
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.517	1306
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queuing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queuing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	319	100.000
	2 - Granite Drive		✓	1236	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	431	100.000
	4 - Granite Drive		✓	883	100.000

## Origin-Destination Data



**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	133	0	186
	2 - Granite Drive	0	4	222	1010
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	688	220	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	188	0	0	1008
	3 - EB Off-Ramp	0	153	0	278
	4 - Granite Drive	128	755	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.27	6.46	0.4	1.0	A
	2 - Granite Drive	0.65	4.92	1.8	3.2	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.78	13.18	3.5	16.0	B
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	1.03	93.91	36.0	100.6	F
	3 - EB Off-Ramp	0.27	8.04	0.4	1.1	A
	4 - Granite Drive	0.45	3.07	0.8	1.9	A



# Ultimate Configuration - S1 Existing, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	2.15	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	2.65	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.652	2046
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S1 Existing	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	101	100.000
	2 - Granite Drive		✓	132	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	91	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data

**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	100	0	1
	2 - Granite Drive	0	0	52	80
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	91	0	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	81	0	0	0
	3 - EB Off-Ramp	0	91	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	2.93	0.0	0.5	A
	2 - Granite Drive	0.06	1.68	0.1	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.05	1.95	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.05	1.95	0.0	0.5	A
	3 - EB Off-Ramp	0.08	3.27	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Ultimate Configuration - S1 Existing, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	1.46	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	2.64	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.652	2046
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S1 Existing	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	106	100.000
	2 - Granite Drive		✓	318	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	122	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data



**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	106	0	0
	2 - Granite Drive	0	3	165	150
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	118	4	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	150	0	0	0
	3 - EB Off-Ramp	0	122	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	0.00	0.0	~1	A
	2 - Granite Drive	0.15	1.74	0.2	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.07	1.96	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.08	1.95	0.1	0.5	A
	3 - EB Off-Ramp	0.11	3.46	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Ultimate Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	2.18	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	2.72	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

## Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.652	2046
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	126	100.000
	2 - Granite Drive		✓	165	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	114	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data

**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	125	0	1
	2 - Granite Drive	0	0	65	100
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	114	0	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	101	0	0	0
	3 - EB Off-Ramp	0	114	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	2.96	0.0	0.5	A
	2 - Granite Drive	0.08	1.71	0.1	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.06	1.97	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.06	1.98	0.1	0.5	A
	3 - EB Off-Ramp	0.11	3.39	0.1	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Ultimate Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	1.51	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	2.75	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

## Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.652	2046
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	133	100.000
	2 - Granite Drive		✓	398	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	153	100.000
	4 - Granite Drive		✓	0	100.000

## Origin-Destination Data



**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	133	0	0
	2 - Granite Drive	0	4	206	188
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	148	5	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	188	0	0	0
	3 - EB Off-Ramp	0	153	0	0
	4 - Granite Drive	0	0	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.00	0.00	0.0	~1	A
	2 - Granite Drive	0.18	1.82	0.2	0.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.09	2.00	0.1	0.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.10	2.00	0.1	0.5	A
	3 - EB Off-Ramp	0.15	3.65	0.2	0.5	A
	4 - Granite Drive	0.00	0.00	0.0	~1	A



# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	4.03	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	3.38	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
2 - Granite Dr & H101 EB	4 - Granite Drive	0.652	2046
	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	216	100.000
	2 - Granite Drive		✓	512	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	291	100.000
	4 - Granite Drive		✓	1099	100.000

## Origin-Destination Data

**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	125	0	91
	2 - Granite Drive	0	0	82	430
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	851	208	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	101	0	0	420
	3 - EB Off-Ramp	0	114	0	177
	4 - Granite Drive	154	945	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	9	2	2
	2 - Granite Drive	2	2	10	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	5	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	6	2	2	2
	3 - EB Off-Ramp	2	5	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.15	6.23	0.2	0.5	A
	2 - Granite Drive	0.27	2.37	0.4	1.5	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.58	4.40	1.4	1.9	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.30	2.56	0.4	1.5	A
	3 - EB Off-Ramp	0.13	4.37	0.2	0.5	A
	4 - Granite Drive	0.54	3.51	1.2	1.5	A



# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Granite Dr & H101 WB - 4 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Granite Dr & H101 EB - 2 - Granite Drive	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Dr & H101 WB	Standard Roundabout		1, 2, 3, 4	4.65	A
2	Granite Dr & H101 EB	Standard Roundabout		1, 2, 3, 4	5.04	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Granite Dr & H101 WB	1	WB Off-Ramp	
	2	Granite Drive	
	3	WB On-Ramp	
	4	Granite Drive	
2 - Granite Dr & H101 EB	1	EB On-Ramp	
	2	Granite Drive	
	3	EB Off-Ramp	
	4	Granite Drive	

### Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	2 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	
	3 - WB On-Ramp							✓
	4 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
2 - Granite Dr & H101 EB	1 - EB On-Ramp							✓
	2 - Granite Drive	4.00	8.00	25.0	30.0	55.0	30.0	
	3 - EB Off-Ramp	4.25	4.25	0.0	30.0	55.0	30.0	
	4 - Granite Drive	8.00	8.00	0.0	30.0	55.0	30.0	

### Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	✓	100
	2 - Granite Drive		
	3 - WB On-Ramp		
	4 - Granite Drive		
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive		
	3 - EB Off-Ramp	✓	100
	4 - Granite Drive		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.518	1309
	2 - Granite Drive	0.728	2464
	3 - WB On-Ramp		
	4 - Granite Drive	0.652	2046
2 - Granite Dr & H101 EB	1 - EB On-Ramp		
	2 - Granite Drive	0.652	2046
	3 - EB Off-Ramp	0.518	1309
	4 - Granite Drive	0.728	2464

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Granite Dr & H101 WB	4 - Granite Drive	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Granite Dr & H101 EB	2 - Granite Drive	1	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Granite Dr & H101 WB	1 - WB Off-Ramp		✓	319	100.000
	2 - Granite Drive		✓	1236	100.000
	3 - WB On-Ramp				
	4 - Granite Drive	✓			
2 - Granite Dr & H101 EB	1 - EB On-Ramp				
	2 - Granite Drive	✓			
	3 - EB Off-Ramp		✓	431	100.000
	4 - Granite Drive		✓	883	100.000

## Origin-Destination Data



**Demand (Veh/hr)**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	0	133	0	186
	2 - Granite Drive	0	4	222	1010
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	0	688	220	0

**Demand (Veh/hr)**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	188	0	0	1008
	3 - EB Off-Ramp	0	153	0	278
	4 - Granite Drive	128	755	0	0

## Vehicle Mix

**Truck Percentages**
**1 - Granite Dr & H101 WB**

		To			
		1 - WB Off-Ramp	2 - Granite Drive	3 - WB On-Ramp	4 - Granite Drive
From	1 - WB Off-Ramp	2	2	2	2
	2 - Granite Drive	2	2	2	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Granite Drive	2	4	2	2

**Truck Percentages**
**2 - Granite Dr & H101 EB**

		To			
		1 - EB On-Ramp	2 - Granite Drive	3 - EB Off-Ramp	4 - Granite Drive
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Granite Drive	2	2	2	2
	3 - EB Off-Ramp	2	4	2	2
	4 - Granite Drive	2	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Granite Dr & H101 WB	1 - WB Off-Ramp	0.27	6.46	0.4	1.1	A
	2 - Granite Drive	0.65	4.92	1.8	3.2	A
	3 - WB On-Ramp					
	4 - Granite Drive	0.50	3.65	1.0	1.5	A
2 - Granite Dr & H101 EB	1 - EB On-Ramp					
	2 - Granite Drive	0.66	5.22	1.9	3.5	A
	3 - EB Off-Ramp	0.29	8.54	0.4	1.4	A
	4 - Granite Drive	0.45	3.08	0.8	1.9	A



Junctions 9
ARCADY 9 - Roundabout Module
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**Filename:** 212004 Commercial Street & New Minas Connector.j9  
**Path:** C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady\S2 Improvements  
**Report generation date:** 2021-12-22 4:14:37 PM

- »Ultimate Configuration - S2 Background Growth, AM
- »Ultimate Configuration - S2 Background Growth, PM
- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
<b>Ultimate Configuration - S2 Background Growth</b>												
1 - Commercial Street (East Leg)	1.4	2.92	0.26	A	2.84	A	2.7	3.42	0.40	A	3.46	A
2 - Cornwallis River Crossing (North Leg)	1.8	2.84	0.32	A			2.8	3.28	0.37	A		
3 - Commercial Street (West Leg)	0.9	2.84	0.21	A			2.8	3.91	0.39	A		
4 - New Minas Connector Road (South Leg)	1.7	2.77	0.30	A			1.5	3.03	0.28	A		
<b>Ultimate Configuration - S3 Development</b>												
1 - Commercial Street (East Leg)	2.6	4.26	0.36	A	4.67	A	1.5	5.53	0.56	A	5.59	A
2 - Cornwallis River Crossing (North Leg)	2.9	4.01	0.43	A			1.8	6.26	0.61	A		
3 - Commercial Street (West Leg)	1.2	3.07	0.22	A			2.9	5.33	0.46	A		
4 - New Minas Connector Road (South Leg)	3.6	6.01	0.68	A			1.7	5.37	0.59	A		

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.*

**File summary**

**File Description**

<b>Title</b>	
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	2021-04-20
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Analyst</b>	HFX01\fallaire
<b>Description</b>	

### Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

# Ultimate Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & New Minas Connector Road	Standard Roundabout		1, 2, 3, 4	2.84	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Commercial Street (East Leg)	
2	Cornwallis River Crossing (North Leg)	
3	Commercial Street (West Leg)	
4	New Minas Connector Road (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Commercial Street (East Leg)	4.00	8.00	25.0	30.0	60.0	30.0	
2 - Cornwallis River Crossing (North Leg)	7.00	8.00	15.0	30.0	60.0	30.0	
3 - Commercial Street (West Leg)	4.00	8.00	25.0	30.0	60.0	30.0	
4 - New Minas Connector Road (South Leg)	7.00	8.00	15.0	30.0	60.0	30.0	

### Bypass

Leg	Leg has bypass	Bypass utilisation (%)
1 - Commercial Street (East Leg)	✓	100
2 - Cornwallis River Crossing (North Leg)		
3 - Commercial Street (West Leg)	✓	100
4 - New Minas Connector Road (South Leg)		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Commercial Street (East Leg)	0.621	2046
2 - Cornwallis River Crossing (North Leg)	0.684	2409
3 - Commercial Street (West Leg)	0.621	2046
4 - New Minas Connector Road (South Leg)	0.684	2409

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	590	100.000
2 - Cornwallis River Crossing (North Leg)		✓	530	100.000
3 - Commercial Street (West Leg)		✓	390	100.000
4 - New Minas Connector Road (South Leg)		✓	517	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To			
	1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
1 - Commercial Street (East Leg)	0	203	308	79
2 - Cornwallis River Crossing (North Leg)	350	0	60	120
3 - Commercial Street (West Leg)	284	18	0	88
4 - New Minas Connector Road (South Leg)	88	169	260	0

## Vehicle Mix

### Truck Percentages

From	To			
	1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
1 - Commercial Street (East Leg)	2	3	2	14
2 - Cornwallis River Crossing (North Leg)	2	2	2	6
3 - Commercial Street (West Leg)	3	7	2	3
4 - New Minas Connector Road (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.26	2.92	0.3	1.4	A
2 - Cornwallis River Crossing (North Leg)	0.32	2.84	0.5	1.8	A
3 - Commercial Street (West Leg)	0.21	2.84	0.3	0.9	A
4 - New Minas Connector Road (South Leg)	0.30	2.77	0.4	1.7	A



# Ultimate Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & New Minas Connector Road	Standard Roundabout		1, 2, 3, 4	3.46	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	1155	100.000
2 - Cornwallis River Crossing (North Leg)		✓	595	100.000
3 - Commercial Street (West Leg)		✓	733	100.000
4 - New Minas Connector Road (South Leg)		✓	412	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
From	1 - Commercial Street (East Leg)	0	513	471	171
	2 - Cornwallis River Crossing (North Leg)	371	0	34	190
	3 - Commercial Street (West Leg)	480	48	0	205
	4 - New Minas Connector Road (South Leg)	108	151	153	0

## Vehicle Mix



### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
	1 - Commercial Street (East Leg)	2	2	2	2
	2 - Cornwallis River Crossing (North Leg)	2	2	2	4
	3 - Commercial Street (West Leg)	2	2	2	2
	4 - New Minas Connector Road (South Leg)	4	8	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.40	3.42	0.7	2.7	A
2 - Cornwallis River Crossing (North Leg)	0.37	3.28	0.6	2.8	A
3 - Commercial Street (West Leg)	0.39	3.91	0.6	2.8	A
4 - New Minas Connector Road (South Leg)	0.28	3.03	0.4	1.5	A

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & New Minas Connector Road	Standard Roundabout		1, 2, 3, 4	4.67	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	628	100.000
2 - Cornwallis River Crossing (North Leg)		✓	626	100.000
3 - Commercial Street (West Leg)		✓	538	100.000
4 - New Minas Connector Road (South Leg)		✓	1153	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
From	1 - Commercial Street (East Leg)	0	203	308	117
	2 - Cornwallis River Crossing (North Leg)	350	0	60	216
	3 - Commercial Street (West Leg)	284	18	0	236
	4 - New Minas Connector Road (South Leg)	220	371	562	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
	1 - Commercial Street (East Leg)	2	3	2	14
	2 - Cornwallis River Crossing (North Leg)	2	2	2	6
	3 - Commercial Street (West Leg)	3	7	2	3
	4 - New Minas Connector Road (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.36	4.26	0.6	2.6	A
2 - Cornwallis River Crossing (North Leg)	0.43	4.01	0.8	2.9	A
3 - Commercial Street (West Leg)	0.22	3.07	0.3	1.2	A
4 - New Minas Connector Road (South Leg)	0.68	6.01	2.1	3.6	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & New Minas Connector Road	Standard Roundabout		1, 2, 3, 4	5.59	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	1279	100.000
2 - Cornwallis River Crossing (North Leg)		✓	826	100.000
3 - Commercial Street (West Leg)		✓	1076	100.000
4 - New Minas Connector Road (South Leg)		✓	885	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
From	1 - Commercial Street (East Leg)	0	513	471	295
	2 - Cornwallis River Crossing (North Leg)	371	0	34	421
	3 - Commercial Street (West Leg)	480	48	0	548
	4 - New Minas Connector Road (South Leg)	202	303	380	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - Cornwallis River Crossing (North Leg)	3 - Commercial Street (West Leg)	4 - New Minas Connector Road (South Leg)
	1 - Commercial Street (East Leg)	2	2	2	2
	2 - Cornwallis River Crossing (North Leg)	2	2	2	4
	3 - Commercial Street (West Leg)	2	2	2	2
	4 - New Minas Connector Road (South Leg)	4	8	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.56	5.53	1.3	1.5	A
2 - Cornwallis River Crossing (North Leg)	0.61	6.26	1.6	1.8	A
3 - Commercial Street (West Leg)	0.46	5.33	0.9	2.9	A
4 - New Minas Connector Road (South Leg)	0.59	5.37	1.4	1.7	A



<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** 212004 New Minas Connector & Highway 101.j9  
**Path:** C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady\S2 Improvements  
**Report generation date:** 2021-12-22 4:16:47 PM

- »Ultimate Configuration - S2 Background Growth, AM
- »Ultimate Configuration - S2 Background Growth, PM
- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
<b>Ultimate Configuration - S2 Background Growth</b>												
1 - Connector/Prospect - 1 - Prospect Rd	0.5	2.61	0.16	A	2.42	A	1.4	2.87	0.29	A	2.73	A
1 - Connector/Prospect - 2 - Connector Rd	0.5	1.89	0.14	A			1.6	2.48	0.30	A		
1 - Connector/Prospect - 3 - Prospect Rd	0.5	4.15	0.10	A			0.5	5.28	0.16	A		
1 - Connector/Prospect - 4 - Connector Rd	2.0	2.33	0.32	A			2.2	2.41	0.33	A		
2 - Connector/H101 WB - 1 - WB Off-Ramp	0.5	3.56	0.01	A	2.25	A	0.5	3.66	0.03	A	2.25	A
2 - Connector/H101 WB - 2 - Connector Rd	0.5	1.75	0.10	A			1.1	1.94	0.22	A		
2 - Connector/H101 WB - 4 - Connector Rd	1.0	1.94	0.22	A			0.5	1.88	0.20	A		
3 - Connector/H101 EB - 2 - Connector Rd	0.5	1.71	0.10	A	2.21	A	1.2	1.94	0.23	A	2.34	A
3 - Connector/H101 EB - 3 - EB Off-Ramp	0.5	2.34	0.16	A			1.2	2.87	0.22	A		
3 - Connector/H101 EB - 4 - Connector Rd	0.5	2.53	0.15	A			0.5	2.53	0.11	A		
<b>Ultimate Configuration - S3 Development</b>												
1 - Connector/Prospect - 1 - Prospect Rd	1.4	3.96	0.25	A	4.16	A	2.8	4.43	0.43	A	5.22	A
1 - Connector/Prospect - 2 - Connector Rd	1.3	2.32	0.29	A			4.2	5.93	0.70	A		
1 - Connector/Prospect - 3 - Prospect Rd	0.5	5.14	0.12	A			2.0	14.74	0.35	B		
1 - Connector/Prospect - 4 - Connector Rd	4.3	4.88	0.68	A			2.2	3.95	0.60	A		
2 - Connector/H101 WB - 1 - WB Off-Ramp	0.5	6.59	0.10	A	3.57	A	0.5	5.78	0.16	A	3.93	A
2 - Connector/H101 WB - 2 - Connector Rd	1.4	2.22	0.26	A			2.7	4.15	0.62	A		
2 - Connector/H101 WB - 4 - Connector Rd	1.8	3.51	0.57	A			2.0	2.67	0.44	A		
3 - Connector/H101 EB - 2 - Connector Rd	1.5	2.09	0.27	A	5.17	A	3.2	4.09	0.64	A	4.61	A
3 - Connector/H101 EB - 3 - EB Off-Ramp	1.0	2.89	0.21	A			3.3	6.12	0.43	A		
3 - Connector/H101 EB - 4 - Connector Rd	4.2	7.57	0.71	A			1.6	4.76	0.51	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

## File summary

### File Description

Title	
Location	
Site number	
Date	2021-04-22
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\fallaire
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

## Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	35.01	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

## Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	Ultimate Configuration	100.000

# Ultimate Configuration - S2 Background Growth, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Connector/Prospect - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	3 - Connector/H101 EB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Connector/Prospect	Standard Roundabout		1, 2, 3, 4	2.42	A
2	Connector/H101 WB	Standard Roundabout		1, 2, 3, 4	2.25	A
3	Connector/H101 EB	Standard Roundabout		1, 2, 3, 4	2.21	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Intersection	Leg	Name	Description
1 - Connector/Prospect	1	Prospect Rd	
	2	Connector Rd	
	3	Prospect Rd	
	4	Connector Rd	
2 - Connector/H101 WB	1	WB Off-Ramp	
	2	Connector Rd	
	3	WB On-Ramp	
	4	Connector Rd	
3 - Connector/H101 EB	1	EB On-Ramp	
	2	Connector Rd	
	3	EB Off-Ramp	
	4	Connector Rd	



## Roundabout Geometry

Intersection	Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Connector/Prospect	1 - Prospect Rd	4.25	8.00	25.0	30.0	60.0	30.0	
	2 - Connector Rd	8.00	8.00	0.0	30.0	60.0	30.0	
	3 - Prospect Rd	4.00	4.25	25.0	30.0	60.0	30.0	
	4 - Connector Rd	8.00	8.00	0.0	30.0	60.0	30.0	
2 - Connector/H101 WB	1 - WB Off-Ramp	4.25	4.25	0.0	30.0	60.0	30.0	
	2 - Connector Rd	8.00	8.00	0.0	30.0	60.0	30.0	
	3 - WB On-Ramp							✓
	4 - Connector Rd	8.00	8.00	0.0	30.0	60.0	30.0	
3 - Connector/H101 EB	1 - EB On-Ramp							✓
	2 - Connector Rd	8.00	8.00	0.0	30.0	60.0	30.0	
	3 - EB Off-Ramp	4.00	8.00	25.0	30.0	60.0	30.0	
	4 - Connector Rd	4.00	8.00	25.0	30.0	60.0	30.0	

## Bypass

Intersection	Leg	Leg has bypass	Bypass utilisation (%)
1 - Connector/Prospect	1 - Prospect Rd		
	2 - Connector Rd		
	3 - Prospect Rd		
	4 - Connector Rd		
2 - Connector/H101 WB	1 - WB Off-Ramp	✓	100
	2 - Connector Rd	✓	100
	3 - WB On-Ramp		
	4 - Connector Rd		
3 - Connector/H101 EB	1 - EB On-Ramp		
	2 - Connector Rd		
	3 - EB Off-Ramp		
	4 - Connector Rd		

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Intersection	Leg	Final slope	Final intercept (PCE/hr)
1 - Connector/Prospect	1 - Prospect Rd	0.629	2089
	2 - Connector Rd	0.694	2464
	3 - Prospect Rd	0.493	1306
	4 - Connector Rd	0.694	2464
2 - Connector/H101 WB	1 - WB Off-Ramp	0.494	1309
	2 - Connector Rd	0.694	2464
	3 - WB On-Ramp		
	4 - Connector Rd	0.694	2464
3 - Connector/H101 EB	1 - EB On-Ramp		
	2 - Connector Rd	0.694	2464
	3 - EB Off-Ramp	0.621	2046
	4 - Connector Rd	0.621	2046

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	S2 Background Growth	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Connector/Prospect	4 - Connector Rd	2	2	Simple (vertical queueing)	Normal	0	100.00	
2 - Connector/H101 WB	2 - Connector Rd	1	4	Simple (vertical queueing)	Normal	0	100.00	
	4 - Connector Rd	3	2	Simple (vertical queueing)	Normal	0	100.00	
3 - Connector/H101 EB	2 - Connector Rd	2	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Connector/Prospect	1 - Prospect Rd		✓	236	100.000
	2 - Connector Rd		✓	287	100.000
	3 - Prospect Rd		✓	88	100.000
	4 - Connector Rd	✓			
2 - Connector/H101 WB	1 - WB Off-Ramp		✓	266	100.000
	2 - Connector Rd	✓			
	3 - WB On-Ramp				
	4 - Connector Rd	✓			
3 - Connector/H101 EB	1 - EB On-Ramp				
	2 - Connector Rd	✓			
	3 - EB Off-Ramp		✓	274	100.000
	4 - Connector Rd		✓	236	100.000

## Origin-Destination Data

### Demand (Veh/hr)

#### 1 - Connector/Prospect

		To			
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd
From	1 - Prospect Rd	0	69	24	143
	2 - Connector Rd	46	0	26	215
	3 - Prospect Rd	44	21	0	23
	4 - Connector Rd	235	426	18	0

### Demand (Veh/hr)

#### 2 - Connector/H101 WB

		To			
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd
From	1 - WB Off-Ramp	0	256	0	10
	2 - Connector Rd	0	0	175	206
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Connector Rd	0	423	50	0

### Demand (Veh/hr)

#### 3 - Connector/H101 EB

		To			
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Connector Rd	158	0	0	58
	3 - EB Off-Ramp	0	256	0	18
	4 - Connector Rd	19	217	0	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd
1 - Connector/Prospect	From				
	1 - Prospect Rd	2	11	5	6
	2 - Connector Rd	3	2	2	5
	3 - Prospect Rd	6	24	2	11
4 - Connector Rd	6	2	14	2	

### Truck Percentages

		To			
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd
2 - Connector/H101 WB	From				
	1 - WB Off-Ramp	2	2	2	2
	2 - Connector Rd	2	2	7	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
4 - Connector Rd	2	4	2	2	

### Truck Percentages

		To			
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd
3 - Connector/H101 EB	From				
	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Connector Rd	6	2	2	2
	3 - EB Off-Ramp	2	3	2	2
4 - Connector Rd	7	4	2	2	

## Results

### Results Summary for whole modelled period

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Connector/Prospect	1 - Prospect Rd	0.16	2.61	0.2	0.5	A
	2 - Connector Rd	0.14	1.89	0.2	0.5	A
	3 - Prospect Rd	0.10	4.15	0.1	0.5	A
	4 - Connector Rd	0.32	2.33	0.5	2.0	A
2 - Connector/H101 WB	1 - WB Off-Ramp	0.01	3.56	0.0	0.5	A
	2 - Connector Rd	0.10	1.75	0.1	0.5	A
	3 - WB On-Ramp					
	4 - Connector Rd	0.22	1.94	0.3	1.0	A
3 - Connector/H101 EB	1 - EB On-Ramp					
	2 - Connector Rd	0.10	1.71	0.1	0.5	A
	3 - EB Off-Ramp	0.16	2.34	0.2	0.5	A
	4 - Connector Rd	0.15	2.53	0.2	0.5	A

# Ultimate Configuration - S2 Background Growth, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Connector/Prospect - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	3 - Connector/H101 EB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Connector/Prospect	Standard Roundabout		1, 2, 3, 4	2.73	A
2	Connector/H101 WB	Standard Roundabout		1, 2, 3, 4	2.25	A
3	Connector/H101 EB	Standard Roundabout		1, 2, 3, 4	2.34	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	S2 Background Growth	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Connector/Prospect	4 - Connector Rd	2	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	1	4	Simple (vertical queueing)	Normal	0	100.00	
2 - Connector/H101 WB	4 - Connector Rd	3	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	2	4	Simple (vertical queueing)	Normal	0	100.00	
3 - Connector/H101 EB	2 - Connector Rd	2	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Connector/Prospect	1 - Prospect Rd		✓	457	100.000
	2 - Connector Rd		✓	566	100.000
	3 - Prospect Rd		✓	117	100.000
	4 - Connector Rd	✓			
2 - Connector/H101 WB	1 - WB Off-Ramp		✓	290	100.000
	2 - Connector Rd	✓			
	3 - WB On-Ramp				
	4 - Connector Rd	✓			
3 - Connector/H101 EB	1 - EB On-Ramp				
	2 - Connector Rd	✓			
	3 - EB Off-Ramp		✓	329	100.000
	4 - Connector Rd		✓	152	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	0	78	54	325
		2 - Connector Rd	88	0	29	449
		3 - Prospect Rd	55	16	0	46
		4 - Connector Rd	308	318	53	0

### Demand (Veh/hr)

		To				
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd	
2 - Connector/H101 WB	From					
		1 - WB Off-Ramp	0	264	0	26
		2 - Connector Rd	0	0	338	482
		3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		4 - Connector Rd	0	415	19	0

### Demand (Veh/hr)

		To				
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd	
3 - Connector/H101 EB	From					
		1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		2 - Connector Rd	294	0	0	214
		3 - EB Off-Ramp	0	293	0	36
		4 - Connector Rd	11	141	0	0

## Vehicle Mix

### Truck Percentages

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	2	5	2	3
		2 - Connector Rd	4	2	2	2
		3 - Prospect Rd	2	2	2	2
		4 - Connector Rd	6	3	2	2

**Truck Percentages**
**2 - Connector/H101 WB**

		To			
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd
From	1 - WB Off-Ramp	2	5	2	5
	2 - Connector Rd	2	2	4	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Connector Rd	2	3	2	2

**Truck Percentages**
**3 - Connector/H101 EB**

		To			
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Connector Rd	2	2	2	2
	3 - EB Off-Ramp	2	5	2	3
	4 - Connector Rd	11	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Connector/Prospect	1 - Prospect Rd	0.29	2.87	0.4	1.4	A
	2 - Connector Rd	0.30	2.48	0.4	1.6	A
	3 - Prospect Rd	0.16	5.28	0.2	0.5	A
	4 - Connector Rd	0.33	2.41	0.5	2.2	A
2 - Connector/H101 WB	1 - WB Off-Ramp	0.03	3.66	0.0	0.5	A
	2 - Connector Rd	0.22	1.94	0.3	1.1	A
	3 - WB On-Ramp					
	4 - Connector Rd	0.20	1.88	0.3	0.5	A
3 - Connector/H101 EB	1 - EB On-Ramp					
	2 - Connector Rd	0.23	1.94	0.3	1.2	A
	3 - EB Off-Ramp	0.22	2.87	0.3	1.2	A
	4 - Connector Rd	0.11	2.53	0.1	0.5	A

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Connector/Prospect - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	3 - Connector/H101 EB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Connector/Prospect	Standard Roundabout		1, 2, 3, 4	4.16	A
2	Connector/H101 WB	Standard Roundabout		1, 2, 3, 4	3.57	A
3	Connector/H101 EB	Standard Roundabout		1, 2, 3, 4	5.17	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Connector/Prospect	4 - Connector Rd	2	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	1	4	Simple (vertical queueing)	Normal	0	100.00	
2 - Connector/H101 WB	4 - Connector Rd	3	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	2	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Connector/Prospect	1 - Prospect Rd		✓	279	100.000
	2 - Connector Rd		✓	569	100.000
	3 - Prospect Rd		✓	88	100.000
	4 - Connector Rd	✓			
2 - Connector/H101 WB	1 - WB Off-Ramp		✓	354	100.000
	2 - Connector Rd	✓			
	3 - WB On-Ramp				
	4 - Connector Rd	✓			
3 - Connector/H101 EB	1 - EB On-Ramp				
	2 - Connector Rd	✓			
	3 - EB Off-Ramp		✓	305	100.000
	4 - Connector Rd		✓	1046	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	0	69	24	186
		2 - Connector Rd	46	0	26	497
		3 - Prospect Rd	44	21	0	23
		4 - Connector Rd	334	1062	18	0

#### Demand (Veh/hr)

		To				
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd	
2 - Connector/H101 WB	From					
		1 - WB Off-Ramp	0	300	0	54
		2 - Connector Rd	0	0	175	531
		3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		4 - Connector Rd	0	1114	111	0

#### Demand (Veh/hr)

		To				
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd	
3 - Connector/H101 EB	From					
		1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		2 - Connector Rd	232	0	0	353
		3 - EB Off-Ramp	0	256	0	49
		4 - Connector Rd	77	969	0	0

### Vehicle Mix

#### Truck Percentages

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	2	11	5	6
		2 - Connector Rd	3	2	2	5
		3 - Prospect Rd	6	24	2	11
		4 - Connector Rd	6	2	14	2



**Truck Percentages**

**2 - Connector/H101 WB**

		To			
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd
From	1 - WB Off-Ramp	2	2	2	2
	2 - Connector Rd	2	2	7	6
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Connector Rd	2	4	2	2

**Truck Percentages**

**3 - Connector/H101 EB**

		To			
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Connector Rd	6	2	2	2
	3 - EB Off-Ramp	2	3	2	2
	4 - Connector Rd	7	4	2	2

**Results**

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Connector/Prospect	1 - Prospect Rd	0.25	3.96	0.3	1.4	A
	2 - Connector Rd	0.29	2.32	0.4	1.3	A
	3 - Prospect Rd	0.12	5.14	0.1	0.5	A
	4 - Connector Rd	0.68	4.88	2.1	4.3	A
2 - Connector/H101 WB	1 - WB Off-Ramp	0.10	6.59	0.1	0.5	A
	2 - Connector Rd	0.26	2.22	0.4	1.4	A
	3 - WB On-Ramp					
	4 - Connector Rd	0.57	3.51	1.3	1.8	A
3 - Connector/H101 EB	1 - EB On-Ramp					
	2 - Connector Rd	0.27	2.09	0.4	1.5	A
	3 - EB Off-Ramp	0.21	2.89	0.3	1.0	A
	4 - Connector Rd	0.71	7.57	2.4	4.2	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	1 - Connector/Prospect - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Connector/H101 WB - 4 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	3 - Connector/H101 EB - 2 - Connector Rd	If the distance between linked intersections is small, results should be treated with caution. The linked intersections will be modelled as separate intersections, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Connector/Prospect	Standard Roundabout		1, 2, 3, 4	5.22	A
2	Connector/H101 WB	Standard Roundabout		1, 2, 3, 4	3.93	A
3	Connector/H101 EB	Standard Roundabout		1, 2, 3, 4	4.61	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Linked Leg Data

Intersection	Leg	Feeding Intersection	Feeding Leg	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCE)
1 - Connector/Prospect	4 - Connector Rd	2	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	1	4	Simple (vertical queueing)	Normal	0	100.00	
2 - Connector/H101 WB	4 - Connector Rd	3	2	Simple (vertical queueing)	Normal	0	100.00	
	2 - Connector Rd	2	4	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Intersection	Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Connector/Prospect	1 - Prospect Rd		✓	563	100.000
	2 - Connector Rd		✓	1264	100.000
	3 - Prospect Rd		✓	117	100.000
	4 - Connector Rd	✓			
2 - Connector/H101 WB	1 - WB Off-Ramp		✓	446	100.000
	2 - Connector Rd	✓			
	3 - WB On-Ramp				
	4 - Connector Rd	✓			
3 - Connector/H101 EB	1 - EB On-Ramp				
	2 - Connector Rd	✓			
	3 - EB Off-Ramp		✓	399	100.000
	4 - Connector Rd		✓	708	100.000

### Origin-Destination Data

#### Demand (Veh/hr)

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	0	78	54	431
		2 - Connector Rd	88	0	29	1147
		3 - Prospect Rd	55	16	0	46
		4 - Connector Rd	377	791	53	0

#### Demand (Veh/hr)

		To				
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd	
2 - Connector/H101 WB	From					
		1 - WB Off-Ramp	0	338	0	108
		2 - Connector Rd	0	0	338	1286
		3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		4 - Connector Rd	0	883	65	0

#### Demand (Veh/hr)

		To				
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd	
3 - Connector/H101 EB	From					
		1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
		2 - Connector Rd	372	0	0	1022
		3 - EB Off-Ramp	0	293	0	106
		4 - Connector Rd	53	655	0	0

### Vehicle Mix

#### Truck Percentages

		To				
		1 - Prospect Rd	2 - Connector Rd	3 - Prospect Rd	4 - Connector Rd	
1 - Connector/Prospect	From					
		1 - Prospect Rd	2	5	2	3
		2 - Connector Rd	4	2	2	2
		3 - Prospect Rd	2	2	2	2
		4 - Connector Rd	6	3	2	2

**Truck Percentages**

**2 - Connector/H101 WB**

		To			
		1 - WB Off-Ramp	2 - Connector Rd	3 - WB On-Ramp	4 - Connector Rd
From	1 - WB Off-Ramp	2	5	2	5
	2 - Connector Rd	2	2	4	2
	3 - WB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Connector Rd	2	3	2	2

**Truck Percentages**

**3 - Connector/H101 EB**

		To			
		1 - EB On-Ramp	2 - Connector Rd	3 - EB Off-Ramp	4 - Connector Rd
From	1 - EB On-Ramp	Exit-only	Exit-only	Exit-only	Exit-only
	2 - Connector Rd	2	2	2	2
	3 - EB Off-Ramp	2	5	2	3
	4 - Connector Rd	11	2	2	2

## Results

**Results Summary for whole modelled period**

Intersection	Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Connector/Prospect	1 - Prospect Rd	0.43	4.43	0.8	2.8	A
	2 - Connector Rd	0.70	5.93	2.3	4.2	A
	3 - Prospect Rd	0.35	14.74	0.5	2.0	B
	4 - Connector Rd	0.60	3.95	1.5	2.2	A
2 - Connector/H101 WB	1 - WB Off-Ramp	0.16	5.78	0.2	0.5	A
	2 - Connector Rd	0.62	4.15	1.6	2.7	A
	3 - WB On-Ramp					
	4 - Connector Rd	0.44	2.67	0.8	2.0	A
3 - Connector/H101 EB	1 - EB On-Ramp					
	2 - Connector Rd	0.64	4.09	1.7	3.2	A
	3 - EB Off-Ramp	0.43	6.12	0.7	3.3	A
	4 - Connector Rd	0.51	4.76	1.0	1.6	A



Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** 212004 Granite Drive & Commercial Entrance.j9  
**Path:** C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady  
**Report generation date:** 2021-12-20 1:50:46 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Ultimate Configuration - S3 Development												
1 - Residential (East Leg)	0.5	6.22	0.03	A	3.11	A	0.5	5.04	0.04	A	4.64	A
2 - Granite Drive (North Leg)	1.3	2.19	0.29	A			2.6	3.96	0.61	A		
3 - Commercial (West Leg)	1.7	4.73	0.30	A			3.5	10.52	0.55	B		
4 - Granite Drive (South Leg)	1.6	3.15	0.47	A			1.9	2.50	0.32	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\Fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S3 Development	AM	ONE HOUR	00:00	01:30	15
D2	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Commercial	Standard Roundabout		1, 2, 3, 4	3.11	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Residential (East Leg)	
2	Granite Drive (North Leg)	
3	Commercial (West Leg)	
4	Granite Drive (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Residential (East Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
2 - Granite Drive (North Leg)	7.00	8.00	15.0	30.0	55.0	30.0	
3 - Commercial (West Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
4 - Granite Drive (South Leg)	7.00	8.00	15.0	30.0	55.0	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Residential (East Leg)	0.512	1277
2 - Granite Drive (North Leg)	0.718	2409
3 - Commercial (West Leg)	0.512	1277
4 - Granite Drive (South Leg)	0.718	2409

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Residential (East Leg)		✓	15	100.000
2 - Granite Drive (North Leg)		✓	597	100.000
3 - Commercial (West Leg)		✓	291	100.000
4 - Granite Drive (South Leg)		✓	909	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Residential (East Leg)	2 - Granite Drive (North Leg)	3 - Commercial (West Leg)	4 - Granite Drive (South Leg)
From	1 - Residential (East Leg)	0	5	5	5
	2 - Granite Drive (North Leg)	9	0	300	288
	3 - Commercial (West Leg)	5	261	0	25
	4 - Granite Drive (South Leg)	5	836	68	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Residential (East Leg)	2 - Granite Drive (North Leg)	3 - Commercial (West Leg)	4 - Granite Drive (South Leg)
From	1 - Residential (East Leg)	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2
	3 - Commercial (West Leg)	2	2	2	2
	4 - Granite Drive (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Residential (East Leg)	0.03	6.22	0.0	0.5	A
2 - Granite Drive (North Leg)	0.29	2.19	0.4	1.3	A
3 - Commercial (West Leg)	0.30	4.73	0.4	1.7	A
4 - Granite Drive (South Leg)	0.47	3.15	0.9	1.6	A



# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Commercial	Standard Roundabout		1, 2, 3, 4	4.64	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Residential (East Leg)		✓	26	100.000
2 - Granite Drive (North Leg)		✓	1286	100.000
3 - Commercial (West Leg)		✓	374	100.000
4 - Granite Drive (South Leg)		✓	621	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Residential (East Leg)	2 - Granite Drive (North Leg)	3 - Commercial (West Leg)	4 - Granite Drive (South Leg)
From	1 - Residential (East Leg)	0	16	5	5
	2 - Granite Drive (North Leg)	10	0	407	869
	3 - Commercial (West Leg)	5	288	0	81
	4 - Granite Drive (South Leg)	5	579	37	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Residential (East Leg)	2 - Granite Drive (North Leg)	3 - Commercial (West Leg)	4 - Granite Drive (South Leg)
	1 - Residential (East Leg)	2	2	2	2
	2 - Granite Drive (North Leg)	2	2	2	2
	3 - Commercial (West Leg)	2	2	2	2
	4 - Granite Drive (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Residential (East Leg)	0.04	5.04	0.0	0.5	A
2 - Granite Drive (North Leg)	0.61	3.96	1.5	2.6	A
3 - Commercial (West Leg)	0.55	10.52	1.2	3.5	B
4 - Granite Drive (South Leg)	0.32	2.50	0.5	1.9	A

Junctions 9
ARCADY 9 - Roundabout Module
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Filename: 212004 Granite Drive & Collector Road.j9  
 Path: C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady  
 Report generation date: 2021-12-20 1:36:05 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Ultimate Configuration - S3 Development												
2 - Granite Drive (North Leg)	0.5	3.20	0.08	A	7.36	A	1.1	3.73	0.20	A	4.78	A
3 - Collector Road (West Leg)	4.9	9.47	0.68	A			1.7	6.63	0.52	A		
4 - Granite Drive (South Leg)	2.4	6.39	0.35	A			1.5	4.88	0.26	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\Fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S3 Development	AM	ONE HOUR	00:00	01:30	15
D2	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Collector Road	Standard Roundabout		2, 3, 4	7.36	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
2	Granite Drive (North Leg)	
3	Collector Road (West Leg)	
4	Granite Drive (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
2 - Granite Drive (North Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
3 - Collector Road (West Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
4 - Granite Drive (South Leg)	3.50	4.25	15.0	30.0	55.0	30.0	

### Bypass

Leg	Leg has bypass	Bypass utilisation (%)
2 - Granite Drive (North Leg)	✓	100
3 - Collector Road (West Leg)		
4 - Granite Drive (South Leg)		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
2 - Granite Drive (North Leg)	0.512	1277
3 - Collector Road (West Leg)	0.512	1277
4 - Granite Drive (South Leg)	0.512	1277

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2 - Granite Drive (North Leg)		✓	314	100.000
3 - Collector Road (West Leg)		✓	748	100.000
4 - Granite Drive (South Leg)		✓	272	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		2 - Granite Drive (North Leg)	3 - Collector Road (West Leg)	4 - Granite Drive (South Leg)
From	2 - Granite Drive (North Leg)	0	228	86
	3 - Collector Road (West Leg)	690	0	58
	4 - Granite Drive (South Leg)	215	57	0

## Vehicle Mix

### Truck Percentages

		To		
		2 - Granite Drive (North Leg)	3 - Collector Road (West Leg)	4 - Granite Drive (South Leg)
From	2 - Granite Drive (North Leg)	2	2	2
	3 - Collector Road (West Leg)	2	2	2
	4 - Granite Drive (South Leg)	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
2 - Granite Drive (North Leg)	0.08	3.20	0.1	0.5	A
3 - Collector Road (West Leg)	0.68	9.47	2.1	4.9	A
4 - Granite Drive (South Leg)	0.35	6.39	0.5	2.4	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Granite Drive & Collector Road	Standard Roundabout		2, 3, 4	4.78	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2 - Granite Drive (North Leg)		✓	951	100.000
3 - Collector Road (West Leg)		✓	529	100.000
4 - Granite Drive (South Leg)		✓	232	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		2 - Granite Drive (North Leg)	3 - Collector Road (West Leg)	4 - Granite Drive (South Leg)
From	2 - Granite Drive (North Leg)	0	727	224
	3 - Collector Road (West Leg)	458	0	71
	4 - Granite Drive (South Leg)	159	73	0

## Vehicle Mix

### Truck Percentages

		To		
		2 - Granite Drive (North Leg)	3 - Collector Road (West Leg)	4 - Granite Drive (South Leg)
From	2 - Granite Drive (North Leg)	2	2	2
	3 - Collector Road (West Leg)	2	2	2
	4 - Granite Drive (South Leg)	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
2 - Granite Drive (North Leg)	0.20	3.73	0.3	1.1	A
3 - Collector Road (West Leg)	0.52	6.63	1.1	1.7	A
4 - Granite Drive (South Leg)	0.26	4.88	0.3	1.5	A



Junctions 9
ARCADY 9 - Roundabout Module
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Filename: 212004 New Canaan Road & Collector Road.j9  
 Path: C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady  
 Report generation date: 2021-12-20 1:22:03 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Ultimate Configuration - S3 Development												
1 - Collector Road (East Leg)	0.5	3.45	0.07	A	3.28	A	0.5	3.27	0.04	A	3.88	A
2 - New Canaan Road (North Leg)	0.5	1.91	0.19	A			1.5	3.26	0.53	A		
4 - New Canaan Road (South Leg)	1.7	4.62	0.30	A			2.9	7.59	0.39	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\Fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	New Canaan Road & Collector Road	Standard Roundabout		1, 2, 4	3.28	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Collector Road (East Leg)	
2	New Canaan Road (North Leg)	
4	New Canaan Road (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Collector Road (East Leg)	3.50	4.25	25.0	30.0	55.0	30.0	
2 - New Canaan Road (North Leg)	7.00	8.00	25.0	30.0	55.0	30.0	
4 - New Canaan Road (South Leg)	3.50	4.25	15.0	30.0	55.0	30.0	

### Bypass

Leg	Leg has bypass	Bypass utilisation (%)
1 - Collector Road (East Leg)	✓	100
2 - New Canaan Road (North Leg)		
4 - New Canaan Road (South Leg)		

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Collector Road (East Leg)	0.514	1289
2 - New Canaan Road (North Leg)	0.721	2429
4 - New Canaan Road (South Leg)	0.512	1277

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Collector Road (East Leg)		✓	853	100.000
2 - New Canaan Road (North Leg)		✓	402	100.000
4 - New Canaan Road (South Leg)		✓	298	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		1 - Collector Road (East Leg)	2 - New Canaan Road (North Leg)	4 - New Canaan Road (South Leg)
From	1 - Collector Road (East Leg)	0	786	67
	2 - New Canaan Road (North Leg)	257	0	145
	4 - New Canaan Road (South Leg)	38	260	0

## Vehicle Mix

### Truck Percentages

		To		
		1 - Collector Road (East Leg)	2 - New Canaan Road (North Leg)	4 - New Canaan Road (South Leg)
From	1 - Collector Road (East Leg)	2	2	2
	2 - New Canaan Road (North Leg)	2	2	2
	4 - New Canaan Road (South Leg)	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Collector Road (East Leg)	0.07	3.45	0.1	0.5	A
2 - New Canaan Road (North Leg)	0.19	1.91	0.2	0.5	A
4 - New Canaan Road (South Leg)	0.30	4.62	0.4	1.7	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	New Canaan Road & Collector Road	Standard Roundabout		1, 2, 4	3.88	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Collector Road (East Leg)		✓	553	100.000
2 - New Canaan Road (North Leg)		✓	1128	100.000
4 - New Canaan Road (South Leg)		✓	276	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	1 - Collector Road (East Leg)	2 - New Canaan Road (North Leg)	4 - New Canaan Road (South Leg)
1 - Collector Road (East Leg)	0	508	45
2 - New Canaan Road (North Leg)	841	0	287
4 - New Canaan Road (South Leg)	76	200	0

## Vehicle Mix

### Truck Percentages

From	To		
	1 - Collector Road (East Leg)	2 - New Canaan Road (North Leg)	4 - New Canaan Road (South Leg)
1 - Collector Road (East Leg)	2	2	2
2 - New Canaan Road (North Leg)	2	2	2
4 - New Canaan Road (South Leg)	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Collector Road (East Leg)	0.04	3.27	0.0	0.5	A
2 - New Canaan Road (North Leg)	0.53	3.26	1.1	1.5	A
4 - New Canaan Road (South Leg)	0.39	7.59	0.6	2.9	A

Junctions 9
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**Filename:** 212004 Commercial Street & Silver Fox.j9  
**Path:** C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady\S3 Improvements  
**Report generation date:** 2021-12-22 4:22:18 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Ultimate Configuration - S3 Development												
<b>1 - Commercial Street (East Leg)</b>	1.9	3.86	0.45	A	3.36	A	2.9	6.54	0.65	A	5.40	A
<b>2 - Bonnavista Avenue (North Leg)</b>	0.5	4.77	0.06	A			0.5	6.25	0.05	A		
<b>3 - Commercial Street (West Leg)</b>	2.7	2.55	0.38	A			1.8	2.87	0.45	A		
<b>4 - Silver Fox Avenue (South Leg)</b>	0.5	5.28	0.15	A			3.1	8.79	0.50	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\Fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000



# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4	3.36	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Commercial Street (East Leg)	
2	Bonavista Avenue (North Leg)	
3	Commercial Street (West Leg)	
4	Silver Fox Avenue (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Commercial Street (East Leg)	3.50	8.00	15.0	30.0	55.0	30.0	
2 - Bonnavista Avenue (North Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
3 - Commercial Street (West Leg)	7.00	8.00	15.0	30.0	55.0	30.0	
4 - Silver Fox Avenue (South Leg)	3.50	4.25	15.0	30.0	55.0	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Commercial Street (East Leg)	0.604	1785
2 - Bonnavista Avenue (North Leg)	0.512	1277
3 - Commercial Street (West Leg)	0.718	2409
4 - Silver Fox Avenue (South Leg)	0.512	1277

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	697	100.000
2 - Bonnavista Avenue (North Leg)		✓	46	100.000
3 - Commercial Street (West Leg)		✓	781	100.000
4 - Silver Fox Avenue (South Leg)		✓	110	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Bonnavista Avenue (North Leg)	3 - Commercial Street (West Leg)	4 - Silver Fox Avenue (South Leg)
From	1 - Commercial Street (East Leg)	0	6	622	69
	2 - Bonnavista Avenue (North Leg)	6	0	30	10
	3 - Commercial Street (West Leg)	704	11	0	66
	4 - Silver Fox Avenue (South Leg)	66	6	38	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Bonnavista Avenue (North Leg)	3 - Commercial Street (West Leg)	4 - Silver Fox Avenue (South Leg)
From	1 - Commercial Street (East Leg)	2	25	2	7
	2 - Bonnavista Avenue (North Leg)	20	2	5	2
	3 - Commercial Street (West Leg)	3	2	2	2
	4 - Silver Fox Avenue (South Leg)	8	20	3	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.45	3.86	0.8	1.9	A
2 - Bonnavista Avenue (North Leg)	0.06	4.77	0.1	0.5	A
3 - Commercial Street (West Leg)	0.38	2.55	0.6	2.7	A
4 - Silver Fox Avenue (South Leg)	0.15	5.28	0.2	0.5	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Silver Fox Avenue	Standard Roundabout		1, 2, 3, 4	5.40	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	945	100.000
2 - Bonnavista Avenue (North Leg)		✓	27	100.000
3 - Commercial Street (West Leg)		✓	927	100.000
4 - Silver Fox Avenue (South Leg)		✓	370	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Bonnavista Avenue (North Leg)	3 - Commercial Street (West Leg)	4 - Silver Fox Avenue (South Leg)
From	1 - Commercial Street (East Leg)	0	9	838	98
	2 - Bonnavista Avenue (North Leg)	8	0	13	6
	3 - Commercial Street (West Leg)	744	20	0	163
	4 - Silver Fox Avenue (South Leg)	151	8	211	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Bonnavista Avenue (North Leg)	3 - Commercial Street (West Leg)	4 - Silver Fox Avenue (South Leg)
From	1 - Commercial Street (East Leg)	2	2	2	2
	2 - Bonnavista Avenue (North Leg)	2	2	2	2
	3 - Commercial Street (West Leg)	2	2	2	2
	4 - Silver Fox Avenue (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.65	6.54	1.9	2.9	A
2 - Bonnavista Avenue (North Leg)	0.05	6.25	0.1	0.5	A
3 - Commercial Street (West Leg)	0.45	2.87	0.8	1.8	A
4 - Silver Fox Avenue (South Leg)	0.50	8.79	1.0	3.1	A

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Filename: 212004 Commercial Street & Valley View Drive.j9  
 Path: C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady\S3 Improvements  
 Report generation date: 2021-12-22 4:23:31 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
Ultimate Configuration - S3 Development												
1 - Commercial Street (East Leg)	1.8	2.88	0.45	A	3.06	A	1.5	3.92	0.56	A	5.38	A
2 - New Road (North Leg)	0.5	6.17	0.13	A			1.4	10.06	0.25	B		
3 - Commercial Street (West Leg)	2.5	3.06	0.41	A			5.2	6.71	0.72	A		
4 - Valley View Drive (South Leg)	0.5	2.22	0.07	A			1.5	3.45	0.28	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - Commercial Street (West Leg) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Valley View Drive	Standard Roundabout		1, 2, 3, 4	3.06	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Commercial Street (East Leg)	
2	New Road (North Leg)	
3	Commercial Street (West Leg)	
4	Valley View Drive (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Commercial Street (East Leg)	7.00	8.00	15.0	30.0	55.0	30.0	
2 - New Road (North Leg)	3.50	4.25	15.0	30.0	55.0	30.0	
3 - Commercial Street (West Leg)	3.50	8.00	50.0	30.0	55.0	30.0	
4 - Valley View Drive (South Leg)	7.00	8.00	15.0	30.0	55.0	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Commercial Street (East Leg)	0.718	2409
2 - New Road (North Leg)	0.512	1277
3 - Commercial Street (West Leg)	0.671	2154
4 - Valley View Drive (South Leg)	0.718	2409

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	929	100.000
2 - New Road (North Leg)		✓	81	100.000
3 - Commercial Street (West Leg)		✓	757	100.000
4 - Valley View Drive (South Leg)		✓	116	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - New Road (North Leg)	3 - Commercial Street (West Leg)	4 - Valley View Drive (South Leg)
From	1 - Commercial Street (East Leg)	0	0	895	34
	2 - New Road (North Leg)	73	0	0	8
	3 - Commercial Street (West Leg)	682	11	0	64
	4 - Valley View Drive (South Leg)	11	6	99	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - New Road (North Leg)	3 - Commercial Street (West Leg)	4 - Valley View Drive (South Leg)
From	1 - Commercial Street (East Leg)	2	2	2	2
	2 - New Road (North Leg)	2	2	2	2
	3 - Commercial Street (West Leg)	3	2	2	2
	4 - Valley View Drive (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.45	2.88	0.8	1.8	A
2 - New Road (North Leg)	0.13	6.17	0.2	0.5	A
3 - Commercial Street (West Leg)	0.41	3.06	0.7	2.5	A
4 - Valley View Drive (South Leg)	0.07	2.22	0.1	0.5	A



# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - Commercial Street (West Leg) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Valley View Drive	Standard Roundabout		1, 2, 3, 4	5.38	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	1042	100.000
2 - New Road (North Leg)		✓	109	100.000
3 - Commercial Street (West Leg)		✓	1282	100.000
4 - Valley View Drive (South Leg)		✓	365	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - New Road (North Leg)	3 - Commercial Street (West Leg)	4 - Valley View Drive (South Leg)
From	1 - Commercial Street (East Leg)	0	0	929	113
	2 - New Road (North Leg)	85	0	0	24
	3 - Commercial Street (West Leg)	1051	25	0	206
	4 - Valley View Drive (South Leg)	16	18	331	0

## Vehicle Mix

### Truck Percentages

		To			
From		1 - Commercial Street (East Leg)	2 - New Road (North Leg)	3 - Commercial Street (West Leg)	4 - Valley View Drive (South Leg)
	1 - Commercial Street (East Leg)	2	2	2	2
	2 - New Road (North Leg)	2	2	2	2
	3 - Commercial Street (West Leg)	2	2	2	2
	4 - Valley View Drive (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.56	3.92	1.2	1.5	A
2 - New Road (North Leg)	0.25	10.06	0.3	1.4	B
3 - Commercial Street (West Leg)	0.72	6.71	2.6	5.2	A
4 - Valley View Drive (South Leg)	0.28	3.45	0.4	1.5	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** 212004 Commercial Street & Prospect Road.j9  
**Path:** C:\Users\fallaire\Desktop\212004 New Minas Transportation\02 Analysis\Arcady\S3 Improvements  
**Report generation date:** 2021-12-22 4:22:56 PM

- »Ultimate Configuration - S3 Development, AM
- »Ultimate Configuration - S3 Development, PM

**Summary of intersection performance**

	AM						PM					
	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
<b>Ultimate Configuration - S3 Development</b>												
1 - Commercial Street (East Leg)	1.5	4.62	0.53	A	5.23	A	10.8	9.12	0.77	A	8.29	A
2 - Commercial Driveway (North Leg)	0.5	5.76	0.14	A			1.3	8.81	0.23	A		
3 - Commercial Street (West Leg)	1.5	4.70	0.53	A			2.5	6.45	0.63	A		
4 - Prospect Road (South Leg)	3.2	8.05	0.43	A			3.6	10.09	0.50	B		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

**File summary**

**File Description**

Title	
Location	
Site number	
Date	2021-04-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	HFX01\Fallaire
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Ultimate Configuration	100.000

# Ultimate Configuration - S3 Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Prospect Road	Standard Roundabout		1, 2, 3, 4	5.23	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Legs

### Legs

Leg	Name	Description
1	Commercial Street (East Leg)	
2	Commercial Driveway (North Leg)	
3	Commercial Street (West Leg)	
4	Prospect Road (South Leg)	

### Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Commercial Street (East Leg)	3.50	8.00	15.0	30.0	50.0	30.0	
2 - Commercial Driveway (North Leg)	3.50	4.25	15.0	30.0	50.0	30.0	
3 - Commercial Street (West Leg)	3.50	8.00	15.0	30.0	50.0	30.0	
4 - Prospect Road (South Leg)	3.50	4.25	15.0	30.0	50.0	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1 - Commercial Street (East Leg)	0.629	1785
2 - Commercial Driveway (North Leg)	0.533	1277
3 - Commercial Street (West Leg)	0.629	1785
4 - Prospect Road (South Leg)	0.533	1277

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	S3 Development	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

## Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	812	100.000
2 - Commercial Driveway (North Leg)		✓	90	100.000
3 - Commercial Street (West Leg)		✓	770	100.000
4 - Prospect Road (South Leg)		✓	303	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Commercial Driveway (North Leg)	3 - Commercial Street (West Leg)	4 - Prospect Road (South Leg)
From	1 - Commercial Street (East Leg)	0	6	686	120
	2 - Commercial Driveway (North Leg)	41	0	19	30
	3 - Commercial Street (West Leg)	725	25	0	20
	4 - Prospect Road (South Leg)	220	19	64	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Commercial Driveway (North Leg)	3 - Commercial Street (West Leg)	4 - Prospect Road (South Leg)
From	1 - Commercial Street (East Leg)	2	2	2	2
	2 - Commercial Driveway (North Leg)	6	2	2	4
	3 - Commercial Street (West Leg)	2	6	2	2
	4 - Prospect Road (South Leg)	2	13	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.53	4.62	1.1	1.5	A
2 - Commercial Driveway (North Leg)	0.14	5.76	0.2	0.5	A
3 - Commercial Street (West Leg)	0.53	4.70	1.1	1.5	A
4 - Prospect Road (South Leg)	0.43	8.05	0.7	3.2	A

# Ultimate Configuration - S3 Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Intersection Network

### Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	Commercial Street & Prospect Road	Standard Roundabout		1, 2, 3, 4	8.29	A

### Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	S3 Development	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCE Factor for a Truck (PCE)
Truck Percentages	2.00

### Demand overview (Traffic)

Leg	Linked leg	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Commercial Street (East Leg)		✓	1173	100.000
2 - Commercial Driveway (North Leg)		✓	110	100.000
3 - Commercial Street (West Leg)		✓	879	100.000
4 - Prospect Road (South Leg)		✓	328	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Commercial Street (East Leg)	2 - Commercial Driveway (North Leg)	3 - Commercial Street (West Leg)	4 - Prospect Road (South Leg)
From	1 - Commercial Street (East Leg)	0	8	931	234
	2 - Commercial Driveway (North Leg)	56	0	21	33
	3 - Commercial Street (West Leg)	845	9	0	25
	4 - Prospect Road (South Leg)	244	24	60	0

## Vehicle Mix

### Truck Percentages

		To			
		1 - Commercial Street (East Leg)	2 - Commercial Driveway (North Leg)	3 - Commercial Street (West Leg)	4 - Prospect Road (South Leg)
From	1 - Commercial Street (East Leg)	2	2	2	2
	2 - Commercial Driveway (North Leg)	2	2	2	4
	3 - Commercial Street (West Leg)	2	2	2	2
	4 - Prospect Road (South Leg)	2	2	2	2

## Results

### Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
1 - Commercial Street (East Leg)	0.77	9.12	3.2	10.8	A
2 - Commercial Driveway (North Leg)	0.23	8.81	0.3	1.3	A
3 - Commercial Street (West Leg)	0.63	6.45	1.7	2.5	A
4 - Prospect Road (South Leg)	0.50	10.09	1.0	3.6	B





## **Appendix C: Traffic Signal Warrants**

---

## 2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	Commercial Street	Direction (EW or NS)	EW	Date:	Background Growth
Side Street (name)	Deep Hollow Road	Direction (EW or NS)	NS	City:	New Minas, NS
Quadrant (if appl)					

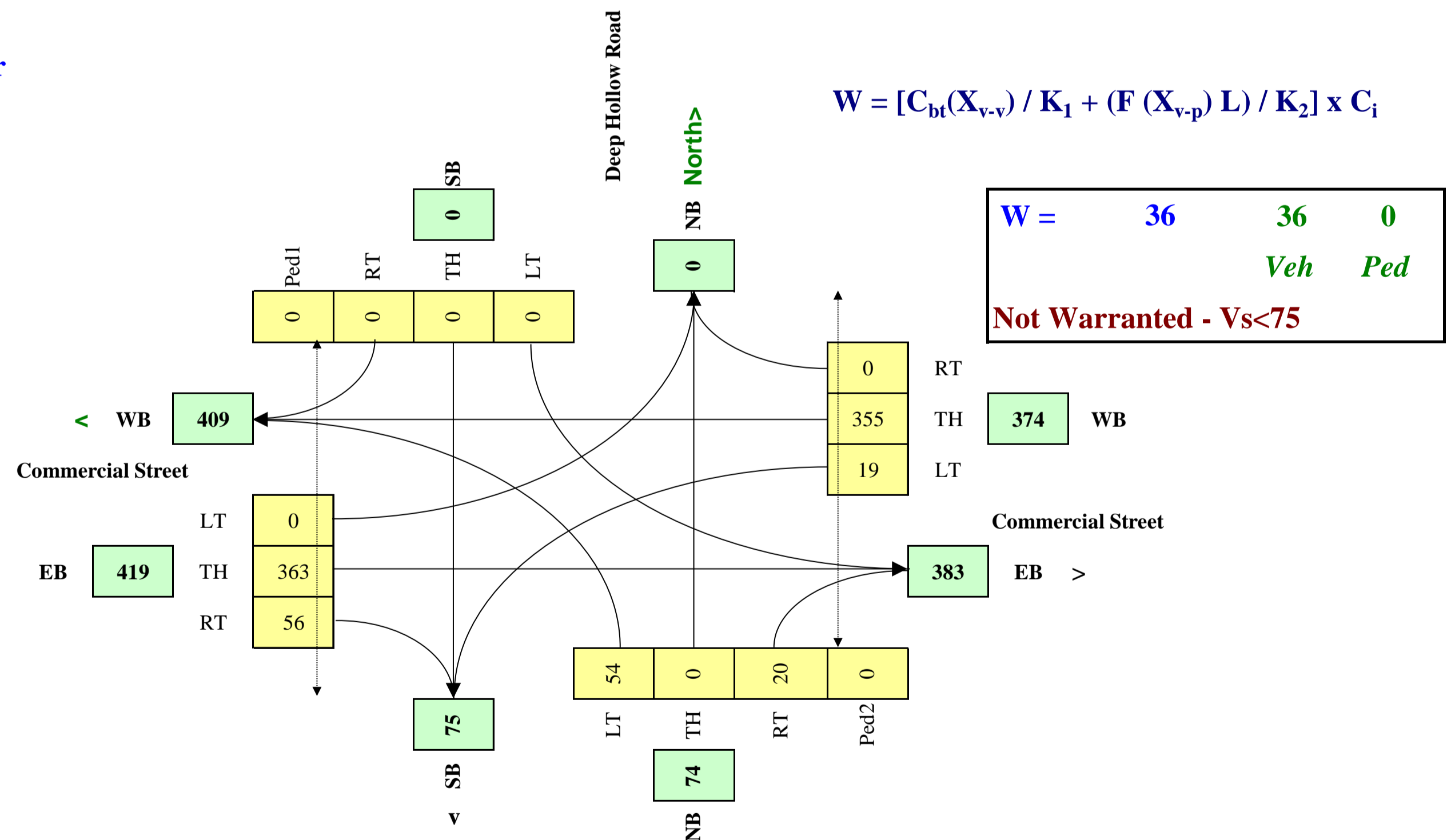
Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
Commercial Street	WB			1				1
Commercial Street	EB			1				1
Deep Hollow Road	NB			1				
Deep Hollow Road	SB							

Demographics		
Elementary School	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Trucks %	Bus Rt (y/n)	Median (m)
Commercial Street	EW	50	3.0%	y	
Deep Hollow Road	NS		3.0%	n	

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S side
7:00 - 8:00	57	0	25	0	0	0	4	228	0	0	182	33	0	1	0	1
8:00 - 9:00	67	0	25	0	0	0	19	282	0	0	285	34	0	0	0	0
11:00 - 12:00	49	0	13	0	0	0	14	407	0	0	358	59	0	0	0	0
12:00 - 13:00	47	0	18	0	0	0	15	498	0	0	450	49	0	0	0	1
16:00 - 17:00	64	0	28	0	0	0	35	404	0	0	500	83	0	0	0	0
17:00 - 18:00	39	0	10	0	0	0	24	313	0	0	403	78	0	0	0	0
<b>Total (6-hour peak)</b>	<b>323</b>	<b>0</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>2,132</b>	<b>0</b>	<b>0</b>	<b>2,178</b>	<b>336</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>Average (6-hour peak)</b>	<b>54</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>355</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Average 6-hour Peak Turning Movements



## 2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	Commercial Street	Direction (EW or NS)	EW	Date:	Background Growth
Side Street (name)	Jones Road	Direction (EW or NS)	NS	City:	New Minas, NS
Quadrant (if appl)					

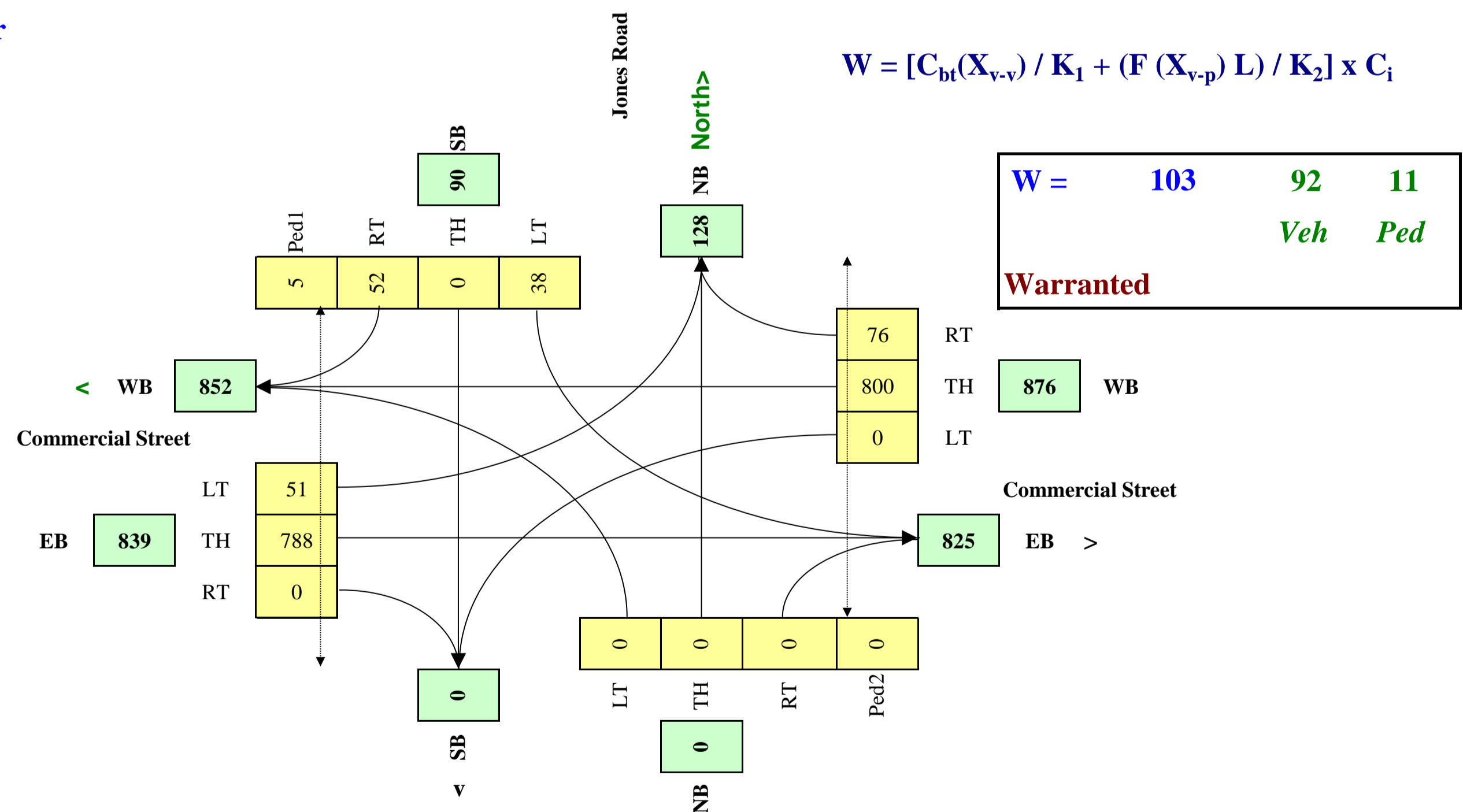
Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
Commercial Street	WB				1			1
Commercial Street	EB	1		1				1
Jones Road	NB							
Jones Road	SB			1				

Demographics		
Elementary School	(y/n)	y
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population	(#)	5000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Trucks %	Bus Rt (y/n)	Median (m)
Commercial Street	EW	50	2.0%	y	
Jones Road	NS		2.0%	n	

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S side
7:00 - 8:00	0	0	0	20	0	42	0	355	64	72	430	0	0	0	5	0
8:00 - 9:00	0	0	0	67	0	87	0	622	94	103	652	0	1	0	1	0
11:00 - 12:00	0	0	0	32	0	30	0	963	74	33	954	0	9	0	12	0
12:00 - 13:00	0	0	0	34	0	57	0	1030	85	43	962	0	7	0	4	0
16:00 - 17:00	0	0	0	40	0	43	0	918	80	25	915	0	7	0	0	0
17:00 - 18:00	0	0	0	32	0	55	0	910	60	32	813	0	3	0	6	0
<b>Total (6-hour peak)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>225</b>	<b>0</b>	<b>314</b>	<b>0</b>	<b>4,798</b>	<b>457</b>	<b>308</b>	<b>4,726</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>28</b>	<b>0</b>
<b>Average (6-hour peak)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>800</b>	<b>76</b>	<b>51</b>	<b>788</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>

### Average 6-hour Peak Turning Movements



## 2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	New Minas Connector	Direction (EW or NS)	NS	Date:	Background Growth
Side Street (name)	Highway 101 EB	Direction (EW or NS)	EW	City:	New Minas, NS
Quadrant (if appl)					

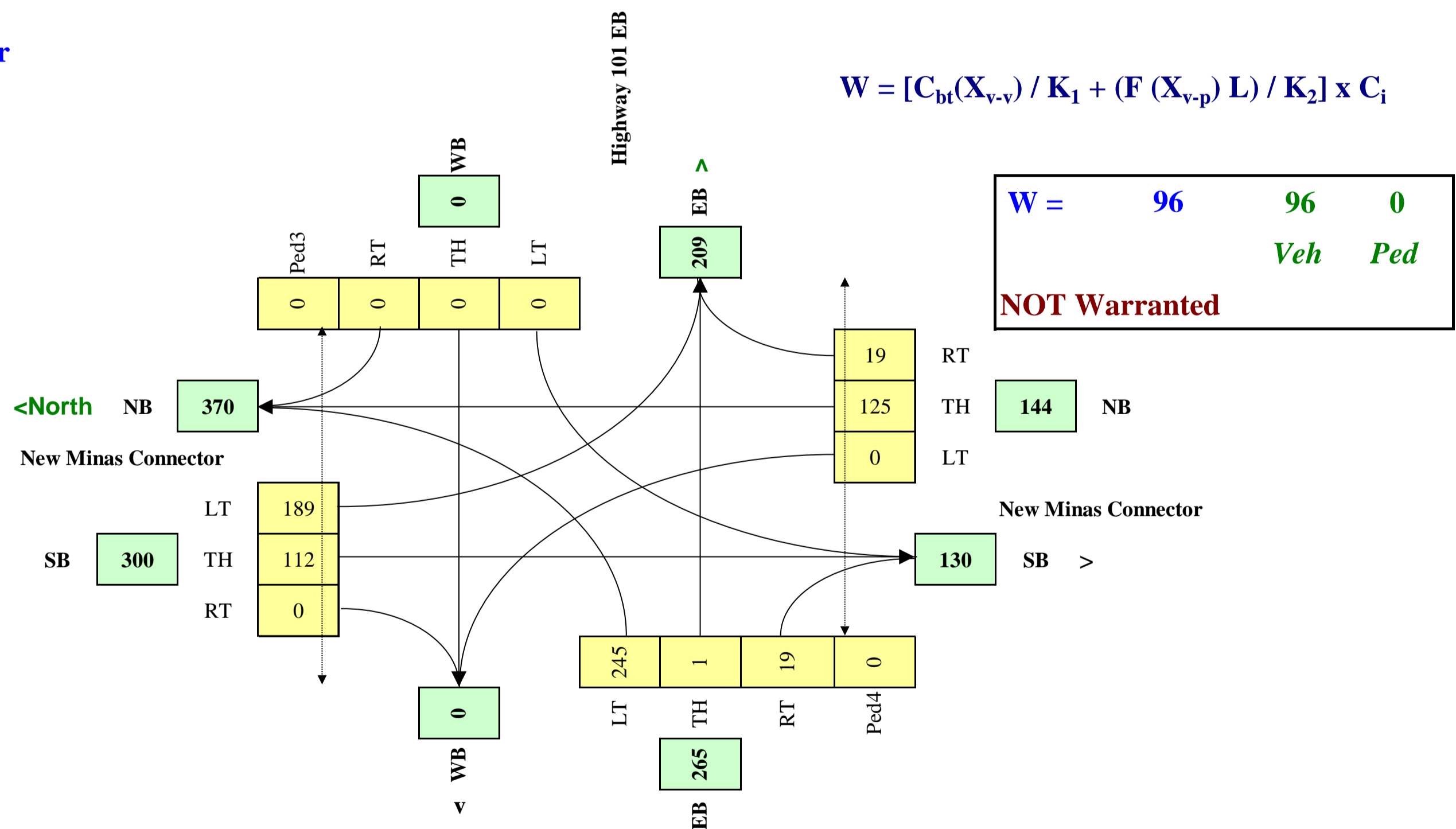
Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
New Minas Connector	NB				1			1
New Minas Connector	SB	1		1				1
Highway 101 EB	WB							
Highway 101 EB	EB			1				

Demographics		
Elementary School	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Trucks %	Bus Rt (y/n)	Median (m)
New Minas Connector	NS	80	4.0%	n	
Highway 101 EB	EW		4.0%	n	

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S side
7:00 - 8:00	0	178	19	118	48	0	0	0	0	233	0	17	0	0	0	0
8:00 - 9:00	0	153	25	170	64	0	0	0	0	235	0	13	0	0	0	0
11:00 - 12:00	0	94	20	155	88	0	0	0	0	264	4	8	0	0	0	0
12:00 - 13:00	0	89	19	210	107	0	0	0	0	228	2	19	0	0	0	0
16:00 - 17:00	0	135	14	275	194	0	0	0	0	277	0	33	0	0	0	0
17:00 - 18:00	0	103	17	204	168	0	0	0	0	230	2	22	0	0	0	0
<b>Total (6-hour peak)</b>	<b>0</b>	<b>752</b>	<b>114</b>	<b>1,132</b>	<b>669</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,467</b>	<b>8</b>	<b>112</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Average (6-hour peak)</b>	<b>0</b>	<b>125</b>	<b>19</b>	<b>189</b>	<b>112</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>245</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Average 6-hour Peak Turning Movements



## 2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	New Minas Connector	Direction (EW or NS)	NS	Date:	Background Growth
Side Street (name)	Highway 101 WB	Direction (EW or NS)	EW	City:	New Minas, NS
Quadrant (if appl)					

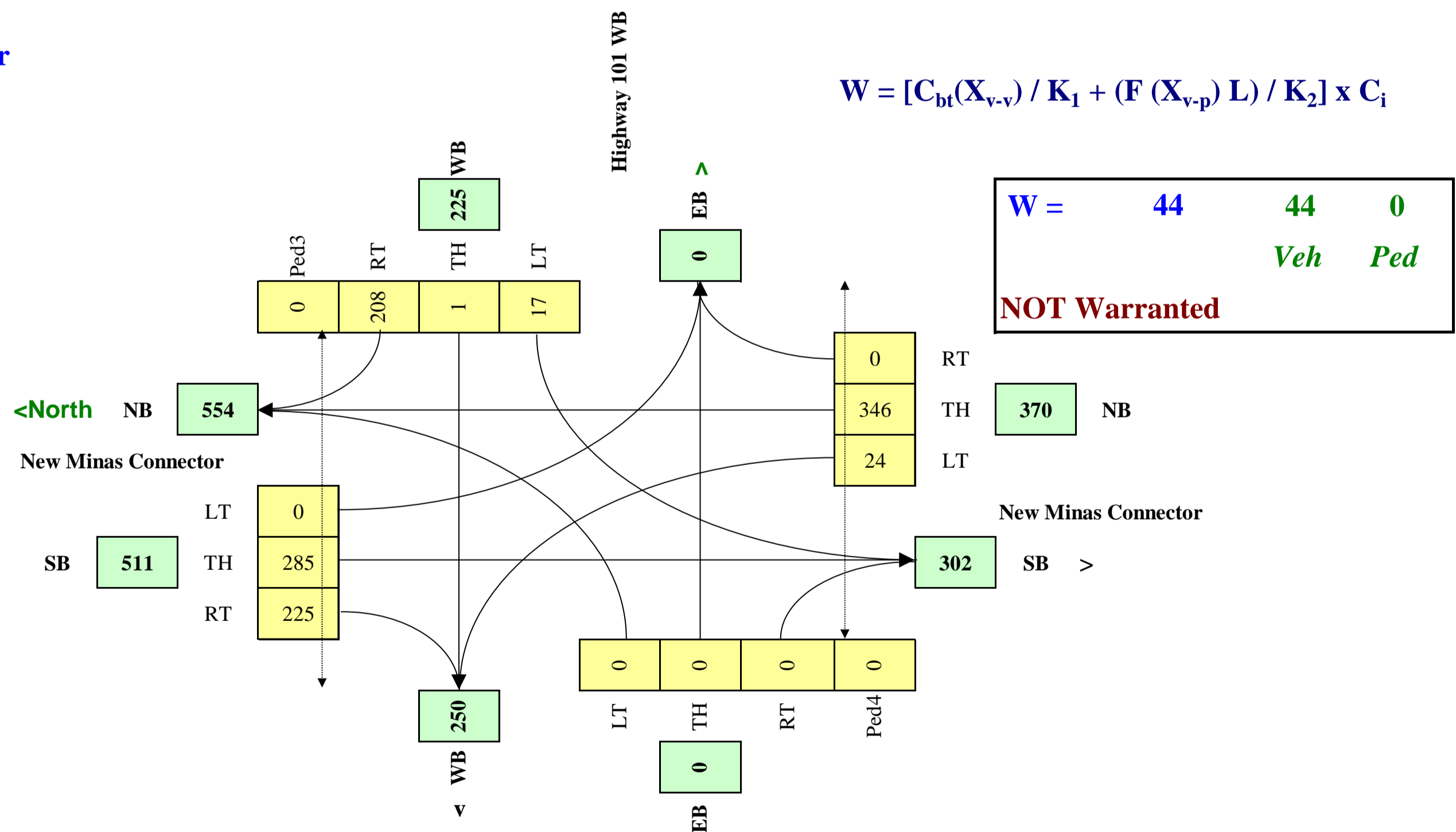
Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
New Minas Connector	NB	1		1				1
New Minas Connector	SB				1			1
Highway 101 WB	WB			1				
Highway 101 WB	EB							

Demographics		
Elementary School	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Trucks %	Bus Rt (y/n)	Median (m)
New Minas Connector	NS	80	4.0%	n	
Highway 101 WB	EW		4.0%	n	

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S side
7:00 - 8:00	50	357	0	0	153	158	14	0	214	0	0	0	0	0	0	0
8:00 - 9:00	24	363	0	0	220	149	14	2	238	0	0	0	0	0	0	0
11:00 - 12:00	14	344	0	0	238	223	10	0	154	0	0	0	0	0	0	0
12:00 - 13:00	14	308	0	0	304	227	13	2	199	0	0	0	0	0	0	0
16:00 - 17:00	25	385	0	0	448	323	24	0	234	0	0	0	0	0	0	0
17:00 - 18:00	19	318	0	0	349	272	24	0	208	0	0	0	0	0	0	0
<b>Total (6-hour peak)</b>	<b>146</b>	<b>2,075</b>	<b>0</b>	<b>0</b>	<b>1,712</b>	<b>1,352</b>	<b>99</b>	<b>4</b>	<b>1,247</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Average (6-hour peak)</b>	<b>24</b>	<b>346</b>	<b>0</b>	<b>0</b>	<b>285</b>	<b>225</b>	<b>17</b>	<b>1</b>	<b>208</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Average 6-hour Peak Turning Movements



## 2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	New Caanan Road	Direction (EW or NS)	NS	Date:	Background Growth
Side Street (name)	Highbury School Road	Direction (EW or NS)	EW	City:	New Minas, NS
Quadrant (if appl)					

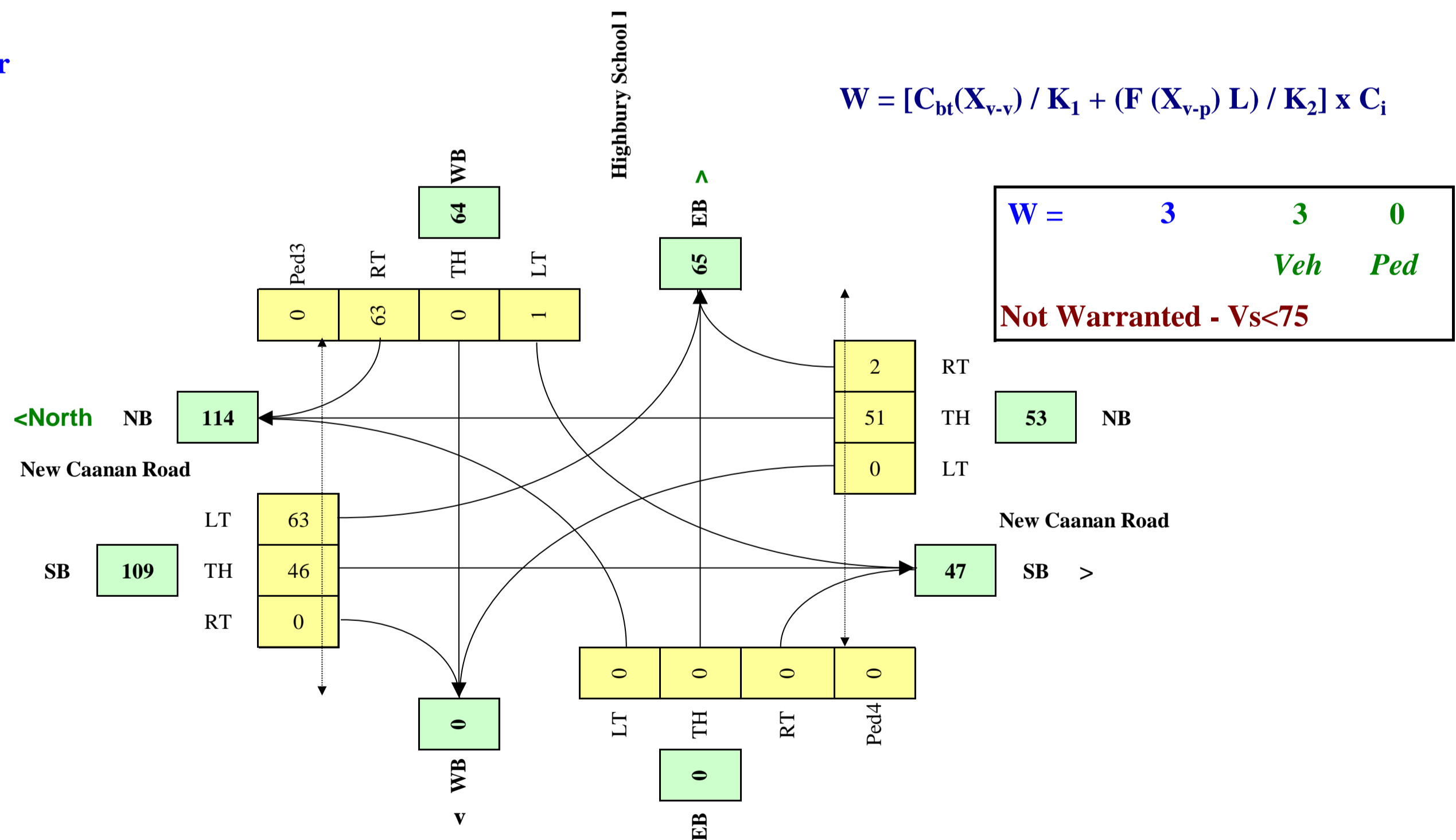
Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
New Caanan Road	NB				1			1
New Caanan Road	SB	1		1				1
Highbury School Road	WB			1				
Highbury School Road	EB							

Demographics		
Elementary School	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Trucks %	Bus Rt (y/n)	Median (m)
New Caanan Road	NS	80	4.0%	n	
Highbury School Road	EW		2.0%	n	

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S side
7:00 - 8:00	0	75	0	35	40	0	5	0	102	0	0	0	0	0	0	0
8:00 - 9:00	0	52	0	49	43	0	0	0	60	0	0	0	0	0	0	0
11:00 - 12:00	0	40	2	74	50	0	0	0	65	0	0	0	0	0	0	0
12:00 - 13:00	0	60	5	65	44	0	0	0	62	0	0	0	0	0	0	0
16:00 - 17:00	0	62	3	115	74	0	2	0	59	0	0	0	0	0	0	0
17:00 - 18:00	0	18	2	42	24	0	0	0	27	0	0	0	0	0	0	0
<b>Total (6-hour peak)</b>	<b>0</b>	<b>307</b>	<b>12</b>	<b>380</b>	<b>275</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>375</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Average (6-hour peak)</b>	<b>0</b>	<b>51</b>	<b>2</b>	<b>63</b>	<b>46</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Average 6-hour Peak Turning Movements

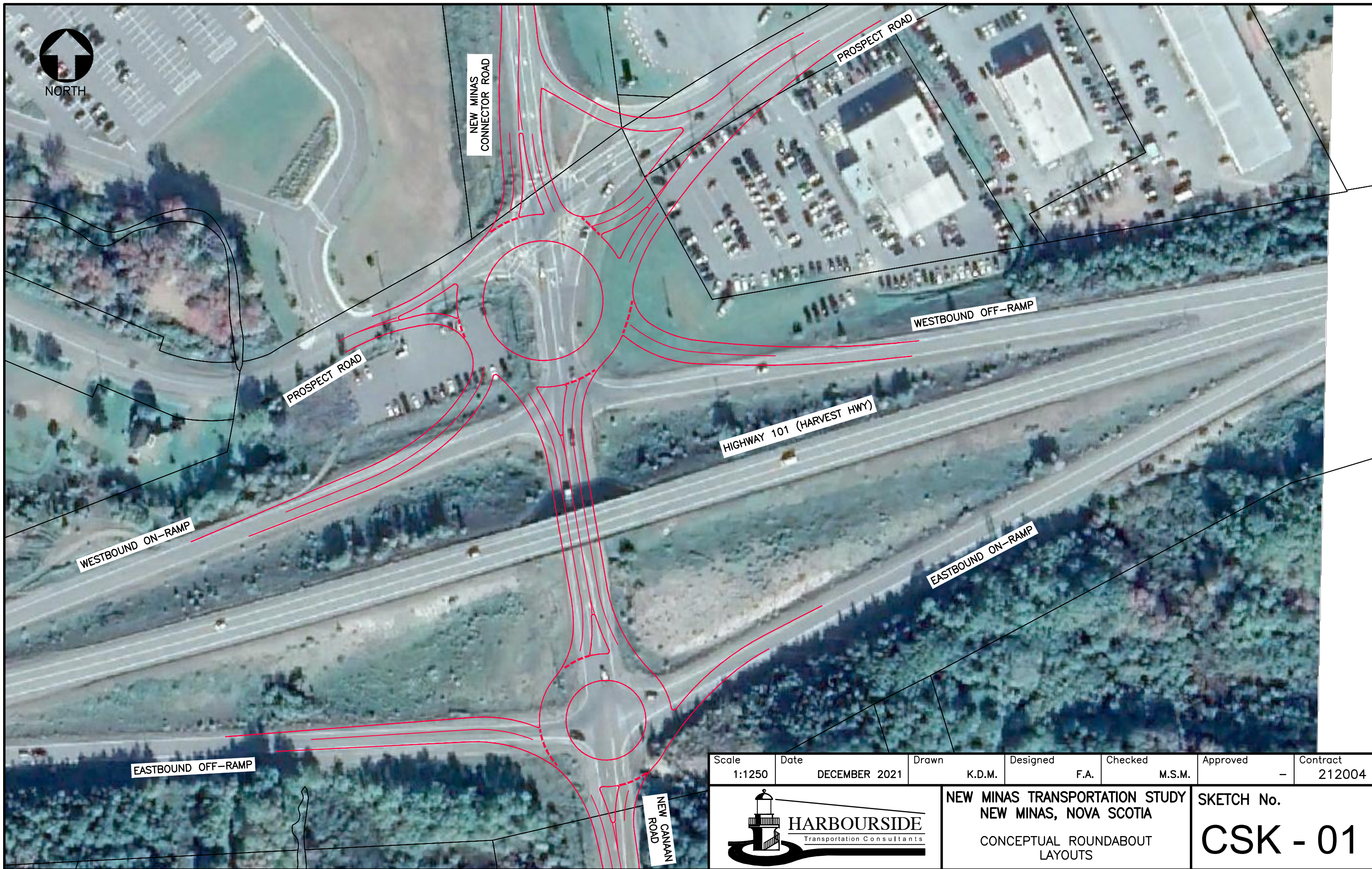




## Appendix D: Drawings

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Scale	Date	Drawn	Designed	Checked	Approved	Contract
1:1250	DECEMBER 2021	K.D.M.	F.A.	M.S.M.	-	212004



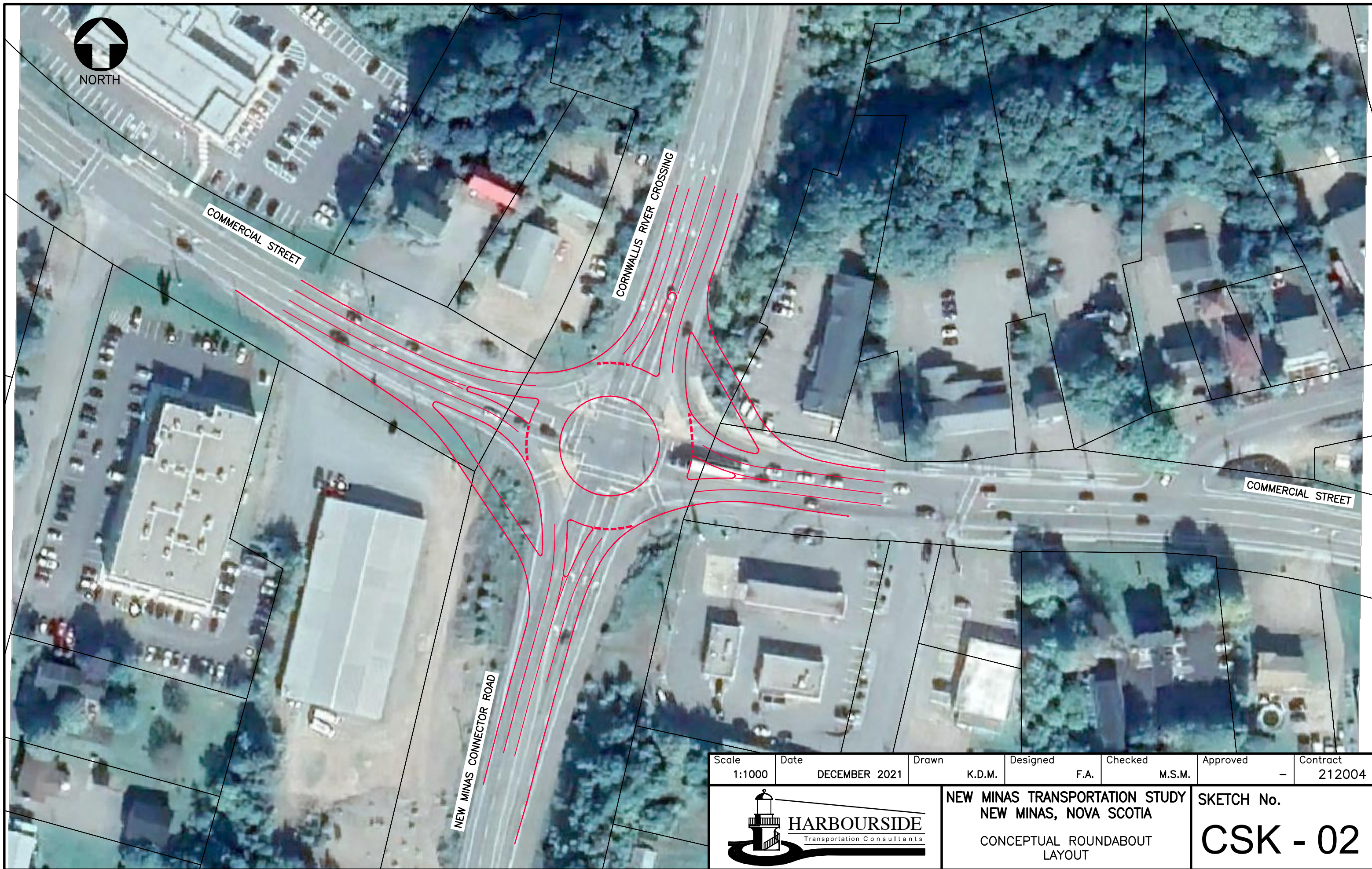
**NEW MINAS TRANSPORTATION STUDY**  
**NEW MINAS, NOVA SCOTIA**  
 CONCEPTUAL ROUNDABOUT  
 LAYOUTS

SKETCH No.  
**CSK - 01**





NORTH



COMMERCIAL STREET

CORNWALLIS RIVER CROSSING

COMMERCIAL STREET

NEW MINAS CONNECTOR ROAD

Scale	Date	Drawn	Designed	Checked	Approved	Contract
1:1000	DECEMBER 2021	K.D.M.	F.A.	M.S.M.	-	212004



**NEW MINAS TRANSPORTATION STUDY**  
**NEW MINAS, NOVA SCOTIA**  
 CONCEPTUAL ROUNDABOUT  
 LAYOUT

SKETCH No.  
**CSK - 02**