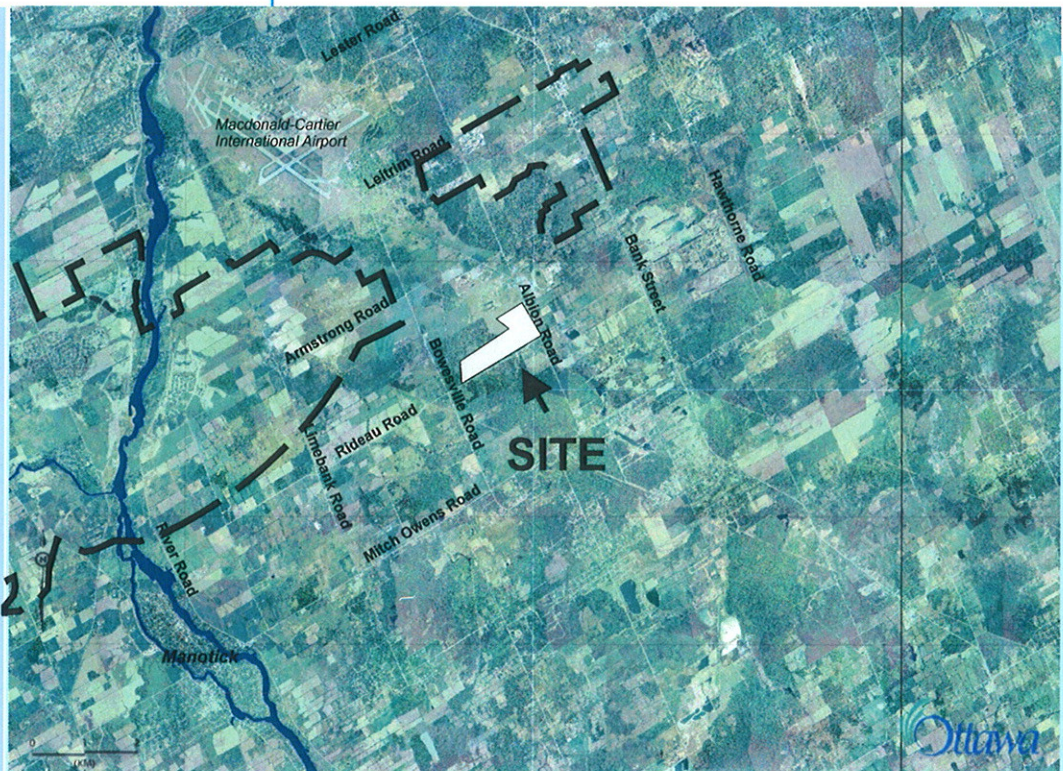


Central Canada Exhibition Relocation Traffic Impact Study Update #2



Prepared
for: Central Canada
Exhibition Association

By: **DELCAN**

July 2004

**Central Canada Exhibition
Relocation
Traffic Impact Study
Update #2**

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1.0 INTRODUCTION

The Central Canada Exhibition Association (CCEA) is examining the implications / requirements of relocating its year round activities from Lansdowne Park, located on Bank Street in Central Ottawa, to a more rural site located on lands in the northwest quadrant of the Albion Road / Rideau Road intersection. Analysis of the new site is required, as the City of Ottawa has requested that the CCE relocate due to a combination of the expired lease of the City-owned Lansdowne facilities and the growing incompatibility between the Exhibition and the desired future role of Lansdowne Park within its urban context.

In June of 2002, Delcan submitted a Traffic Impact Study (TIS) for the relocated CCE to the City. In response to comments received from City review staff and the public, modifications were made to the proposed site plan and traffic data was updated. The TIS Update was submitted in October 2002. With two years having passed since the submission of the TIS Update #1, and with substantial revisions to the proposed site plan, a second TIS Update is required to assist in obtaining development approval from the City.

This TIS Update #2 includes the following tasks:

- determines the current operation and level of service of nearby intersections;
- determines the historic traffic growth on study area roads based on the most recent data available;
- conducts generation, distribution and assignment of new vehicle trips to the existing road network based on the projected event attendance figures;
- determines the projected levels of service and volume to capacity rates for local area intersections;
- identifies any required roadway or intersection modifications due to the CCEA relocation;
- provides input into the site plan from a transportation perspective, including parking control and on-site pedestrian, transit and bicycle integration;
- determines the appropriate number and location of driveway accesses to / from Albion Road and Rideau Road; and
- estimates the traffic impact on surrounding / downstream communities.

2.0 ATTENDANCE PROJECTIONS

Over the planned 11 day exhibition schedule, CCEA expects approximately 100,000 paid visitors in it's currently scheduled (re)opening year of 2005. This attendance is projected to increase to approximately 150,000 by the fifth year of operation (2010). The total attendance projection translates to approximately 10,000 to 15,000 visitors per day on a weekday and 20,000 to 25,000 per day on weekends.

Initially, the site is proposed to have a bus and passenger drop-off area in front of the Phase 1 building off of Albion Road. In the longer term, if rapid transit is extended to the area, a station and park and ride lot could be accommodated on the subject, or immediately adjacent, lands. In a recent City study of assessing alternative rapid transit corridors to serve the Leitrim and Riverside South growth areas, alignments were identified that extended to the CCE site to serve the CCE and the Raceway / Slots facility. If the selected alignment is further to the north in the vicinity of Armstrong Road, the site could be connected by some form of shuttle bus service during the 11 day exhibition event, as well as during other major events.

With regard to vehicular access, the site's primary parking area is to be accessed directly from Albion Road via three separate driveways. Ultimately, access is also proposed to Rideau Road. A total of approximately 1,675 permanent on-site parking spaces are proposed to be provided initially to serve Building #1 (Exposition Centre) and the CCEA's administrative staff. 5,000 temporary parking spaces are to be provided on the Airport Authority lands located adjacent to the north of the site. Two northerly connections will serve the 5,000 temporary EX spaces, the southerly Albion Road connection will serve as the primary full-time access for year-round use. The Rideau Road access is a later stage solution to accommodate an expanded on-site parking lot. Further phases of development could require up to 2,500 additional full-time on-site spaces.

As noted, in addition to the CCE's traditional entertainment and cultural festivities, a number of complimentary uses are planned in the short and long-term. These uses are intended to provide an enhanced year-round function and revenue stream for the site.

For the purposes of transportation-related impacts and requirements, the following site phasing / development scenarios were identified and analysed.

Phase 1: Year 1, 2005

Projected conditions in the re-opening year, including:

- 58,030 ft² Expo Centre (Building #1) including approximately 4,865 ft² of permanent office / administrative uses;
- approximately 5,000 temporary parking spaces on the Airport property to the north;
- 1,675 permanent parking spaces (including 572 required for Expo Centre); and
- 100,000 paid CCE visitors.

Future Phases: Year 5, 2010

Phase 1 facilities in place, plus the following additions / modifications:

- 5,000 seat performance theatre (10,000 capacity);
- 40,000 ft² of trade show / convention centre space;
- 1,000 seat arena
- 27,000 ft² of agricultural centre;
- 2,468 permanent parking spaces (for a total of approximately 4,143 on site at all times); and
- 150,000 paid CCE visitors.

Note that in the long term, it is envisioned that the 5,000 temporary spaces on the lot leased from the Airport Authority will be moved to lands on the west side of the site, accessed via Rideau Road. Its access requirements will be determined if/when appropriate.

These proposed uses are analysed herein from a transportation perspective to highlight the longer-term vision for the site, beyond the typical 11 day duration of the CCE. It should be noted that the future orientation of the CCE's programming will be towards an "agricultural fair" as opposed to its traditional "urban" style. This will likely result in a greater rural attendance draw and will therefore affect traffic distribution onto area roads.

3.0 STUDY AREA AND ITS ROADS

The proposed CCE site is located in the northwest quadrant of the Albion / Rideau intersection. Opposite and slightly north of the site on the east side of Albion Road is the recently expanded Rideau-Carleton Raceway and Racetrack Slots (RCR). Figure 1 illustrates the area context of the proposed site.

Albion Road is a two-lane, north-south rural arterial which connects to numerous east-west rural arterials such as Lester Road, Leitrim Road, Rideau Road and Mitch Owens Road. On its northern section, north of Lester Road, Albion Road is designated as a collector street, has an urban cross-section and serves numerous residential streets in the Blossom Park and South Keys communities. It also connects to the Bank Street and Hunt Club Road urban arterials.

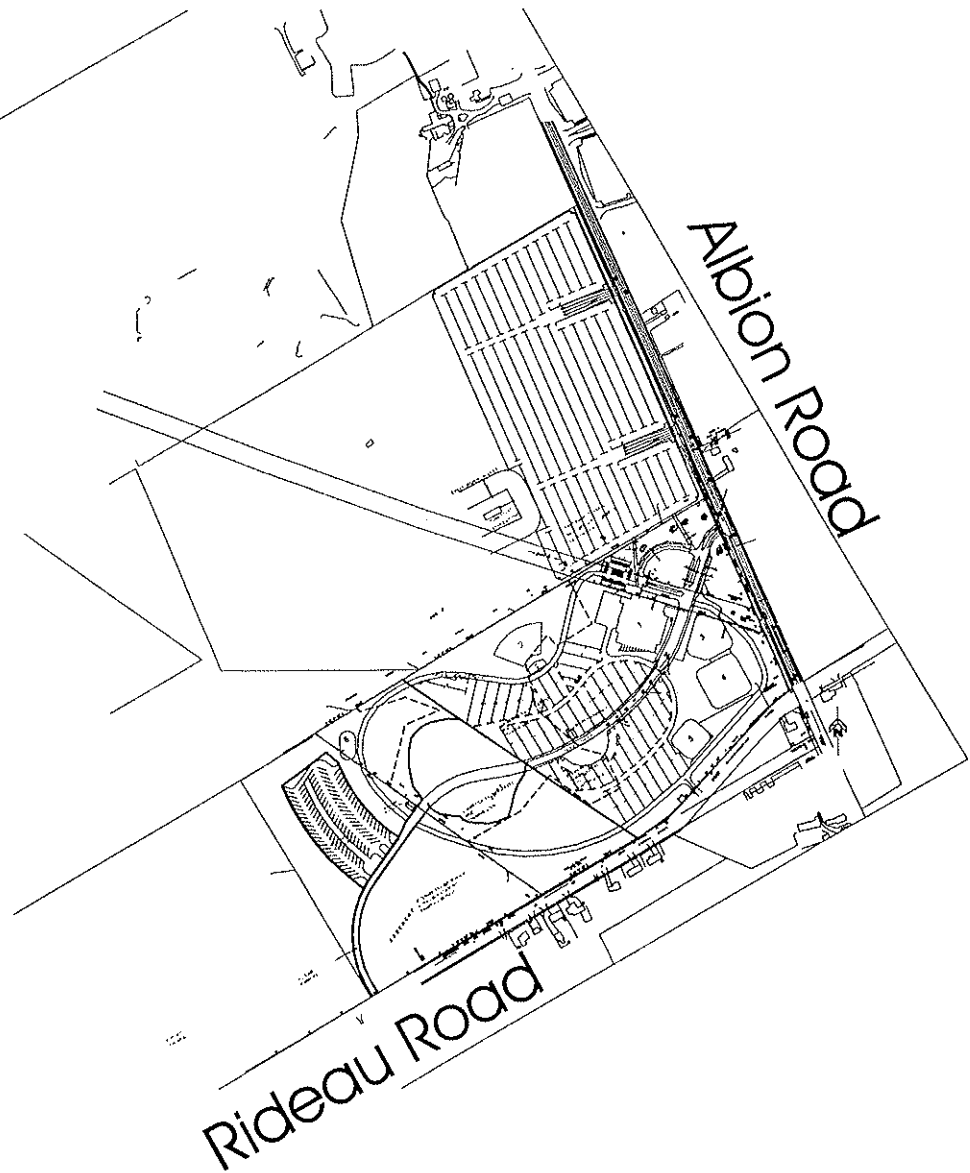
Rideau Road is a two-lane east-west rural arterial which provides a link between major north-south arterials such as Hawthorne Road, Bank Street, Albion Road, Bowesville Road, Limebank Road and River Road. Locating one of the site's two primary driveway accesses onto Rideau Road will tend to reduce the traffic impact on Albion Road, as vehicles will be more likely to stay on an east-west route before selecting one of the many major north-south routes. Also, from a transportation perspective, the more rural future orientation of the CCE will have positive implications on traffic distribution, in that site traffic will be less oriented to the central urban areas of Ottawa, and therefore likely less reliant on the northern section of Albion Road. Figure 2 illustrates the most recent conceptual site plan and its access points to the adjacent arterial road network.

There are no public transit routes serving the immediate area, however, numerous private shuttle buses serve the Racetrack / Slots complex.



DELSCAN

Figure 1: Site Context
CCE Relocation
Traffic Impact Study Update #2



DELSCAN

**Figure 2: Conceptual Site Plan
CCE Relocation
Traffic Impact Study Update #2**

During the CCE's operating hours, OC Transpo has indicated they will likely provide a special shuttle-type service similar to the existing services provided to / from the annual Tulip Festival and the Corel Centre. An on-site transit drop-off / pick-up area is provided. The existing Transitway / O-Train station at Greenboro would be an ideal candidate location for a CCE route terminus. Longer-term transit service improvements could be implemented as a result of extension of rapid transit (the Transitway and / or the O-Train) from its existing terminus at South Keys. The City's North-South LRT Priority Corridor Environmental Assessment is currently underway to determine specific alignment and the appropriate mode for these potential extensions. An alignment option has been identified that serves both the CCE and Raceway / Slots sites. The CCE's site plan is compatible with this rapid transit alignment, and with a station and Park 'n' Ride lot on, or adjacent to, the site.

4.0 EXISTING TRANSPORTATION CONDITIONS

4.1 Existing Traffic Conditions

A significant amount of traffic data was collected and incorporated into the first update of the traffic study. This was done concurrently with a City of Ottawa study (Albion Road Corridor Study, February 2003) to determine potential solutions to existing through traffic issues in Blossom Park, which could have been exacerbated by the relocation of the CCEA. As part of the City study, in addition to conducting license plate surveys to determine the proportion of non-local traffic through Blossom Park, updated weekday turning movement counts and 24 hour ATR (tube) counts were collected. A number of possible traffic mitigation alternatives were developed and subsequently evaluated by City staff and the public. After some debate, it was decided to close Albion Road at Lester Road to north-south through traffic, a measure which was implemented in June 2004 using signage and split traffic signal phasing. With this restriction now in place, but no representative traffic volumes available, the last turning movement count at Albion / Lester was adjusted according to estimates contained in the Albion Road Corridor Study. North / south through traffic was redistributed 70% / 30% to/from the west / east, respectively.

Note that with regard to weekend peak hours, as limited turning movement data was available, factors were derived from the ATR data to assist in translating weekday peak volumes into weekend peak volumes at area intersections. These weekend peak / weekday peak ratios were 95% for Bank Street, 60% for Albion Road and 40% for Lester Road and Rideau Road. The resultant existing representative study area traffic volumes are shown on Figure 3 and summarized in Table 1.

Table 1: Estimated Traffic Link Volumes on Study Area Roads

Road Link	Afternoon Peak Hour		Saturday Peak Hour	
	Peak Direction (vph)	Two-Way Total (vph)	Peak Direction (vph)	Two-Way Total (vph)
Albion Road				
-south of Bank	660*	1,060*	500*	990*
-north of Lester	450*	800*	445*	880*
-south of Lester	790	1,240	420	765
-north of RCR	840	1,200	430	725

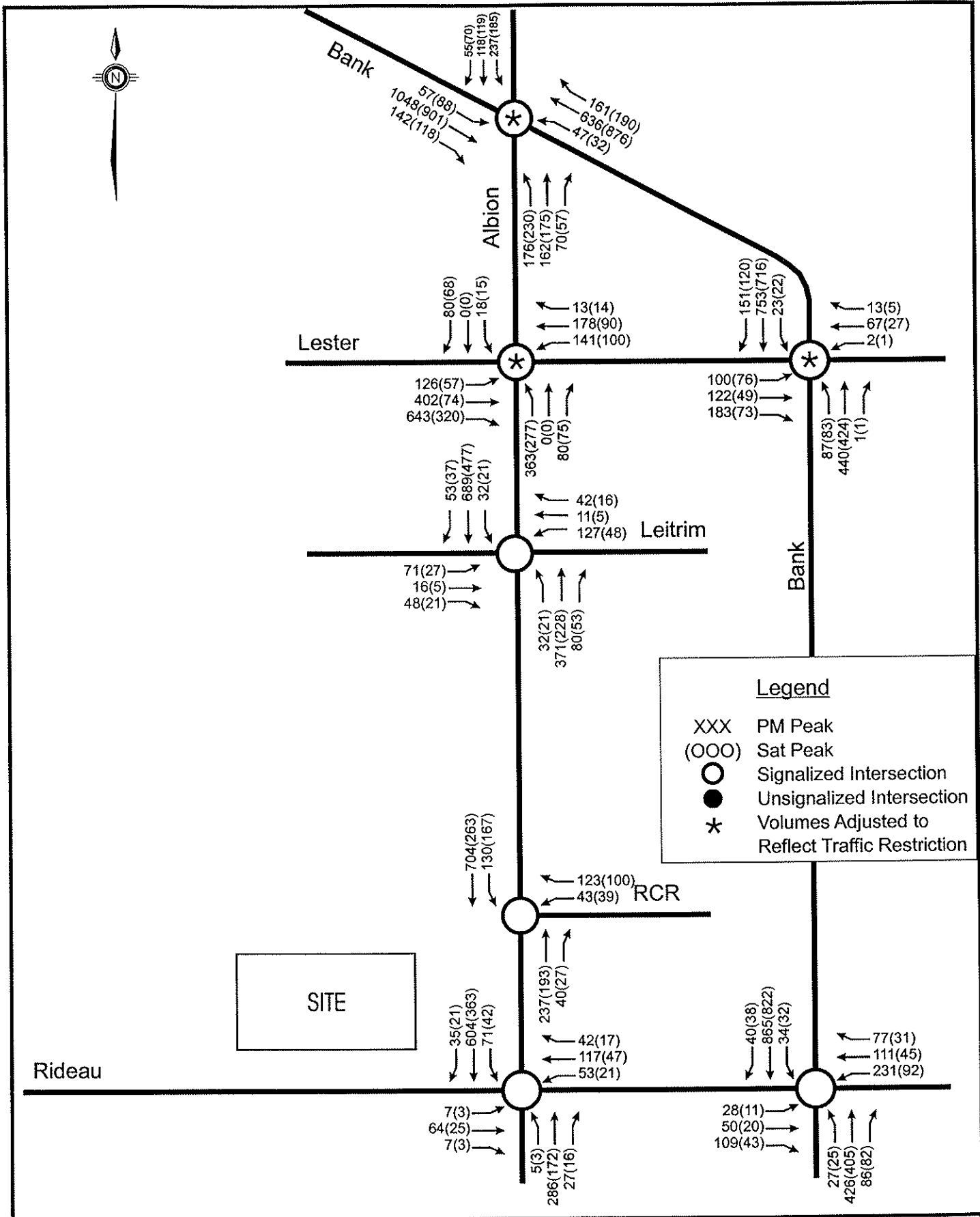
-north of Rideau	710	1,045	425	620
-south of Rideau	660	980	390	580
Bank Street				
-west of Albion	1,380	2,235	1,200	2,360
-east of Albion	1,220	2,000	1,080	2,115
-north of Rideau	940	1,470	890	1,340
-south of Rideau	1,200	1,740	960	1,470
Leitrim Road				
-west of Albion	135	230	60	115
-east of Albion	180	310	70	150
Rideau Road				
-west of Albion	160	240	70	100
-east of Albion	210	375	85	170
* taken prior to Albion / Lester through traffic restriction				

4.2 Existing Intersection Operations

The SYNCHRO 5.0 program was used to evaluate the existing traffic conditions for the study area intersections. Aside from the restrictions put in place at Albion / Lester, the only major change to the area road network since the last TIS Update was realignment and signalization of the Albion / Leitrim intersection along with the construction of left-turning lanes on all of its approaches. The worksheets are included as Appendix B and the analysis results are summarized in Table 2.

Table 2: Existing Intersection Operations

Intersection	Assumed Cycle Length (seconds)		Volume to Capacity Rate (v/c)		Level of Service (LoS)		Worst Movement	
	PM	Sat	PM	Sat	PM	Sat	PM	Sat
Albion / Bank	80	80	0.75	0.68	C	B	SBLT	SBLT
Albion / Lester	80	80	0.77	0.65	C	B	NBLT	EBT
Lester / Bank	80	80	0.66	0.43	B	A	EBT	EBT
Albion / Leitrim	n/a	n/a	0.67	0.40	B	A	SBT	SBT
Albion / RCR	60	60	0.57	0.35	A	A	SBT	WBR
Albion / Rideau	60	60	0.53	0.28	A	A	SBT	SBT
Rideau / Bank	80	80	0.86	0.70	D	B	SBT	SBT
Note: Analysis of signalized intersections assumes an ideal saturation flow of 1800 veh / hr, peak hour factor of 0.95 or as determined from counts, cycle lengths as estimated in the field, actuated-coordinated operation and optimized signal timings as produced by SYNCHRO 5.0.								



The City has adopted criteria which directly relate the volume to capacity (v/c) rate of a signalized intersection (most critical movement) to its Level of Service (LoS) rating. The Level of Service ratings range between LoS A (v/c ratio of less than 0.60 - indicative of excellent performance) to LoS F (v/c ratio that exceeds 1.0 - indicative of failure or very poor performance). For planning purposes, the City considers LoS D (v/c rate between 0.81 and 0.90) to be the minimum acceptable standard for signal operation during the peak hours. However, it is recognized that many intersections in Ottawa presently operate at service levels that are slightly below (LoS E) or slightly exceed (LoS F) the capacity of an intersection (v/c ratio of 1.0). With regards to unsignalized intersections, the LoS rating is based on average vehicle delay.

As shown in Table 2, the majority of the study area intersections currently function at an acceptable level of service (LoS D or better) in both peak periods. Note that the LoS values for the Albion / Lester, Bank / Lester and Bank / Albion intersections are based on the estimated diversion of traffic around the recently installed north-south "through traffic" restrictions at the Albion / Lester intersection.

One operational issue that does not show up in the analysis of the study area's major intersections is the challenges faced by residents who have driveway access directly to Albion Road. While it is anecdotal, a number of these residents have expressed concern about entering and exiting their driveways due to the combination of increasing traffic volumes and vehicle speeds. These concerns will increase as area traffic volumes increase. This situation is not untypical of rural arterials on the City's suburban fringe. Other City roads that have experienced similar problems as suburban and rural growth has occurred include Innes Road east of Orleans Boulevard and St. Joseph Boulevard east of RR 174.

4.3 Historic Traffic Growth

With regards to recent traffic growth trends on study area roads, analysis of historic traffic data on subject sections of Albion Road and Lester Roads revealed significant changes in traffic volumes, particularly since 1997 / 1998. The continued growth in the southeast sector of the City, the opening of the Raceway / Slots facility and transportation network modifications such as the completion of the Hunt Club / Airport Parkway interchange and the extension of Lester Road to the Airport Parkway are major factors in these changes. Overall, two-way traffic on Albion Road north of Lester Road showed a fairly strong negative trend (decrease), up until 2000, after which traffic increased significantly during both peak and off-peak hours of the day. Traffic on Albion Road south of Lester Road showed a sustained increase of approximately 3% per annum between 1995 and 2000, but an approximate 15% per annum increase between 1999 and 2002. The blended growth rate between 1995 and 2002 ranges from 4% in the AM peak hour to 7% in the PM peak hour. As the RCR began its expanded Slots operation in late 1999, the recent increase in traffic volumes may be partially attributed to its traffic generation, particularly in the afternoon and Saturday peak hours. Based on current traffic counts, the RCR adds a maximum of approximately 250 vph to any one section of Albion Road during the afternoon commuter peak. If this traffic were to be removed from the Albion Road traffic volume totals in 2000 and 2002, the resultant average annual growth rate between 1995 and 2002 is in the order of 2% for the PM peak hour. This is more consistent with the 3% growth rate exhibited prior to the RCR's expansion. As the RCR / Slots activity constitutes a significant one-time impact on the local road network, in our opinion, it is more appropriate to apply an annual growth rate of 3% for the purposes of projecting future background traffic conditions.

Although a full set of consecutive annual traffic counts were not available for the adjacent section of Rideau Road, a comparison of 1996, 2000 and 2002 peak hour counts showed an average increase of 2% per annum, which is slightly lower than the effective growth trend revealed at the Albion / Lester intersection. The 3% rate, when applied to all area intersections, will therefore represent a slightly conservative approach.

As the City requires analysis of conditions for the build-out year (re-opening year of 2005), as well as five years of background growth, a growth factor was applied to existing regional-type traffic movements on adjacent roadways to obtain baseline traffic volumes in the absence of any CCE development. For the re-opening year 2005 conditions, a growth factor of 1.06 was applied to account for 2 years of background traffic growth between 2002/2003 (when traffic data was last collected) and the base year. For the horizon year of 2010, a growth factor of 1.27 was applied to account for 8 years of background traffic growth. Note that traffic from potential residential developments located near the subject site in Leitrim and / or Riverside South will have been implicitly accounted for in this background growth factor.

5.0 SITE TRAFFIC GENERATION, DISTRIBUTION AND ASSIGNMENT

5.1 Traffic Generation

Phase 1, Year 1, 2005:

The 11 day attendance figure for the re-opening year of 2005 is estimated at 100,000 people. This translates into a peak weekday total of 10,000 people and a peak Saturday or Sunday total of 20,000 people.

To generate site peak traffic for the 2005 re-opening year, the following assumptions were made:

- peak arrivals occur over a three hour period (2PM - 5PM weekdays and 11AM - 2PM weekends);
- 40% of daily traffic occurs during this peak period;
- traffic arrivals are relatively uniform over the peak period (thus peak hour volume = 1/3 of peak period volume);
- 10% of trips by transit (source: KPMG)
- 2.5 persons per vehicle (source: KPMG)

The resultant vehicle trip calculation is as follows for the **weekday peak hour**;

$$\frac{10,000 \times 0.40 \times 0.90}{3 \times 2.5} = 480 \text{ inbound vehicles per weekday peak hour}$$

Assuming inbound vehicles constitute 90% of the total traffic generation during this peak period:

$$480 \times 10/90 = 60 \text{ outbound vehicles per hour (rounded up from 53).}$$

The reverse inbound / outbound directional split would be expected to apply for the peak exiting hour, however, as the peak exiting hour has historically been as late as 11:00 PM to 12:00 PM, the background traffic on adjacent regional roads at that time will be considerably less and substantially more capacity will be available. Note that ATR counts indicate that background traffic volumes at this hour of the evening are in the order of only 10-15% of their peak hour values.

For the **Saturday peak hour**, the calculation is as follows;

$$\frac{20,000 \times 0.40 \times 0.90}{3 \times 2.5} = 960 \text{ inbound vehicles per Saturday peak hour}$$

Assuming inbound vehicles constitute 90% of the total traffic generation during this peak period:

$$960 \times 10/90 = 110 \text{ outbound vehicles per hour (rounded up from 107).}$$

The reverse inbound / outbound directional split would be expected to apply for the peak exiting hour.

Future Phases, Year 5, 2010:

Over the five years between the 2005 re-opening and the 2010 horizon year, the attendance is expected to grow by approximately 50% to reach 150,000 people. This translates into a peak weekday total of 15,000 people and a peak Saturday or Sunday total of 25,000 people.

As the same traffic generation factors apply as for Scenario 1, Year 1, the only variable is attendance. To generate peak site traffic volumes for the 2010 build-out year, a factor of 1.5 was applied (15,000 / 10,000) to the weekday volumes and a 1.25 factor (25,000 / 20,000) applied to the weekend volumes.

The resultant vehicle trip calculation is as follows for the **weekday peak hour**;

$$480 \times 1.5 = 720 \text{ inbound vehicles per hour}$$

Assuming inbound vehicles constitute 90% of the total traffic generation:

$$720 \times 10/90 = 80 \text{ outbound vehicles per hour}$$

The reverse inbound / outbound directional split would be expected to apply for the peak exiting hour,

For the **Saturday peak hour**, the calculation is as follows;

$$960 \times 1.25 = 1,200 \text{ inbound vehicles per Saturday peak hour}$$

Assuming inbound vehicles constitute 90% of the total traffic generation:

$$107 \times 1.25 = 140 \text{ outbound vehicles per hour (rounded up from 134).}$$

The reverse inbound / outbound directional split would be expected to apply for the peak exiting hour.

Figures 4a) and 4b) illustrate the site-generated traffic volumes for Scenario 1 and Scenario 2, respectively. As mentioned previously, the City is currently undertaking a rapid transit extension study for the Riverside South and Leirtrim growth areas. Depending on the alignment selected, transit service and modal split to the CCE / Racetrack Slots entertainment node could be improved significantly. Table 3 summarizes the implications of increased modal split on long-term traffic generation and passenger volumes.

Table 3: Modal Split Effect on Ultimate Traffic Generation

Transit Modal Share	PM Peak		Saturday Peak	
	Traffic Generation (vph)	Transit Passengers (pph)	Traffic Generation (vph)	Transit Passengers (pph)
10%	800	220	1340	370
20%	710	440	1190	740
30%	620	670	1040	1110

As shown in Table 3, there is potential for significant transit passenger volumes and traffic reduction during the 11 day duration of the CCE should a high quality rapid transit facility be located proximal to the CCE facilities.

Permanent On-Site Facilities:

To isolate the traffic impact of the proposed permanent, year-round facilities, each land use was analyzed separately and a range of traffic generation rates compiled. Note that the peak hours of each land use are unlikely to overlap significantly, and will generally speaking be isolated to temporary events over the course of a year.

- **4,865 ft² office / admin building (Phase 1)**

Traffic generation was assessed using first principles and the following parameters.

- Employment density of 1 employee per 250 ft² (likely on the high (conservative) side for this type of building)
- Absenteeism of 10% (employees on a given day that are ill, on vacation or away from the office)
- Peaking factor of 60% in the AM and 50% in the PM (the percentage of employees arriving / departing during the peak hour, consistent with other sites within the National Capital Region)
- Transit / Bike / Walk factor of 0% (due to the isolated rural nature of the site)
- Vehicle Occupancy factor of 1.2 (persons per vehicle)

The resultant calculation projects a two-way total of 9 vph in the AM peak and 7 vph in the PM peak. This is less than 1 additional vehicle every seven minutes added to area roads, split into inbound and outbound traffic and into potentially four different travel directions. Its impact, therefore, is insignificant.

- **40,000 ft² of trade show / convention space (Phase 2)**

Although there is limited generic data available with regard to the traffic generation characteristics of convention centres, an estimate of specific events with potentially high traffic generation rates (e.g. flea market, home shows) can be obtained through comparison with ITE Land Use # 815: "Free-Standing Discount Store". If a retail use of this type were in place on site, it could generate between 170 vph in the PM peak hour and 300 vph during the Saturday peak hour. These are considered "worst case" traffic volumes.

- **27,000 ft² agricultural centre (Phase 2)**

It is assumed that the majority of traffic to/from this building will be accounted for in the CCEA attendance figures. During the remainder of the year, its traffic generation will be relatively low and confined to off-peak hours.

- **5,000 seat performance theatre (Phase 2)**

The total potential capacity of this amphitheatre is 10,000 persons (5,000 seated plus 5,000 general admissions). These events are not expected to be frequent, however, assuming, for example, a weekday evening concert beginning at 7:00 PM, a total of approximately 800 to 1,600 vph could be generated, most likely occurring outside of peak commuter hours. A large percentage of these trips could be discounted due to shared trips with the concurrent Exhibition activities. A 50% peak arrival factor, 2.5 people per vehicle and a 20% transit share were assumed in this analysis, however, for a sold out event, additional buses and more frequent service could be arranged to increase the transit modal split to perhaps 30% with vehicle occupancy rising to 3.0 people per vehicle. This would reduce the maximum traffic generation to approximately 1,200 vph.

- **1,000 seat arena (Phase 2)**

Assuming a sold-out event, a 50% arrival factor and 2 people per vehicle, the total way traffic generation is projected to be in the order of 250 vph.

Table 4 summarizes the potential year-round traffic generation scenarios and their impact on the adjacent section of Albion Road.

Table 4: Year-Round Activities Traffic Generation Summary

Land Use	Potential Two-Way Peak Hour Vehicle Trips	Potential % Increase in Peak Hour Traffic on Albion Road Adjacent to the Site
4,860 ft ² Office (Phase 1)	10 vph	<1%
40,000 ft ² trade show / convention space	170 vph PM, 300 vph Sat	+15% PM, +50% Sat
27,000 ft ² agricultural centre	n/a	n/a
5,000 seat performance theatre	1,200 vph	+100% PM, +200% Sat
1,000 seat arena	250 vph	+20% PM, +40% Sat

It should be noted that the combined peak traffic impact of all of the above land uses is extremely unlikely to occur at the same time. As shown in Table 4, the only land use with a potential peak traffic impact greater than that of the CCE itself is the proposed amphitheatre. Even this traffic impact will be reduced due to shared trips between the exhibition and concert activities. It is suggested, therefore, that any roadway modifications required to support the 11 day CCE activities would be sufficient to accommodate the remainder of the year round uses. Police traffic control and additional transit service is recommended for low frequency events such as sell-out shows at the amphitheatre.

5.2 Traffic Distribution and Assignment

To determine the expected traffic distribution, a number of data sources were considered. The 2000 Central Canada Exhibition Survey provided a breakdown of the place of residence of approximately 600 visitors. Approximately 70% of the visitors came from Ottawa or Quebec. 8% came from Nepean / Kanata, 5% from Cumberland / Orleans and the remaining 17% from other parts of Ontario or outside Ottawa. This data provides a rough baseline estimate of traffic destined to the site from the north, west, east and south, respectively. Also of note is the existing directional traffic split at the RCR / Albion Road site driveway, as it is in a nearby location and serves a similar region-wide market share. Afternoon peak hour counts performed at the site driveway on March 13th, 2002 and October 2nd, 2002 indicated the north / south distribution of entering and exiting site traffic was approximately 75% / 25% which is somewhat similar to the 83% / 17% estimate derived from the 2000 Exhibition Survey. The overall 75% / 25% distribution was deemed appropriate for the proposed Ex site as it would be more reflective of the future rural location and the agricultural orientation of programming.

The site plan includes a parking lot adjacent to the west of the exhibition grounds with its driveway access to Rideau Road. As access to approximately half of the site's total parking count will be directly

to Rideau Road, a significant proportion of traffic to / from the site would likely travel east-west on Rideau Road and then use other north-south routes in lieu of Albion Road. These alternate north-south roads provide good connectivity and continuity to the remainder of the Regional road network and include Riverside Drive / River Road, Limebank Road, Bank Street / Conroy Road and Hawthorne Road. The resultant traffic distribution within the study area is estimated to be as follows:

- 50% to/from the north via Albion Road;
 - 20% to/from the west via Rideau Road;
 - 20% to/from the east via Rideau Road; and
 - 10% to/from the south via Albion Road
- 100%

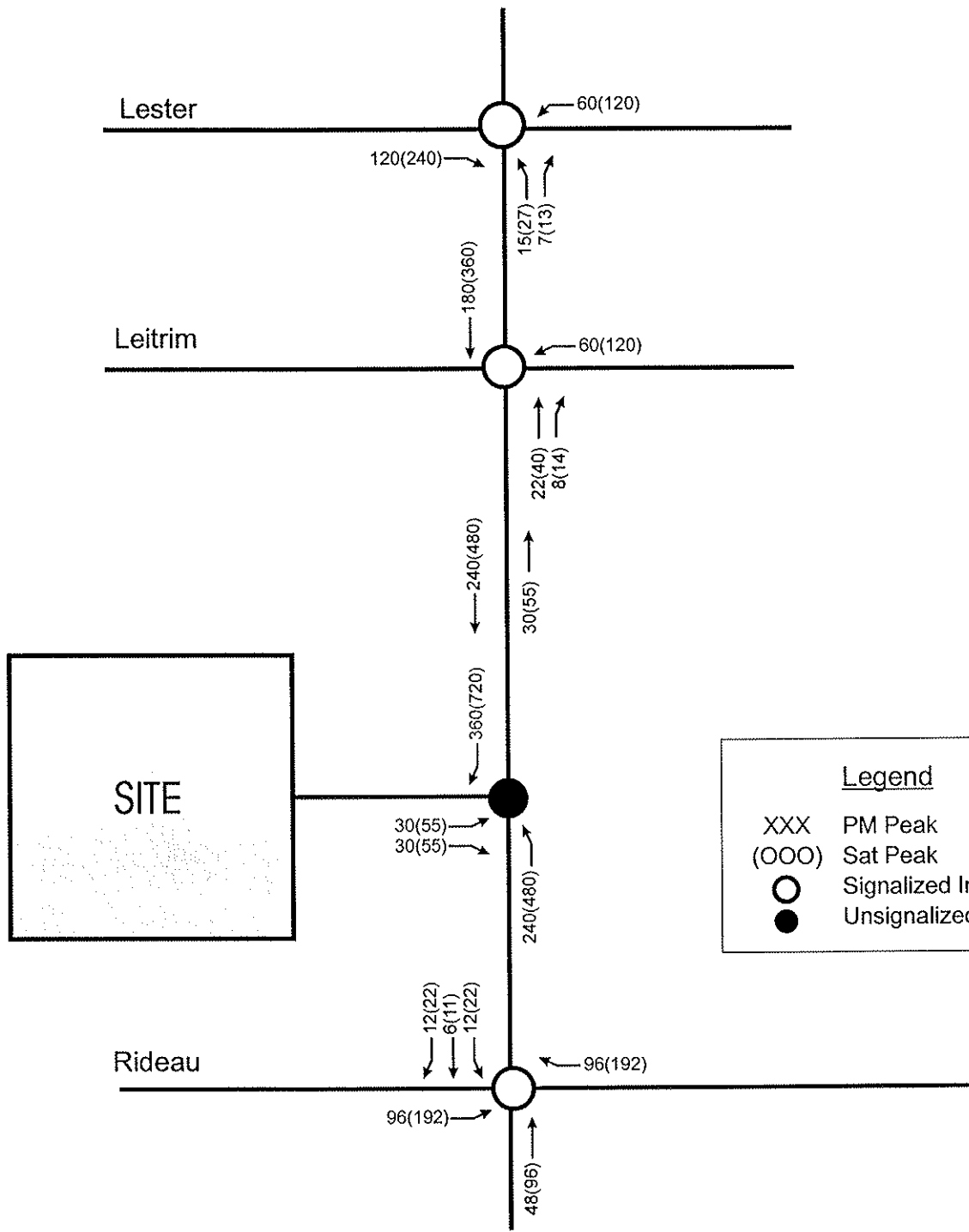
Traffic is projected to split approximately 75% / 25% north / south at the Albion Road / site intersection.

As noted, the City has recommended the prohibition of north-south through traffic on Albion Road at Lester Road. Assuming a high level of compliance and enforcement, the impact of CCEA event traffic on the residential section of Albion Road will be minimal.

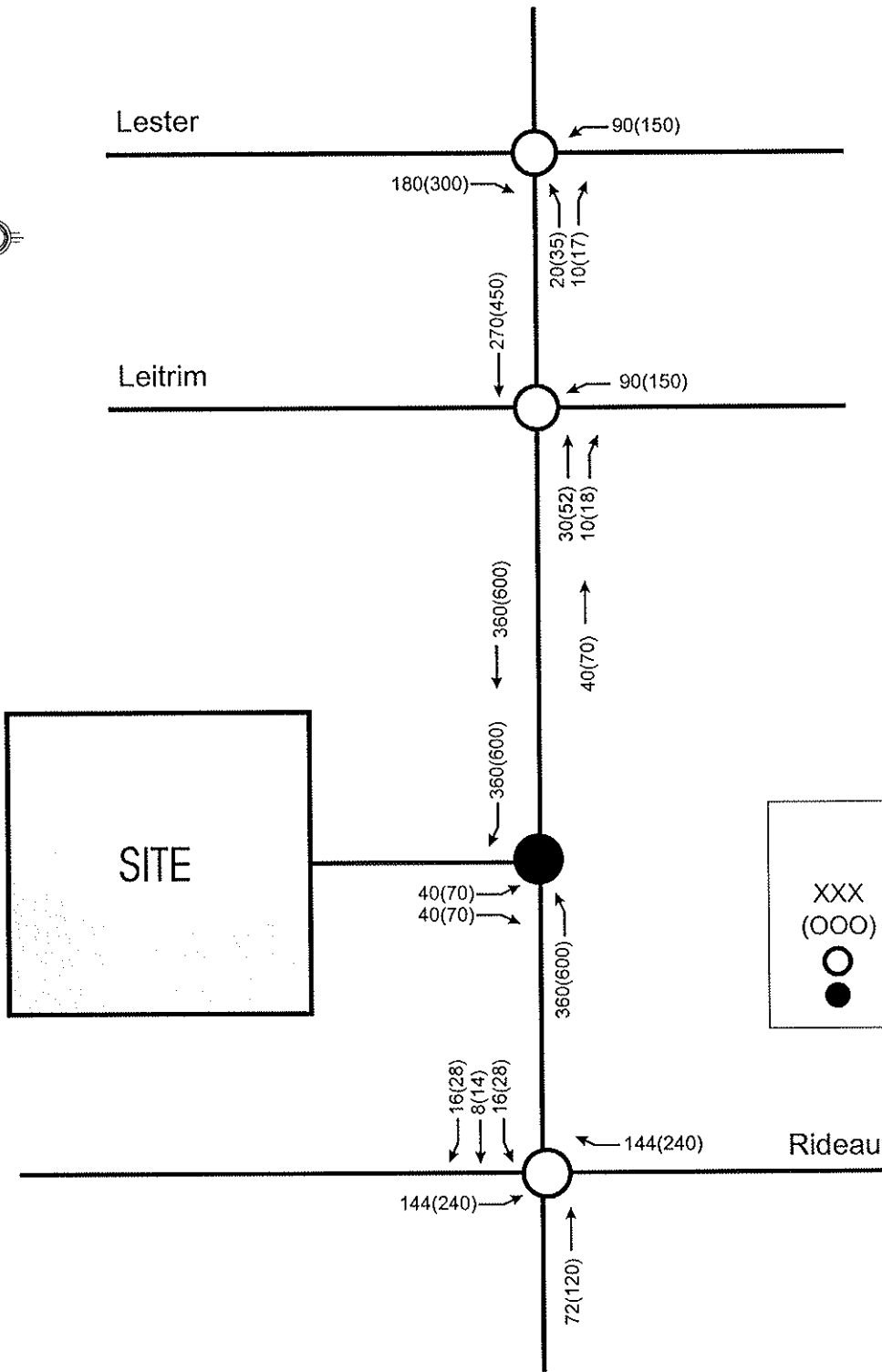
Figures 4a) and 4b) show the projected assignment of site-generated traffic to the base road network for the re-opening (2005) and horizon year (2010) attendance estimates, respectively.

5.3 Total Projected Traffic Volumes

The City requires the projection and analysis of total traffic conditions for five years beyond site development. Assuming a base year of 2002 / 2003, and a Phase 1 build out year of 2005, the related horizon year is the year 2010. Total projected traffic conditions are determined by increasing existing traffic to the horizon year using the historic traffic growth rates and then adding on site-generated traffic. Total traffic volumes are shown on Figures 5a) and 5b) for the re-opening (2005) and horizon year (2010), respectively.



Legend	
XXX	PM Peak
(OOO)	Sat Peak
○	Signalized Intersection
●	Unsignalized Intersection



Legend

- XXX PM Peak
- (OOO) Sat Peak
- Signalized Intersection
- Unsignalized Intersection

6.0 ANALYSIS OF PROJECTED CONDITIONS

6.1 Capacity Analysis Results

Year 1, 2005:

Using the SYNCHRO 5.0 program, the study area intersections are projected to function as described in Table 5 for the re-opening year of 2005. The detailed analysis sheets are provided in Appendix E.

Table 5: Year 1, 2005 Projected Traffic Conditions

Intersection	Assumed Cycle Length (seconds)		Volume to Capacity Rate (v/c)		Level of Service (LoS)		Worst Movement	
	PM	Sat	PM	Sat	PM	Sat	PM	Sat
Albion / Bank	80	80	0.83	0.83	D	D	SBLT	SBLT
Albion / Lester ¹	80	80	0.83	0.72	D	C	NBLT	EBRT
Lester / Bank	80	80	0.63	0.47	B	A	EBT	EBLT
Albion / Leitrim	80	60	0.85	0.81	D	D	SBT	SBT
Albion / RCR	60	60	0.77	0.60	C	A	SBT	SBT
Albion / CCE²	n/a	n/a	n/a	n/a	F	F	EBLT	EBLT
Albion / Rideau	60	60	0.62	0.69	B	B	SBT	EBLT
Rideau / Bank	80	80	0.87	0.80	D	C	SBT	SBT

Notes: Analysis of signalized intersections assumes an ideal saturation flow of 1800 veh / hr, peak hour factor of 0.95 or as determined from counts, cycle lengths as estimated in the field, actuated-coordinated operation and optimized signal timings as produced by SYNCHRO 5.0.

1. Assumes prohibition of NB and SB through movements and an exclusive EB right-turn lane. Through traffic redistributed 70%/30% to/from the west / east.

2. Assumes EB STOP control during peak arrival period and police traffic control during peak exit

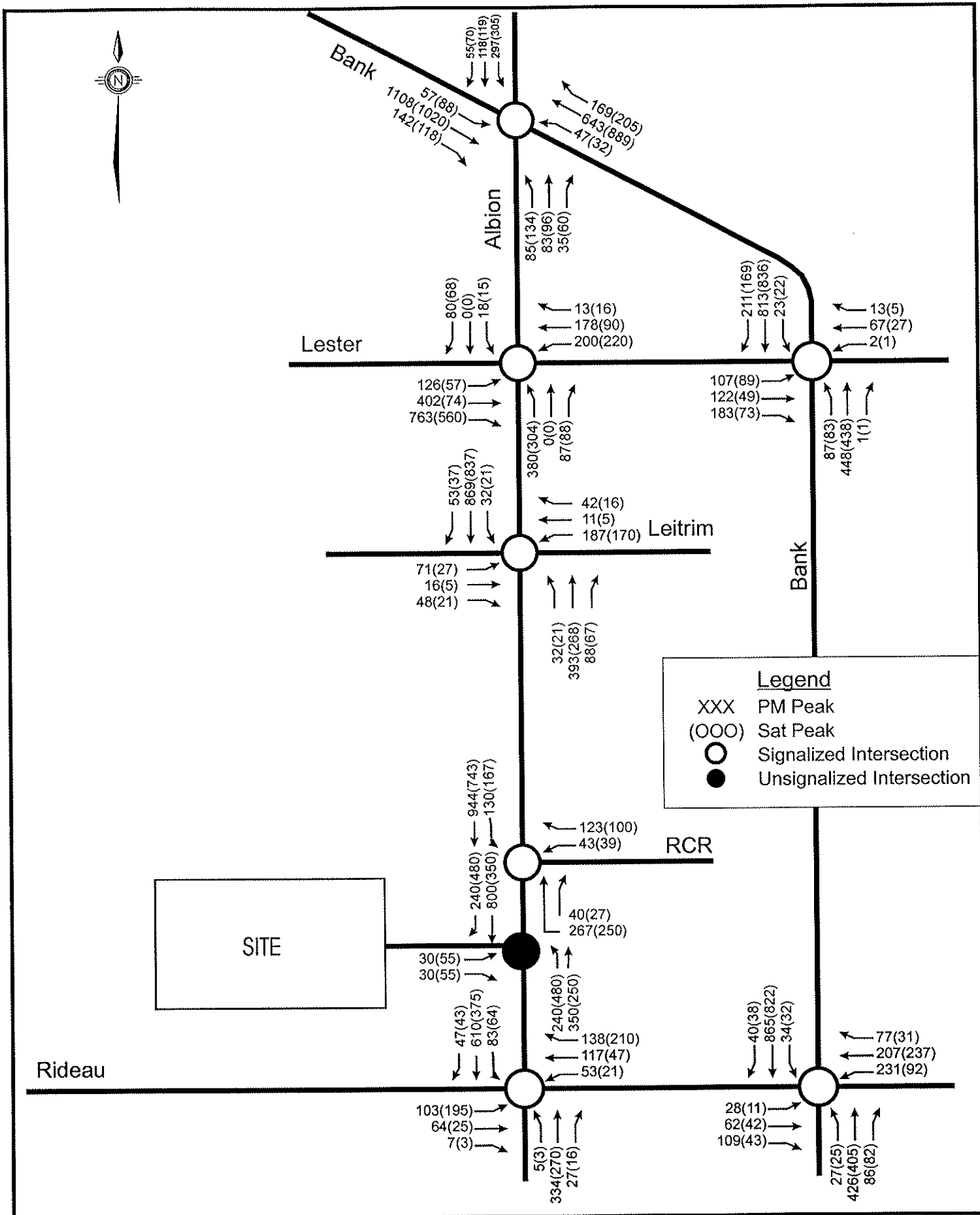


Figure 5a: Scenario 1, Year 1, 2005
 Total Projected Traffic Volumes
 CCE Relocation
 Traffic Impact Study Update #2

The results of Table 5 indicate that all study area intersections can accommodate the addition of CCE traffic and 3% background traffic growth at an acceptable level of service.

With regards to traffic control at the two proposed Albion / CCE parking entrances, given the temporary traffic impact of the CCE over the balance of the year, installation of traffic control signals are not projected to be warranted, or appropriate, at this location in the short term. The CCE has advised that police officers will be used to direct and control traffic at the main entrances in the short-term. This will allow time to monitor actual conditions and to best determine the appropriate longer-term solution for the number of access points, turn lane requirements and traffic control requirements.

Year 5, 2010:

Using the SYNCHRO 5.0 program, the study area intersections are projected to function as described in Table 6 for the horizon year of 2010 and maximum projected attendance. The detailed analysis sheets are provided in Appendix E.

Table 6: Year 5, 2010 Projected Traffic Conditions

Intersection	Assumed Cycle Length (seconds)		Volume to Capacity Rate (v/c)		Level of Service (LoS)		Worst Movement	
	PM	Sat	PM	Sat	PM	Sat	PM	Sat
Albion / Bank	100	100	0.94	0.91	E	E	SBLT	SBLT
Albion / Lester	100	100	0.90	0.75	D	C	NBLT	EBRT
Lester / Bank	100	100	0.79	0.49	C	A	EBT	EBLT
Albion / Leitrim	100	100	1.00	0.91	E	E	SBT	SBT
Albion / RCR	100	100	0.90	0.69	D	B	SBT	SBT
Albion / CCE¹	n/a	n/a	n/a	n/a	F	F	EBLT	EBLT
Albion / Rideau	100	100	0.77	0.86	C	D	SBT	EBLT
Rideau / Bank	100	100	0.99	0.90	E	D	SBT	WBT

Notes: Analysis of signalized intersections assumes an ideal saturation flow of 1800 veh / hr, peak hour factor of 0.95 or as determined from counts, cycle lengths as estimated in the field, actuated-coordinated operation and optimized signal timings as produced by SYNCHRO 5.0.
1. Assumes police traffic control equivalent to conventional traffic-actuated signals.

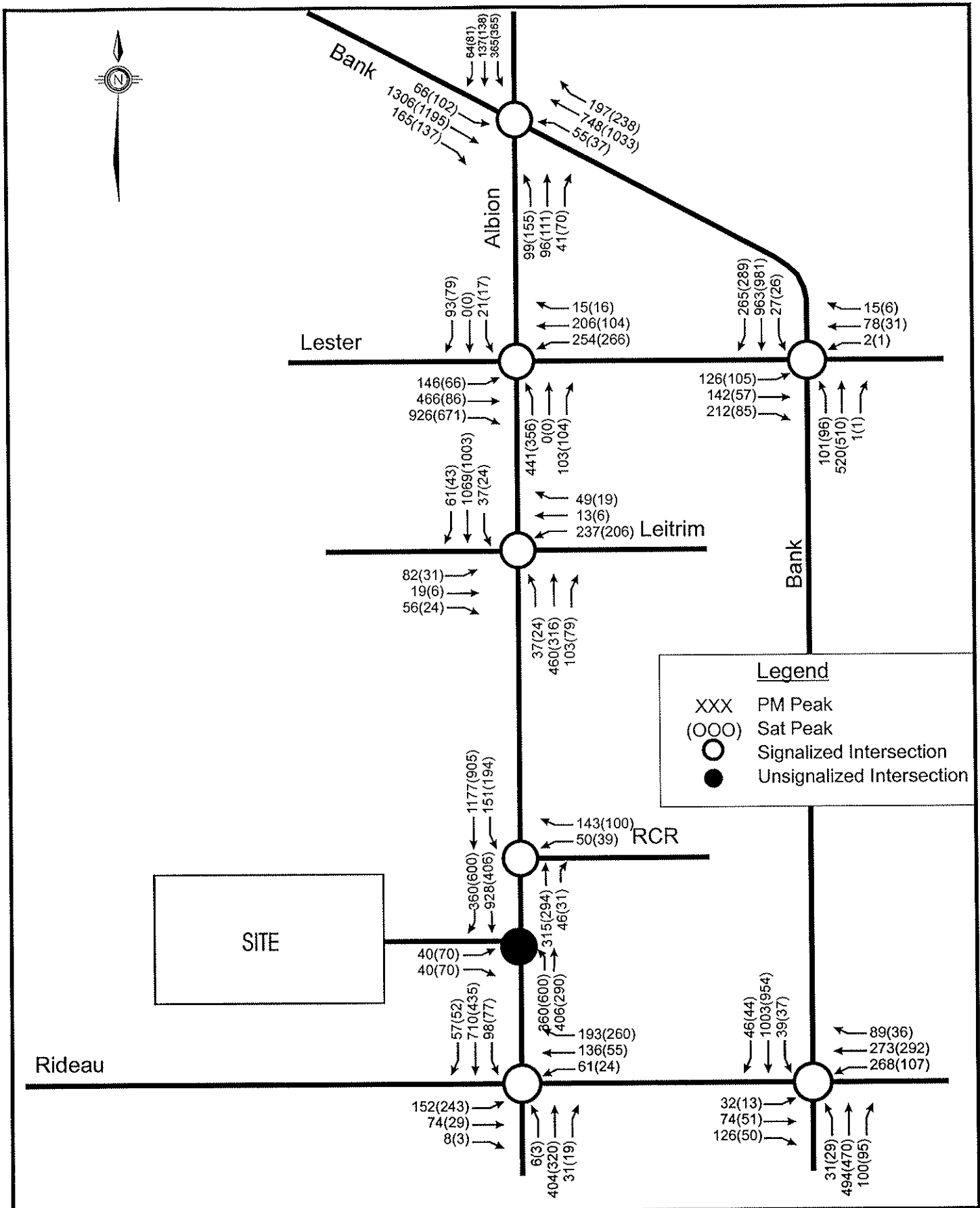


Figure 5b: Scenario 2, Year 5, 2010
 Total Projected Traffic Volumes
 CCE Relocation
 Traffic Impact Study Update #2

The analysis in Table 6 indicates that the area road network will be operating at capacity, particularly during the PM peak hour, when commuter traffic and CCE traffic volumes overlap. The Albion / Bank, Albion / Leitrim and Bank / Rideau intersections are projected to be operating in the LoS D to F range, while all other intersections will satisfy the City's minimum LoS criteria. The City's 2021 Transportation Master Plan identifies opportunities to mitigate this congestion through a combination of the following infrastructure projects:

- O-Train extension to downtown and Riverside South (by 2008);
- Strandherd-Armstrong Bridge (by 2008);
- Armstrong Road: Rideau River to Bank Street (by 2008);
- Bank Street widening: Conroy Road to Armstrong Road (by 2021); and
- Albion Road widening: Rideau Road to Lester Road (by 2021)

These modifications are projected to be required with or without the subject relocation and should be assessed independently based on representative year round traffic volumes, and not on temporary special events such as the CCE.

With regard to site driveway accesses, it is recommended that the Albion Road accesses remain unsignalized and that police control be used on event days, as traffic volumes over the course of a representative weekday are unlikely to be sufficient to warrant signal installation. A northbound left and a southbound right-turning lane are required on Albion Road at all three driveway connections to allow safe deceleration distance and vehicle storage. Given the deceleration and taper lengths required, this will result in completion of a continuous three to four-lane cross-section from Rideau Road north past the RCR to High Road.

6.2 Projected Link Volumes

The conversion of total projected year 2010 traffic volumes in Figure 5b) to link volumes is summarized in Table 7.

Table 7: Total Projected Traffic Link Volumes on Study Area Roads (2010)

Road Link	Afternoon Peak Hour		Saturday Peak Hour	
	Peak Direction (vph)	Two-Way Total (vph)	Peak Direction (vph)	Two-Way Total (vph)
<u>Albion Road</u>				
-south of Bank	360	600	340	650
-north of Lester	160	275	100	180
-south of Lester	1,180	1,725	940	1,400
-north of RCR	1,330	1,790	1,100	1,495
-north of Rideau	865	1,615	820	1,390
-south of Rideau	780	1,220	460	805
<u>Bank Street</u>				

-west of Albion	1,540	2,450	1,435	2,700
-east of Albion	1,710	2,710	1,630	2,940
-north of Rideau	1,090	1,705	1,035	1,555
-south of Rideau	1,400	2,020	1,110	1,705
<u>Leitrim Road</u>				
-west of Albion	160	270	75	135
-east of Albion	300	460	230	340
<u>Rideau Road</u>				
-west of Albion	235	435	275	385
-east of Albion	390	595	340	465

6.3 Site Access Requirements

The functional requirements for the site driveway connections to Albion Road were determined using the peak design volumes for the year 2010. Based on SYNCHRO capacity analysis, standard turning lane and parking control design formulas and professional judgment, the on-site functional requirements were determined as follows:

Albion Road / CCE North Parking Lot Accesses

- To safely provide deceleration length and vehicle storage, a continuous southbound right-turn lane and a northbound left-turn lane are required at both locations;
- Two inbound and two outbound lanes are required to connect the parking area to Albion Road at each driveway location. This will allow northbound and southbound traffic movement into, or out of, the site to occur simultaneously, thereby reducing delays;
- Assuming a flat rate parking fee is charged on entry and gate control is implemented, the maximum capacity of each gate is in the order of 270 vph. Based on parking lot design guidelines and accounting for peak demand fluctuations (surges of up to 10% in the hourly flow rate), the number of *inbound* ticket gates required to service 1,200 vph are five. Each entrance gate will require minimum storage sufficient enough to accommodate a design queue (90th percentile) of 5.0 vehicles (approximately 30 m); and
- The total number of driving lanes required at each parking control access is four (3 + 1). This will ensure at least one outbound lane is open at all times and, based on the operator's discretion, will allow flexibility to accommodate varying inbound and outbound flows by converting entrance lanes to exit lanes throughout the day as demands warrant.

As designed, the two parking lot connections will have a total of four-lanes each, for a total of eight lanes. This will allow each access to have three inbound and one outbound lane in operation at all times.

Permanent Site Access to Albion Road

This driveway will accommodate day-to-day traffic demands of the permanent CCEA facilities and will occasionally serve as the parking access for special year-round events such as concerts. To test the capacity of the proposed driveway exit in the unlikely event of a sold-out concert emptying out within a short time frame, it was assumed up to 1,200 vph could load this single driveway within a one hour period. This translates to an on-site parking capacity of between 2,000 and 2,500 spaces and would only be expected to occur in the event of a sell out concert ending in the late evening (11:00 to 12:00 PM). The previously referenced ATR counts suggest that late night two-way traffic volumes on Albion Road and Rideau Road are in the order of 300 and 20 vph, respectively. Much of the traffic on Albion Road at this time is likely related to the existing Slots operations. Exiting traffic from the CCE site was assigned to the immediate road network as per the assumed entering distribution. The results indicate that assuming even a worst case exiting distribution of 75% northbound and 25% southbound, the intersection (assuming police traffic control similar to a demand responsive signal) can operate at LoS E with a maximum v/c of 0.91. These values are quite reasonable given the scale of events assumed in this worst-case scenario, however, it is recommended that a secondary exit be provided to Rideau Road once the on-site parking total exceeds the Phase 1 total of 1,675 spaces. This will facilitate and encourage a better distribution of internal and external traffic within the parking aisles and to the area road system, and will reduce delay.

Long-Term Rideau Road Parking Access

The longer-term parking plan is to move the 5,000 temporary surface spaces from the Airport Lands to the Oblates land on the west side of the site on Rideau Road. The new access points to this parking area will require eastbound left and westbound right-turn lanes and the same conceptual on-site design as currently proposed for the Airport Lands. The location of these access points will be defined at the appropriate time.

7.0 SITE PLAN INPUT

Based on the most recent iteration of the proposed site plan, the following comments and suggestions are provided:

- a bus and passenger drop-off loop has been provided on-site off of Albion Road, adjacent to the CCE's proposed main entrance at Building #1. As these one-way loops are well separated from the short and long-term parking accesses and do not require the crossing of roadways to access them, pedestrian-vehicle conflicts will be minimized. The bus drop-off lane is provided on the northeast side of Building 1 and the bus pick-up lane is shown on the south side of the on-site exit lane. This plan was reviewed with OC Transpo;
- the permanent site access to Albion Road is spaced approximately 300 m north of the Rideau / Albion intersection and 150 m south of the southernmost parking lot access to the Airport lands. The second Airport lands access is a further 250 m north and the Rideau Carleton Racetrack / Slots signalized intersection is 250 m north of the northernmost Airport lands access. This spacing of major intersections along Albion Road allows for the future

signalization of any or potentially all of these locations if ultimately necessary and allows for the development of a continuous three to four lane cross-section of Albion Road;

- initially, a service access is provided on the Rideau Road frontage, spaced approximately 220 m west of the Albion / Rideau intersection and approximately 120 m east of the nearest existing driveway location on this section of Rideau Road;
- Beyond Phase 1, a second permanent site access is proposed to Rideau Road, approximately 600 m west of the service access, to better distribute site-generated traffic. The access will require eastbound left and westbound right-turn lanes to provide safe deceleration and queuing space along Rideau Road.
- parking aisles on both temporary and permanent parking areas should be laid out perpendicular to main building entrances and / or parallel with pedestrian desire lines where possible;
- the service vehicle ring road should be designed in accordance with TAC turning vehicle templates for tractor-trailers;
- for the parking lot connections to the arterial road network, a clear throat length of 30 m (two inbound and two outbound lanes in advance of the queue storage provided for each parking control gate) is recommended to ensure safe, efficient on-site operation. 20 m of queue storage should be provided on the approach to each of the control gates; and
- a total of five parking control gates are required to service *inbound* traffic volumes projected for the two temporary parking lot accesses, giving a required number of drive lanes as six. A total of six gates and eight lanes are provided over two separate access points, thereby ensuring three inbound and one outbound lanes are in operation at both access points at all times.

8.0 FINDINGS AND RECOMMENDATIONS

Based on the foregoing analysis, the following are the findings and recommendations of this TIS:

- 1) The existing signalized intersections within the immediate study area currently operate at acceptable levels of service (majority at D or better) and there is spare capacity on the adjacent section of Albion Road to accommodate projected traffic increases;
- 2) The projection of site-generated traffic volumes is based on a number of assumptions including short and long-term attendance estimates, peak arrival and departure hours and non-auto modal share. Based on a combination of these assumptions and professional judgment, peak hour traffic generation is estimated to be in the order of 1,100 vph in the CCE re-opening year of 2005 and up to 1,350 vph in the longer term horizon year of 2010. Note that site traffic generation will be much less at all other hours of the day and on days when attendance is lower than expected.
- 3) An approximate 25% (300 vph) increase in PM peak hour traffic volume is forecast for Albion Road between Lester Road and Rideau Road, which currently carries approximately 1,200 vph two-way total. Note that the existing volume includes traffic currently generated by the RCR

and the analysis presented herein represents a worst case scenario as it accounts for peak commuter, racetrack / slots and exhibition traffic overlapping within the same hour.

- 4) A maximum of up to 5,000 temporary on-site parking spaces are to be made available at any one time, initially accessed via Albion Road on Airport lands to the north of the site and eventually to a site on Rideau Road adjacent to the west.
- 5) Physical modifications (turning lanes) are required at each site driveway intersections with Albion Road and Rideau Road to safely and efficiently accommodate projected peak hour traffic volumes. Given the 150 to 250 m spacing of the intersections and the required storage and taper lengths, the resultant design will provide a three to four lane cross-section between Rideau Road and High Road. Traffic control signals are not recommended initially at any location due to the temporary (11 day) nature of events at the CCE. Traffic conditions should be monitored during year 1 to determine the best long-term traffic control solution at this location. The CCE have advised that police manpower will be employed to direct and control traffic during peak times.
- 6) As parking charges will be collected on entry into the proposed parking areas, a total of 5 parking control gates with 6 drive aisles are required to process peak traffic volumes at the temporary parking lot access. As two connections are proposed between the parking lot and Albion Road, a total of 6 gates and 8 drive aisles will be provided.
- 7) 30 m throat length should be provided to connect the parking control queuing areas to the adjacent arterial roadways. Two inbound and two outbound lanes are required to allow opposing traffic movements to enter the site simultaneously and to reduce delays to exiting vehicles.
- 8) The site plan features a parallel bus / vehicle drop off loop that will separate pedestrians from heavy traffic flows and reduce on-site conflicts. Parking aisles should be oriented perpendicular to major site entry points and / or parallel with pedestrian desire lines to further minimize conflicts. The spacing of the permanent site driveway access with adjacent intersections (300 m to the south and 150 m to the north) does not present a safety or operational issue. The provision of a three to four lane cross-section on Albion Road between Rideau Road and High Road will allow safe deceleration and queue storage space at all times.
- 9) With regards to the proposed year-round facilities at the CCE site, as the likelihood of all of the site's peaks occurring coincidentally, is extremely low and the potential maximum traffic generation of 300 vph (excluding the infrequent performance theatre activity) is less than the CCE peak of 1,340 vph, it is suggested that the roadway modifications required to support the 11 day CCE activities will be more than sufficient to accommodate year round activities. The only land use with a potential peak traffic impact greater than that of the CCE itself is the proposed 10,000 person capacity theatre which will require police traffic control during sell-out events.
- 10) All study area intersections have sufficient capacity to accommodate site-generated Saturday peak traffic volumes and 7 years of growth in background traffic. For the weekday PM peak, the Albion / Bank, Albion / Leitrim and Bank / Rideau intersections are projected to be operating at close to capacity, while all others will operate acceptably. As the CCE is an 11 day event, any eventual modifications to these intersections to increase capacity will be triggered by background traffic growth and development of lands to the south.

APPENDIX A
EXISTING TRAFFIC COUNTS

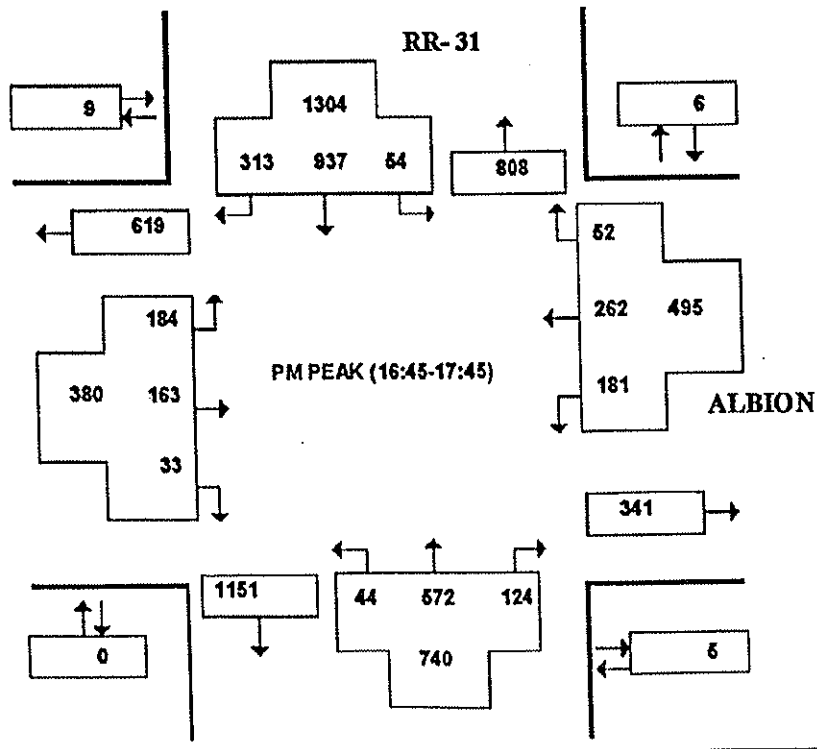
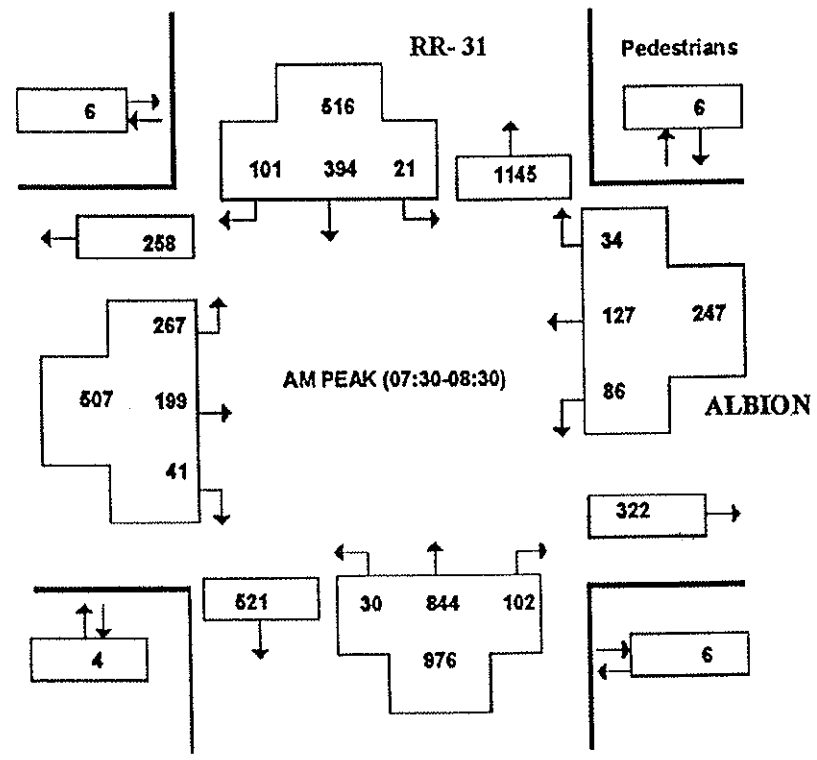


BANK ST and ALBION RD
(ULRS Listing RR- 31 & ALBION)

Survey Date: Monday 10 June 2002
 Conditions: DRY
 Start Time: 0700

Total Observed U-Turns
 Northbound: 2 Southbound: 2
 Eastbound: 2 Westbound: 0

AADT Factor
 Monday in June is 0.9



Vehicular Turning Movements - Summary

BANK ST and ALBION RD

(ULRS Listing RR-31 & ALBION)

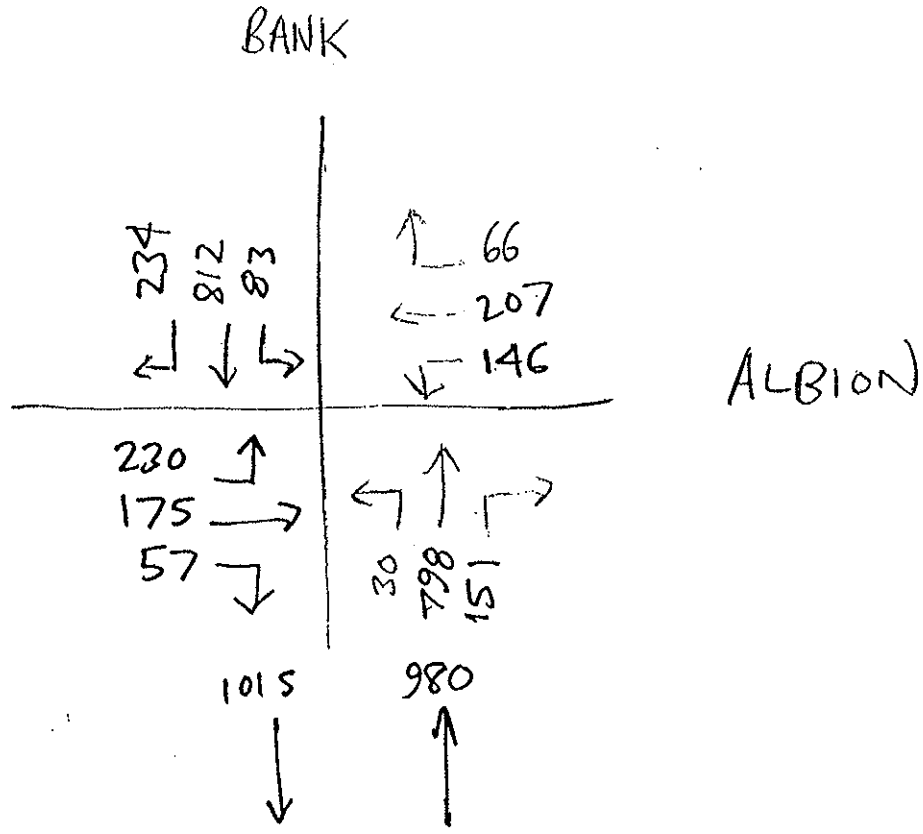
Survey Date: Saturday 13 April 2002
 Conditions: Dry
 Start Time: 0900

Total Observed U-Turns
 Northbound: 0 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Saturday in April is
 1

Time Period	RR-31									ALBION									
	Northbound			SUB TOT	Southbound			SUB TOT	STR TOT	Eastbound			SUB TOT	Westbound			SUB TOT	STR TOT	GRAND TOT
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
09:00-10:00	26	518	112	656	44	420	113	577	1233	151	109	34	294	112	98	59	269	663	1796
10:00-11:00	25	684	121	830	78	558	165	801	1631	189	164	54	407	144	146	59	349	756	2387
11:00-12:00	24	727	142	893	65	573	217	855	1748	190	157	54	401	159	167	67	393	794	2542
13:00-14:00	45	725	123	893	66	773	222	1061	1954	200	151	44	395	159	178	78	415	810	2764
14:00-15:00	30	798	151	979	83	812	234	1129	2108	230	175	57	462	146	207	66	419	881	2989
13:00-16:00	33	655	138	826	69	784	236	1089	1916	205	153	48	406	170	228	75	473	879	2794
17:00-18:00	33	579	112	724	62	610	227	899	1623	190	151	21	362	170	191	54	415	777	2400
18:00-19:00	35	452	90	577	31	537	192	760	1337	201	136	28	365	127	203	40	370	735	2072
19:00-20:00	13	343	76	432	30	399	161	590	1022	145	115	22	282	94	166	22	282	564	1586
9.0 HR TOTAL	264	5481	1065	6810	528	5466	1767	7761	14571	1701	1311	362	3374	1281	1584	520	3385	6759	21330

1305
= 98

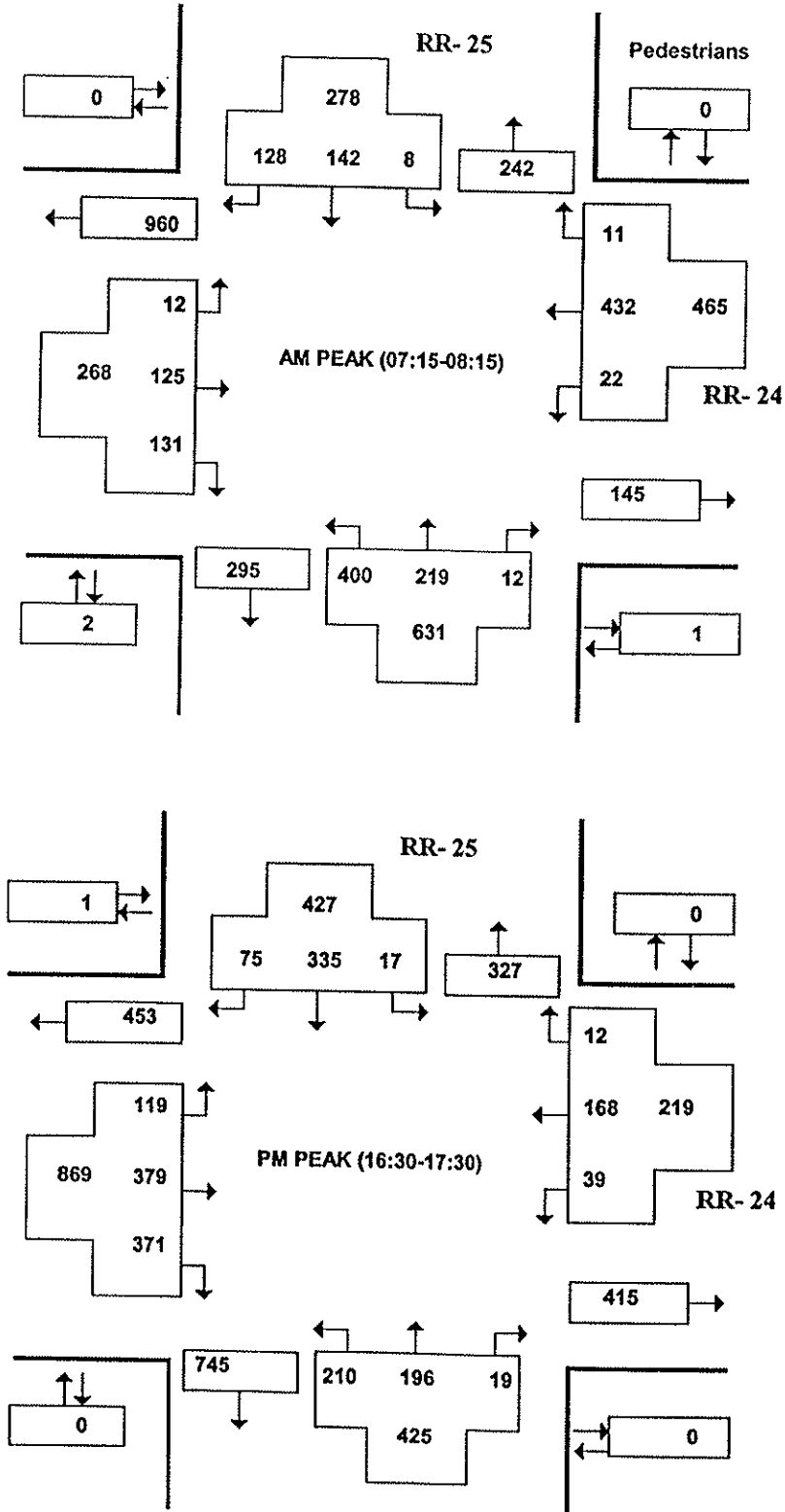


LESTER RD and ALBION RD
(ULRS Listing RR- 24 & RR- 25)

Survey Date: Friday 31 May 2002
 Conditions: DRY
 Start Time: 0700

Total Observed U-Turns
 Northbound: 0 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Friday in May is
 0.8





Transportation, Utilities and Public Works Department

Count ID: 1381

Vehicular Turning Movements - Summary

LESTER RD and ALBION RD

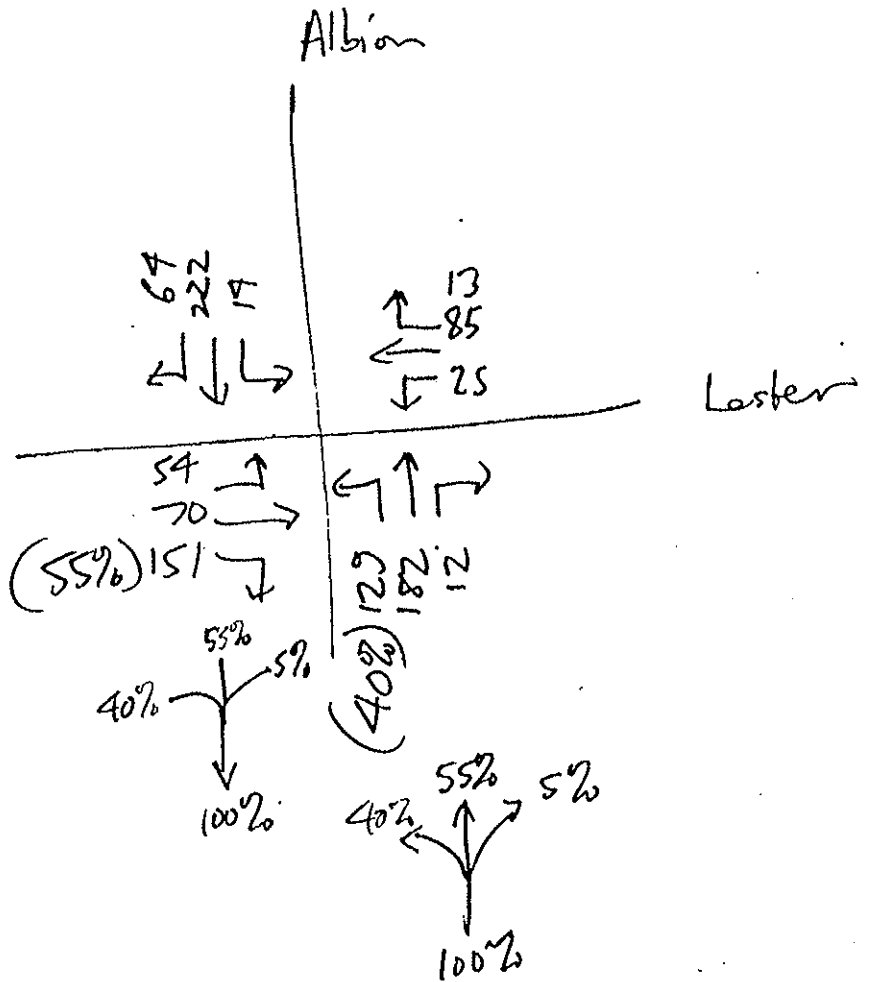
(ULRS Listing RR-24 & RR-25)

Survey Date: Saturday 13 April 2002
 Conditions: Dry
 Start Time: 0900

Total Observed U-Turns
 Northbound: 0 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Saturday in April is
 1

Time Period	RR-25										RR-24									
	Northbound			SUB TOT	Southbound			SUB TOT	STR TOT	Eastbound			SUB TOT	Westbound			SUB TOT	STR TOT	GRAND TOT	
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT				
09:00-10:00	73	113	16	202	5	109	39	153	355	19	42	76	137	14	75	9	98	235	590	
10:00-11:00	114	175	13	302	7	154	45	206	508	24	72	85	181	21	63	7	91	272	780	
11:00-12:00	99	176	10	285	12	174	47	233	518	36	71	84	191	18	106	12	136	327	845	
13:00-14:00	104	200	10	314	19	181	64	264	578	41	97	147	285	6	115	6	127	412	990	
14:00-15:00	115	221	12	348	11	196	52	259	607	58	81	140	279	24	80	8	122	401	1008	
15:00-16:00	129	182	12	323	14	222	64	300	623	54	70	151	275	25	85	13	123	398	1021	
17:00-18:00	104	185	17	306	8	205	55	268	574	46	66	135	247	21	86	13	120	367	941	
18:00-19:00	109	167	12	288	7	193	35	235	523	24	58	139	221	20	63	9	92	313	836	
19:00-20:00	88	135	9	232	3	188	36	227	459	16	46	121	183	14	40	5	59	242	704	
9.0 HR TOTAL	935	1554	111	2600	86	1622	437	2145	4745	316	603	1078	1999	163	723	82	868	2967	7712	





Transportation, Utilities, and Public Works Department

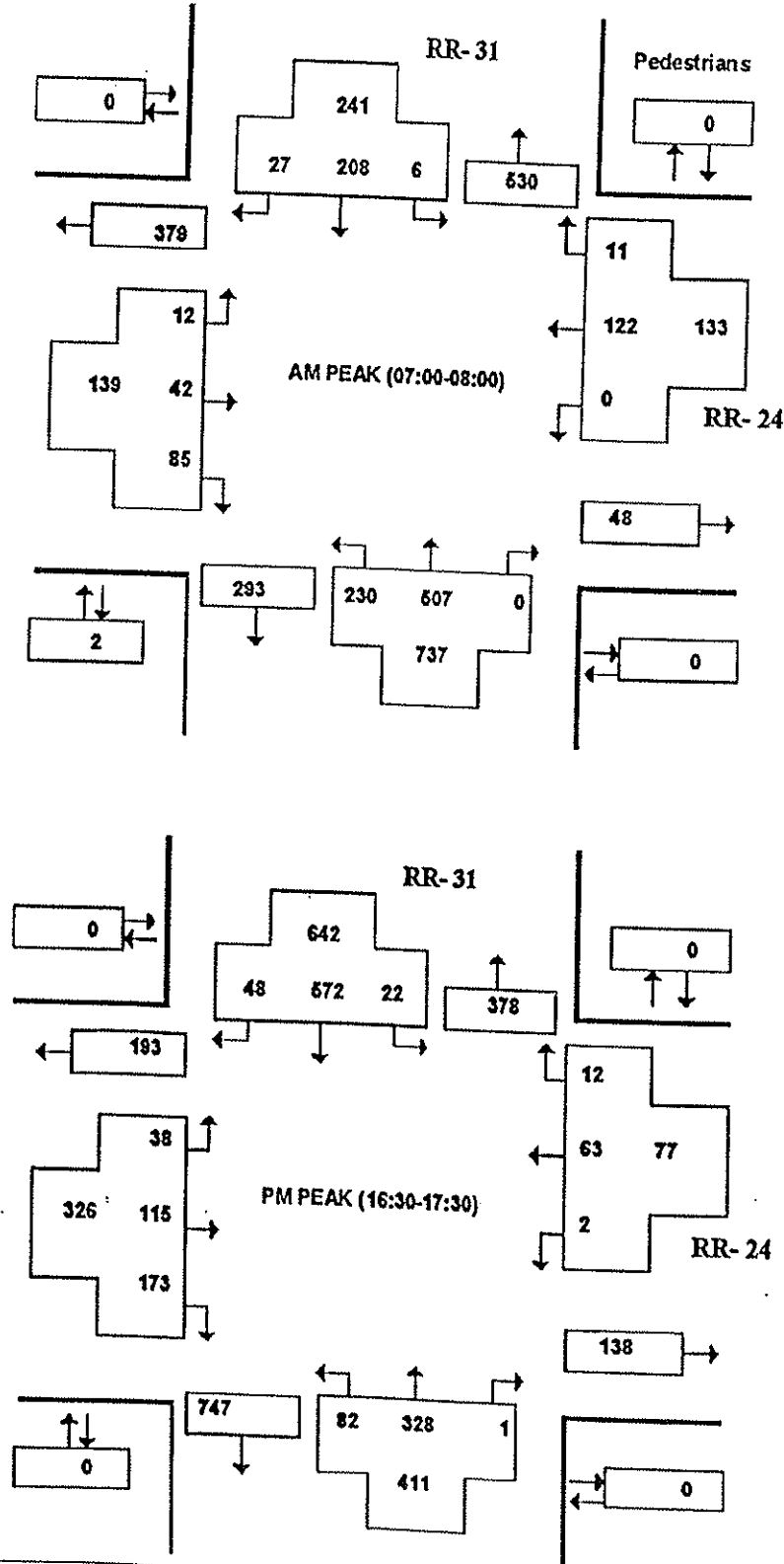
Count ID 1035

LESTER RD and BANK ST
(ULRS Listing RR-24 & RR-31)

Survey Date: Tuesday 7 August 2001
 Conditions: Dry
 Start Time: 0700

Total Observed U-Turns
 Northbound: 1 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Tuesday in August i
 0.9



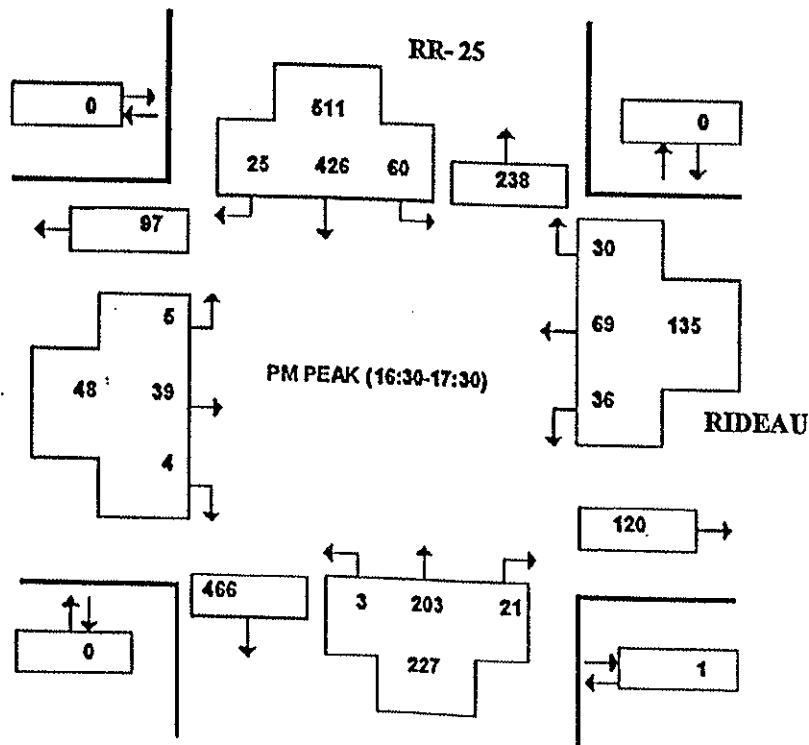
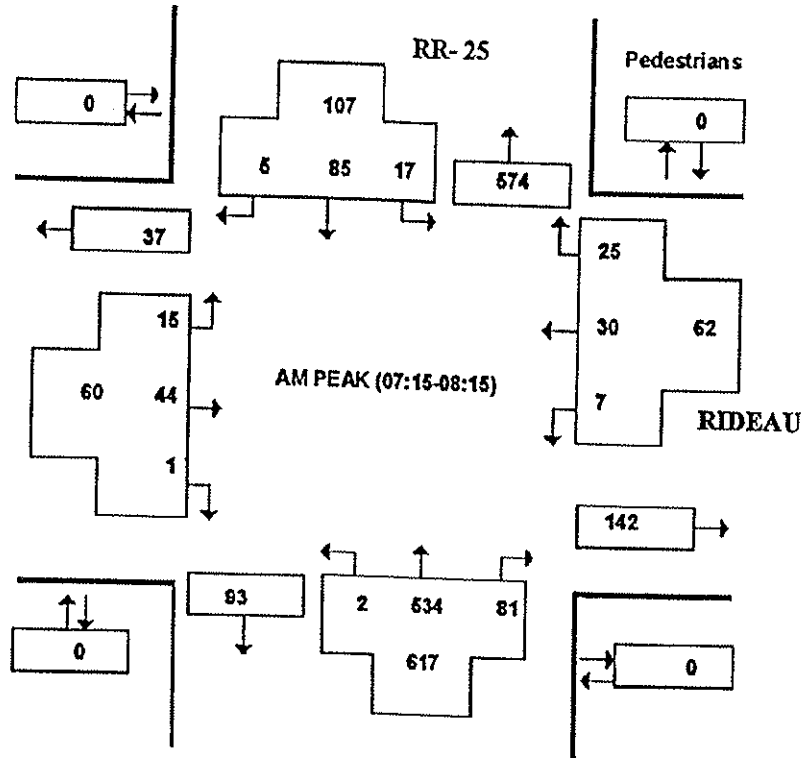


ALBION RD and RIDEAU RD
(ULRS Listing RR- 25 & RIDEAU)

Survey Date: Thursday 27 July 2000
 Conditions: Dry
 Start Time: 0700

Total Observed U-Turns
 Northbound: 1 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Thursday in July is 0.9



Traffic and Parking Operations

Automatic Traffic Recorder - Hourly Summary



Count Id: 15200

Location:	Albion Rd between 210 S Of High Rd and Rideau Rd	Start Date: 16 Aug 2002	Station:
Counter Placement:	imm. north of Rideau	Finish Date: 28 Aug 2002	Special Conditions:
Segment:	S17267B		
Comments:			

Directional Data

Time Period	19 Aug 2002		20 Aug 2002		21 Aug 2002		22 Aug 2002		23 Aug 2002		24 Aug 2002		25 Aug 2002		
	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		
	N/B	S/B	N/B	S/B	N/B	S/B	N/B	S/B	N/B	S/B	N/B	S/B	N/B	S/B	
00:00 - 01:00	19	63	10	58	16	91	18	79	25	102	48	100	50	120	
01:00 - 02:00	9	46	6	37	8	27	7	40	11	45	25	88	22	55	
02:00 - 03:00	7	19	4	29	3	43	9	33	9	31	17	60	19	68	
03:00 - 04:00	11	20	6	16	6	9	8	15	10	28	11	35	16	42	
04:00 - 05:00	19	11	23	10	20	6	16	10	16	7	12	6	22	13	
05:00 - 06:00	84	21	89	22	89	28	92	26	71	32	28	14	20	17	
06:00 - 07:00	395	100	400	82	416	92	370	97	374	81	61	41	40	30	
07:00 - 08:00	625	157	650	128	666	166	669	134	603	141	124	85	82	55	
08:00 - 09:00	473	135	480	153	504	129	558	157	440	144	190	125	131	90	
09:00 - 10:00	268	133	258	134	301	151	358	134	296	145	240	126	216	109	
10:00 - 11:00	221	157	220	139	248	167	261	160	254	184	223	192	257	169	
11:00 - 12:00	230	205	263	191	225	200	269	235	282	259	247	199	279	223	
12:00 - 13:00	259	226	230	212	259	206	239	307	273	246	251	201	270	235	
13:00 - 14:00	258	251	238	251	252	221	277	241	280	297	246	234	300	258	
14:00 - 15:00	235	252	274	277	238	297	259	284	253	337	257	251	299	253	
15:00 - 16:00	264	416	321	396	252	420	226	432	263	404	254	245	294	318	
16:00 - 17:00	305	554	288	628	303	587	308	558	310	552	214	278	292	266	
17:00 - 18:00	247	544	276	572	351	590	294	503	363	549	247	236	326	265	
18:00 - 19:00	175	380	234	374	295	369	291	324	356	326	241	244	305	232	
19:00 - 20:00	189	240	231	230	214	249	222	214	278	255	214	197	244	206	
20:00 - 21:00	160	277	176	299	154	260	147	249	265	261	182	184	187	216	
21:00 - 22:00	117	218	97	268	122	336	96	288	145	270	138	186	112	266	
22:00 - 23:00	78	136	66	187	84	219	64	223	107	331	95	172	64	226	
23:00 - 24:00	27	110	40	111	45	156	53	176	66	229	68	140	33	126	
Total	4675	4671	4880	4804	5071	5019	5111	4919	5350	5256	3633	3639	3880	3860	
AADT Factor	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.1	1.1	1.4	1.4	
AADT	4675	4671	4392	4324	4564	4517	4600	4427	4815	4730	3996	4003	5432	5400	
AADT Volumes are calculated by multiplying the complete 24 hour daily total by the AADT factor															
AM Peak Hour	07:15	07:15	07:15	07:45	07:00	07:00	07:00	08:00	07:00	08:00	08:00	08:00	08:00	08:00	08:00
Volume	632	164	655	153	666	166	669	157	603	144	190	125	131	9	
PM Peak Hour	15:45	16:30	15:30	16:30	16:30	16:30	16:30	16:15	16:30	16:30	15:45	16:00	16:30	15:30	15:30
Volume	314	595	317	666	350	611	332	567	326	598	249	278	316	31	
Peak Hours begin at the hour specified															
12 Hour Volume	3560	3410	3732	3455	3894	3503	4009	3469	3973	3584	2734	2416	3051	247	
12 hour volumes appear when there is a complete data set recorded between 07:00 and 19:00															

Traffic and Parking Operations Automatic Traffic Recorder - Hourly Summary



Count Id: 15209

Location:	Rideau Rd between Albion Rd and Bowesville Rd	Start Date: 16 Aug 2002	Station:
Counter Placement:	imm. west of Albion	Finish Date: 28 Aug 2002	Special Conditions:
Segment:	S9511		
Comments:			

Directional Data

Time Period	19 Aug 2002		20 Aug 2002		21 Aug 2002		22 Aug 2002		23 Aug 2002		24 Aug 2002		25 Aug 2002	
	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B
00:00 - 01:00	1	6	2	6	0	8	2	7	1	8	3	14	7	13
01:00 - 02:00	1	3	1	5	1	3	1	3	1	4	2	8	1	5
02:00 - 03:00	0	1	1	4	0	2	0	3	2	2	2	3	2	2
03:00 - 04:00	2	0	3	1	2	2	4	2	2	4	1	1	1	2
04:00 - 05:00	2	2	2	0	1	1	3	2	1	1	1	1	1	2
05:00 - 06:00	9	2	5	2	5	1	7	0	11	1	5	0	1	0
06:00 - 07:00	57	30	59	27	64	28	63	32	53	28	3	4	3	2
07:00 - 08:00	104	45	111	33	106	42	97	41	104	53	16	7	3	10
08:00 - 09:00	72	33	71	39	87	42	83	47	79	41	31	14	21	10
09:00 - 10:00	46	43	54	42	35	37	48	31	40	38	26	16	20	20
10:00 - 11:00	33	33	27	24	35	44	33	29	29	26	26	41	25	28
11:00 - 12:00	44	34	32	43	27	61	71	20	26	57	25	34	21	21
12:00 - 13:00	28	43	43	50	33	41	41	49	49	51	30	49	23	36
13:00 - 14:00	28	43	43	50	33	41	41	49	51	54	20	41	27	33
14:00 - 15:00	37	55	33	53	28	51	45	52	51	54	28	33	17	45
15:00 - 16:00	42	46	41	61	55	47	39	41	47	72	28	33	17	45
16:00 - 17:00	45	76	59	69	37	65	39	67	61	86	34	53	32	33
17:00 - 18:00	66	123	62	147	56	145	74	95	61	133	31	34	28	28
18:00 - 19:00	55	141	47	160	54	144	45	139	57	133	18	25	27	23
19:00 - 20:00	23	83	35	77	32	76	36	59	34	66	27	31	28	19
20:00 - 21:00	17	45	23	42	30	39	14	34	22	33	24	29	23	21
21:00 - 22:00	24	29	34	35	14	45	16	29	21	31	21	23	15	22
22:00 - 23:00	15	16	17	20	9	22	13	23	9	19	15	18	6	20
23:00 - 24:00	9	15	13	23	17	17	8	27	13	25	10	15	9	14
23:00 - 24:00	6	14	6	10	3	17	9	12	6	12	4	12	5	1
Total	738	918	781	973	731	980	791	844	780	978	403	506	346	416
AAADT Factor	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.1	1.1	1.4	1.
AAADT	738	918	703	876	658	882	712	760	702	880	443	557	484	58.
AAADT Volumes are calculated by multiplying the complete 24 hour daily total by the AAADT factor														
AM Peak Hour	07:00	07:15	07:00	07:45	07:30	07:15	07:00	07:45	07:15	07:00	08:00	07:30	08:00	07:00
Volume	104	50	111	44	113	45	97	49	108	53	31	15	21	10
PM Peak Hour	16:15	16:30	16:00	16:30	16:00	16:30	16:00	16:30	16:15	15:45	15:45	15:30	15:30	15:30
Volume	68	153	62	181	56	183	74	137	62	138	32	50	36	1
Peak Hours begin at the hour specified														
12 Hour Volume	595	755	615	798	585	795	651	670	638	810	312	378	272	306
12 hour volumes appear when there is a complete data set recorded between 07:00 and 19:00														

Traffic and Parking Operations Automatic Traffic Recorder - Hourly Summary



Count Id: 15208

Location: Rideau Rd between Albion Rd and Bank St	Start Date: 16 Aug 2002	Station:
Counter Placement: imm. east of Albion	Finish Date: 28 Aug 2002	Special Conditions:
Segment: S9579		
Comments:		

Directional Data

Time Period	19 Aug 2002		20 Aug 2002		21 Aug 2002		22 Aug 2002		23 Aug 2002		24 Aug 2002		25 Aug 2002	
	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B	E/B	W/B
00:00 - 01:00	6	5	11	6	10	12	6	6	18	14	15	17	18	16
01:00 - 02:00	6	5	9	7	4	4	4	2	10	4	11	9	9	11
02:00 - 03:00	1	0	4	3	12	3	4	5	2	3	10	8	12	8
03:00 - 04:00	5	2	5	2	2	5	3	3	9	4	10	2	8	1
04:00 - 05:00	7	3	9	4	6	3	8	3	8	4	2	2	3	5
05:00 - 06:00	29	13	21	10	26	15	23	14	28	7	11	2	5	2
06:00 - 07:00	122	72	115	58	138	81	127	63	111	67	8	7	12	9
07:00 - 08:00	181	74	178	86	182	90	167	93	167	104	23	22	11	10
08:00 - 09:00	123	65	114	75	141	94	122	82	118	69	39	28	24	32
09:00 - 10:00	67	71	68	59	75	87	74	67	71	78	25	48	25	49
10:00 - 11:00	59	53	56	60	80	66	58	58	64	53	35	45	35	55
11:00 - 12:00	67	50	57	73	62	99	72	70	67	98	48	55	34	43
12:00 - 13:00	56	83	79	80	75	78	89	76	76	91	45	64	43	50
13:00 - 14:00	75	75	80	90	73	74	61	99	95	87	43	68	45	41
14:00 - 15:00	86	72	86	91	94	87	97	76	94	104	52	52	44	70
15:00 - 16:00	96	111	125	121	87	104	95	84	115	125	51	73	64	55
16:00 - 17:00	136	163	145	172	149	158	128	160	151	165	59	51	59	81
17:00 - 18:00	114	177	124	183	108	181	92	171	106	168	46	42	42	69
18:00 - 19:00	43	80	67	103	72	107	64	96	65	113	46	56	48	63
19:00 - 20:00	31	54	50	71	49	60	39	59	44	53	29	42	57	57
20:00 - 21:00	50	48	70	50	50	66	45	38	38	49	47	34	41	32
21:00 - 22:00	32	27	48	24	69	29	53	36	29	39	30	29	63	29
22:00 - 23:00	21	16	25	35	54	18	41	22	55	20	26	20	45	17
23:00 - 24:00	14	11	14	11	19	5	35	13	32	17	28	16	26	8

Total	1427	1330	1560	1474	1637	1526	1507	1396	1573	1536	739	792	773	813
AADT Factor	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.1	1.1	1.4	1.4
AADT	1427	1330	1404	1327	1473	1373	1356	1256	1416	1382	813	871	1082	1138

AADT Volumes are calculated by multiplying the complete 24 hour daily total by the AADT factor

AM Peak Hour	07:00	07:00	07:00	07:15	07:00	07:30	07:00	07:45	07:00	07:00	08:00	08:00	08:00	08:00
Volume	181	74	178	88	182	107	167	97	167	104	39	28	24	32
PM Peak Hour	16:15	16:30	16:30	16:30	16:00	16:30	15:45	16:30	16:00	16:00	16:00	15:30	15:30	16:00
Volume	154	186	157	199	149	202	132	187	151	165	59	68	70	81

Peak Hours begin at the hour specified

12 Hour Volume	1103	1074	1179	1193	1198	1225	1119	1132	1189	1255	512	604	474	618
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12 hour volumes appear when there is a complete data set recorded between 07:00 and 19:00

APPENDIX B

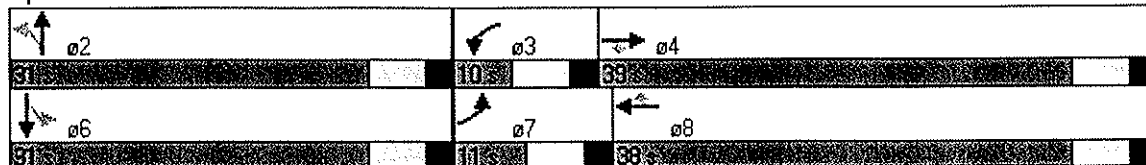
**CAPACITY ANALYSIS WORKSHEETS
FOR
EXISTING CONDITIONS**

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	3357	1502	1679	3357	1502	1695	1696	0	1695	1689	0
Flt Permitted	0.950			0.950			0.592			0.677		
Satd. Flow (perm)	1670	3357	1456	1675	3357	1452	1051	1696	0	1201	1689	0
Satd. Flow (RTOR)			151			171		29			32	
Volume (vph)	57	1048	142	47	636	161	85	83	35	237	118	55
Lane Group Flow (vph)	61	1115	151	50	677	171	90	125	0	252	185	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	11.0	39.0	39.0	10.0	38.0	38.0	31.0	31.0	0.0	31.0	31.0	0.0
Total Split (%)	14%	49%	49%	13%	48%	48%	39%	39%	0%	39%	39%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	7.0	43.8	43.8	6.0	41.0	41.0	22.2	22.2		22.2	22.2	
Actuated g/C Ratio	0.09	0.55	0.55	0.08	0.51	0.51	0.28	0.28		0.28	0.28	
v/c Ratio	0.41	0.61	0.17	0.40	0.39	0.21	0.31	0.25		0.75	0.38	
Uniform Delay, d1	35.5	13.9	0.0	36.8	12.6	0.0	22.8	17.0		26.4	19.0	
Delay	35.3	14.9	2.7	35.9	13.9	2.6	12.0	6.9		25.8	18.0	
LOS	D	B	A	D	B	A	B	A		C	B	
Approach Delay		14.4			13.0			9.1			22.5	
Approach LOS		B			B			A			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 49 (61%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 14.8
 Intersection Capacity Utilization 72.6%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 14: Bank & Albion



CCE PM Existing
3: Lester & Albion

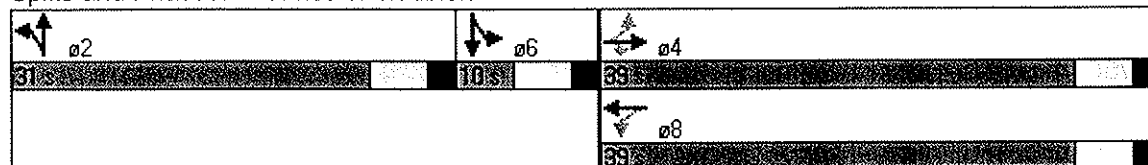
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1662	1750	1488	1601	1668	0	1679	1502	0	1647	1473	0
Flt Permitted	0.606			0.380			0.950			0.950		
Satd. Flow (perm)	1060	1750	1488	640	1668	0	1679	1502	0	1647	1473	0
Satd. Flow (RTOR)			663		6			371			474	
Volume (vph)	126	402	643	141	178	13	363	0	80	18	0	80
Lane Group Flow (vph)	130	414	663	145	197	0	374	82	0	19	82	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8			2	2		6	6	
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	0.0	31.0	31.0	0.0	10.0	10.0	0.0
Total Split (%)	49%	49%	49%	49%	49%	0%	39%	39%	0%	13%	13%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Coord	Coord	Coord	Coord	Coord		None	None		None	None	
Act Effct Green (s)	41.0	41.0	41.0	41.0	41.0		23.1	23.1		6.0	6.0	
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51		0.29	0.29		0.08	0.08	
v/c Ratio	0.24	0.46	0.61	0.44	0.23		0.77	0.12		0.15	0.15	
Uniform Delay, d1	11.6	13.3	0.0	13.1	11.1		26.0	0.0		35.4	0.0	
Delay	13.7	14.9	1.5	14.6	11.3		25.7	0.0		35.9	0.0	
LOS	B	B	A	B	B		C	A		D	A	
Approach Delay		7.4			12.7			21.1			6.8	
Approach LOS		A			B			C			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 37 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 11.2
 Intersection Capacity Utilization 70.1%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 3: Lester & Albion



CCE PM Existing
6: Lester & Bank

07/07/2004

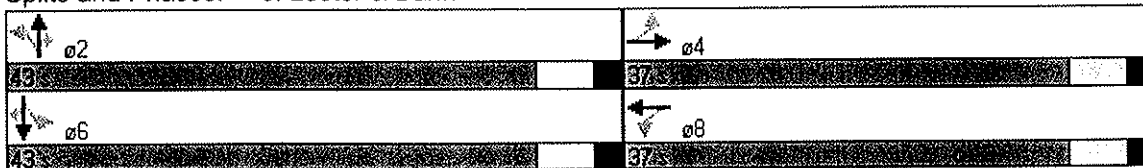
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1608	0	1679	1723	0	1679	3357	1502	1679	3357	1502
Flt Permitted	0.702			0.460			0.276			0.456		
Satd. Flow (perm)	1240	1608	0	813	1723	0	488	3357	1502	806	3357	1502
Satd. Flow (RTOR)		115			14				1			159
Volume (vph)	100	122	183	2	67	13	87	440	1	23	753	151
Lane Group Flow (vph)	105	321	0	2	85	0	92	463	1	24	793	159
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	37.0	37.0	0.0	37.0	37.0	0.0	43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	46%	46%	0%	46%	46%	0%	54%	54%	54%	54%	54%	54%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effect Green (s)	19.7	19.7		19.7	19.7		52.3	52.3	52.3	52.3	52.3	52.3
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.65	0.65	0.65	0.65	0.65	0.65
v/c Ratio	0.34	0.66		0.01	0.20		0.29	0.21	0.00	0.05	0.36	0.15
Uniform Delay, d1	24.8	16.9		23.0	19.8		5.9	5.6	0.0	4.9	6.3	0.0
Delay	25.2	17.6		17.0	17.4		7.4	4.6	5.0	8.2	7.9	1.9
LOS	C	B		B	B		A	A	A	A	A	A
Approach Delay		19.5			17.3			5.1			6.9	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 9.5
 Intersection Capacity Utilization 58.1%

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Lester & Bank



CCE PM Existing
4: Leitrim & Albion

07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1584	0	1695	1572	0	1695	1736	0	1695	1765	0
Flt Permitted	0.719			0.711			0.137			0.378		
Satd. Flow (perm)	1283	1584	0	1269	1572	0	244	1736	0	674	1765	0
Satd. Flow (RTOR)		53			47			28			10	
Volume (vph)	71	16	48	127	11	42	32	371	80	32	689	53
Lane Group Flow (vph)	79	71	0	141	59	0	36	501	0	36	825	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	40%	40%	0%	40%	40%	0%	60%	60%	0%	60%	60%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	13.4	13.4		13.5	13.5		41.7	41.7		41.7	41.7	
Actuated g/C Ratio	0.22	0.22		0.23	0.23		0.70	0.70		0.70	0.70	
v/c Ratio	0.28	0.18		0.49	0.15		0.21	0.41		0.08	0.67	
Uniform Delay, d1	20.2	4.9		21.3	3.9		4.0	4.5		3.6	6.3	
Delay	17.7	7.5		19.3	7.2		4.8	3.7		5.7	12.2	
LOS	B	A		B	A		A	A		A	B	
Approach Delay		12.9			15.7			3.8			11.9	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 67.9%
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 4: Leitrim & Albion

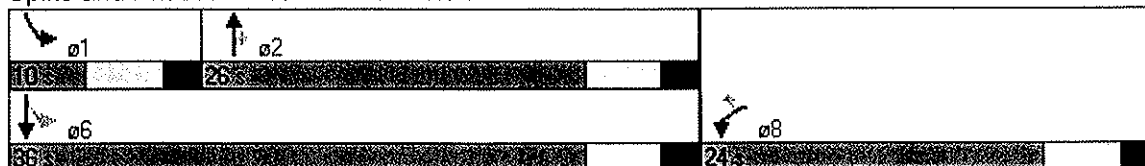
02	04
35s	24s
06	08
36s	24s

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.448	
Satd. Flow (perm)	1695	1517	1784	1517	799	1784
Satd. Flow (RTOR)		137		44		
Volume (vph)	43	123	237	40	130	704
Lane Group Flow (vph)	48	137	263	44	144	782
Turn Type		Perm		Perm	pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	10.0	24.0
Total Split (s)	24.0	24.0	26.0	26.0	10.0	36.0
Total Split (%)	40%	40%	43%	43%	17%	60%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Coord	Coord	None	Coord
Act Effct Green (s)	9.2	9.2	37.9	37.9	45.0	45.9
Actuated g/C Ratio	0.15	0.15	0.63	0.63	0.75	0.77
v/c Ratio	0.18	0.39	0.23	0.05	0.21	0.57
Uniform Delay, d1	23.1	0.0	6.2	0.0	2.3	3.8
Delay	21.5	5.1	7.6	3.4	4.6	7.7
LOS	C	A	A	A	A	A
Approach Delay	9.4		7.0			7.2
Approach LOS	A		A			A

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 7.4
 Intersection Capacity Utilization 53.5%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 19: RCR & Albion



CCE PM Existing
12: Rideau & Albion

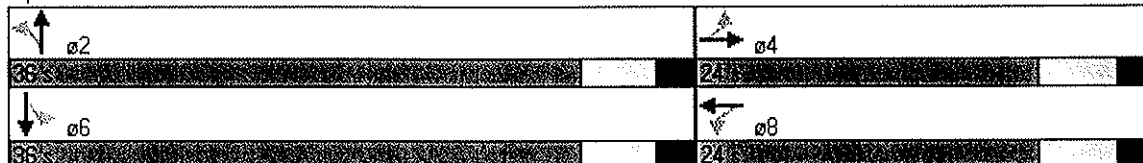
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1742	0	1679	1696	0	1679	1744	0	1679	1753	0
Flt Permitted	0.649			0.709			0.246			0.522		
Satd. Flow (perm)	1147	1742	0	1253	1696	0	435	1744	0	922	1753	0
Satd. Flow (RTOR)		7			32			12			7	
Volume (vph)	7	64	7	53	117	42	5	286	27	71	604	35
Lane Group Flow (vph)	7	74	0	56	167	0	5	329	0	75	673	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	40%	40%	0%	40%	40%	0%	60%	60%	0%	60%	60%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	11.8	11.8		11.8	11.8		43.3	43.3		43.3	43.3	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.72	0.72		0.72	0.72	
v/c Ratio	0.03	0.21		0.23	0.46		0.02	0.26		0.11	0.53	
Uniform Delay, d1	20.4	19.0		21.2	17.8		3.0	3.4		3.2	4.7	
Delay	17.3	17.4		19.0	16.3		4.6	4.5		6.9	10.6	
LOS	B	B		B	B		A	A		A	B	
Approach Delay		17.4			17.0			4.5			10.2	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 60.7%
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 12: Rideau & Albion

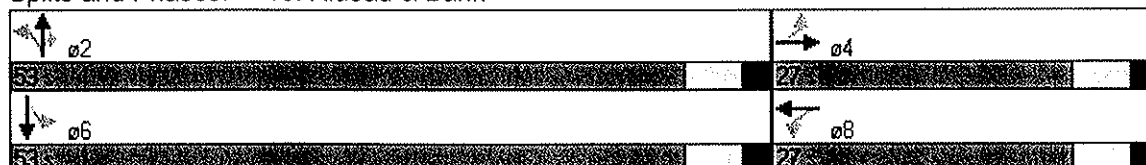


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1585	0	1679	1659	0	0	1762	1502	1679	1755	0
Flt Permitted	0.549			0.598				0.746		0.419		
Satd. Flow (perm)	970	1585	0	1057	1659	0	0	1318	1502	740	1755	0
Satd. Flow (RTOR)		115			44				91		5	
Volume (vph)	28	50	109	231	111	77	27	426	86	34	865	40
Lane Group Flow (vph)	29	168	0	243	198	0	0	476	91	36	953	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	53.0	53.0	53.0	53.0	53.0	0.0
Total Split (%)	34%	34%	0%	34%	34%	0%	66%	66%	66%	66%	66%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	
Act Effct Green (s)	21.7	21.7		21.7	21.7			50.3	50.3	50.3	50.3	
Actuated g/C Ratio	0.27	0.27		0.27	0.27			0.63	0.63	0.63	0.63	
v/c Ratio	0.11	0.33		0.85	0.41			0.57	0.09	0.08	0.86	
Uniform Delay, d1	21.9	6.9		27.6	18.3			8.6	0.0	5.8	12.0	
Delay	21.5	8.5		37.8	18.2			9.7	1.6	10.1	25.4	
LOS	C	A		D	B			A	A	B	C	
Approach Delay		10.4			29.0			8.4			24.9	
Approach LOS		B			C			A			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 20.1
 Intersection Capacity Utilization 87.9%
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 13: Rideau & Bank



CCE Saturday Existing
14: Bank & Albion

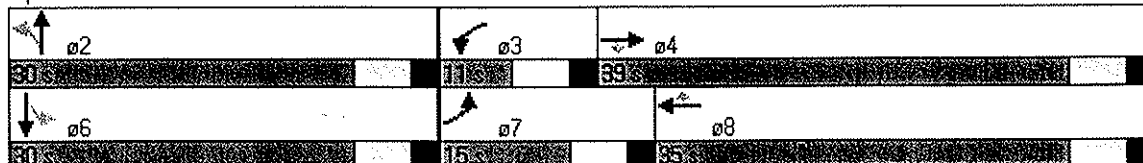
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	1669	0	1695	1675	0
Flt Permitted	0.950			0.950			0.577			0.625		
Satd. Flow (perm)	1689	3390	1470	1690	3390	1467	1025	1669	0	1109	1675	0
Satd. Flow (RTOR)			120			194		41			39	
Volume (vph)	88	901	118	32	876	190	134	96	60	185	119	70
Lane Group Flow (vph)	90	919	120	33	894	194	137	159	0	189	192	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	15.0	39.0	39.0	11.0	35.0	35.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	19%	49%	49%	14%	44%	44%	38%	38%	0%	38%	38%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	10.2	45.2	45.2	7.0	40.0	40.0	20.2	20.2		20.2	20.2	
Actuated g/C Ratio	0.13	0.57	0.57	0.09	0.50	0.50	0.25	0.25		0.25	0.25	
v/c Ratio	0.42	0.48	0.14	0.22	0.53	0.23	0.53	0.35		0.68	0.43	
Uniform Delay, d1	33.2	11.9	0.0	35.8	14.4	0.0	25.8	17.9		26.9	19.6	
Delay	32.3	13.0	3.0	34.5	16.3	2.8	18.5	11.5		26.0	18.4	
LOS	C	B	A	C	B	A	B	B		C	B	
Approach Delay		13.5			14.5			14.7			22.2	
Approach LOS		B			B			B			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 44 (55%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 66.1%
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 14: Bank & Albion



CCE Saturday Existing
3: Lester & Albion

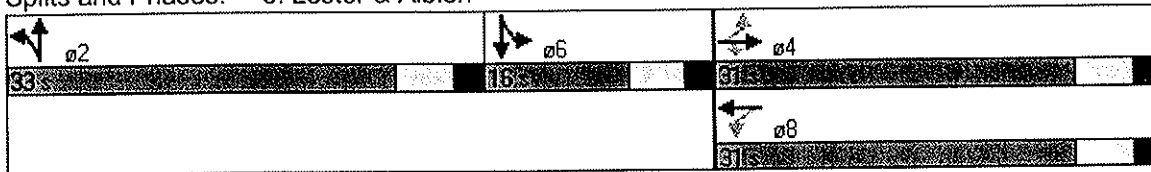
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1784	1517	1695	1749	0	1695	1517	0	1695	1517	0
Flt Permitted	0.684			0.705			0.950			0.950		
Satd. Flow (perm)	1220	1784	1517	1258	1749	0	1695	1517	0	1695	1517	0
Satd. Flow (RTOR)			348		10			849			555	
Volume (vph)	57	74	320	100	90	14	277	0	75	15	0	68
Lane Group Flow (vph)	62	80	348	109	113	0	301	82	0	16	74	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	0.0	33.0	33.0	0.0	16.0	16.0	0.0
Total Split (%)	39%	39%	39%	39%	39%	0%	41%	41%	0%	20%	20%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Coord	Coord		None	None	
Act Effct Green (s)	13.0	13.0	13.0	13.0	13.0		49.0	49.0		8.4	8.4	
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.61	0.61		0.11	0.11	
v/c Ratio	0.31	0.28	0.65	0.53	0.39		0.29	0.07		0.09	0.11	
Uniform Delay, d1	29.5	29.4	0.0	30.7	27.2		7.9	0.0		33.4	0.0	
Delay	28.2	28.0	3.6	32.5	28.6		9.4	0.0		42.9	0.0	
LOS	C	C	A	C	C		A	A		D	A	
Approach Delay		10.7			30.5			7.4			7.6	
Approach LOS		B			C			A			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 13.1
 Intersection Capacity Utilization 44.0%
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 3: Lester & Albion



CCE Saturday Existing
6: Lester & Bank

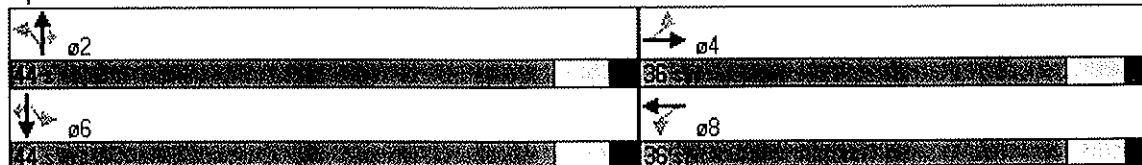
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1624	0	1695	1743	0	1695	3390	1517	1695	3390	1517
Fit Permitted	0.736			0.674			0.299			0.469		
Satd. Flow (perm)	1313	1624	0	1203	1743	0	534	3390	1517	837	3390	1517
Satd. Flow (RTOR)		77			5				1			126
Volume (vph)	76	49	73	1	27	5	83	424	1	22	716	120
Lane Group Flow (vph)	80	129	0	1	33	0	87	446	1	23	754	126
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	36.0	36.0	0.0	36.0	36.0	0.0	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	45%	45%	0%	45%	45%	0%	55%	55%	55%	55%	55%	55%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effct Green (s)	11.4	11.4		11.4	11.4		63.7	63.7	63.7	63.7	63.7	63.7
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.80	0.80	0.80	0.80	0.80	0.80
v/c Ratio	0.43	0.43		0.01	0.13		0.20	0.17	0.00	0.03	0.28	0.10
Uniform Delay, d1	32.3	12.7		30.0	26.2		2.5	2.4	0.0	2.1	2.7	0.0
Delay	39.3	23.2		26.0	24.6		2.0	1.4	1.0	3.5	3.3	0.8
LOS	D	C		C	C		A	A	A	A	A	A
Approach Delay		29.4			24.7			1.5			2.9	
Approach LOS		C			C			A			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 48.4%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Lester & Bank



CCE Saturday Existing
4: Leitrim & Albion

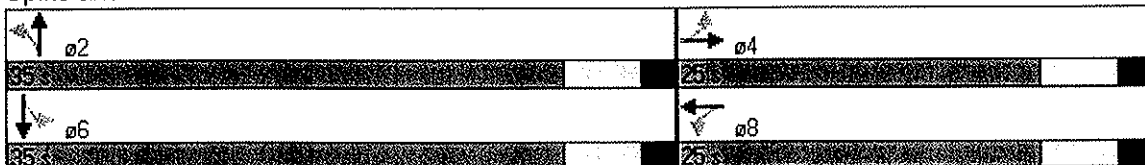
07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1572	0	1695	1584	0	1695	1734	0	1695	1765	0
Flt Permitted	0.742			0.738			0.312			0.532		
Satd. Flow (perm)	1324	1572	0	1317	1584	0	557	1734	0	949	1765	0
Satd. Flow (RTOR)		23			18			29			10	
Volume (vph)	27	5	21	48	5	16	21	228	53	21	477	37
Lane Group Flow (vph)	30	29	0	53	24	0	23	312	0	23	571	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	42%	42%	0%	42%	42%	0%	58%	58%	0%	58%	58%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	9.6	9.6		9.6	9.6		48.6	48.6		48.6	48.6	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.81	0.81		0.81	0.81	
v/c Ratio	0.14	0.11		0.25	0.09		0.05	0.22		0.03	0.40	
Uniform Delay, d1	23.7	4.8		24.1	5.8		2.0	2.1		2.0	2.8	
Delay	20.8	11.0		21.4	12.0		2.9	2.2		3.3	3.6	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		16.0			18.5			2.3			3.6	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 4.9
 Intersection Capacity Utilization 42.1%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 4: Leitrim & Albion

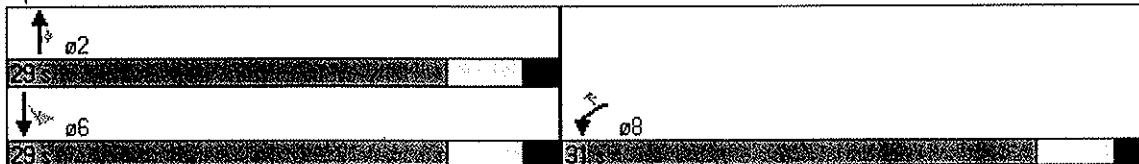


	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.606	
Satd. Flow (perm)	1695	1517	1784	1517	1081	1784
Satd. Flow (RTOR)		111		30		
Volume (vph)	39	100	193	27	167	263
Lane Group Flow (vph)	43	111	214	30	186	292
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	31.0	31.0	29.0	29.0	29.0	29.0
Total Split (%)	52%	52%	48%	48%	48%	48%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Coord	Coord	Coord	Coord
Act Effct Green (s)	8.9	8.9	46.2	46.2	46.2	46.2
Actuated g/C Ratio	0.15	0.15	0.77	0.77	0.77	0.77
v/c Ratio	0.17	0.35	0.16	0.03	0.22	0.21
Uniform Delay, d1	23.3	0.0	2.4	0.0	2.5	2.5
Delay	21.8	5.8	2.7	1.2	3.0	2.8
LOS	C	A	A	A	A	A
Approach Delay	10.3		2.5			2.9
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 4.1
 Intersection Capacity Utilization 36.1%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 19: RCR & Albion

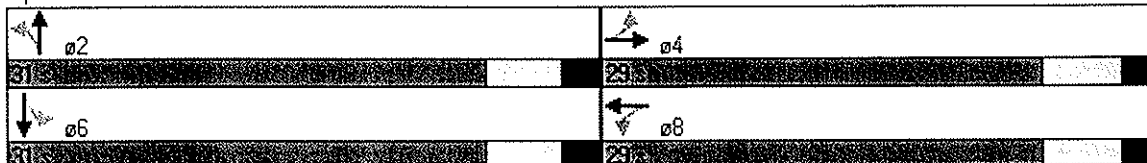


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1756	0	1695	1713	0	1695	1761	0	1695	1770	0
Flt Permitted	0.713			0.738			0.417			0.631		
Satd. Flow (perm)	1272	1756	0	1317	1713	0	744	1761	0	1126	1770	0
Satd. Flow (RTOR)		3			18			10			6	
Volume (vph)	3	25	3	21	47	17	3	172	16	42	363	21
Lane Group Flow (vph)	3	29	0	22	67	0	3	198	0	44	404	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	31.0	31.0	0.0	31.0	31.0	0.0
Total Split (%)	48%	48%	0%	48%	48%	0%	52%	52%	0%	52%	52%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	9.0	9.0		9.0	9.0		49.2	49.2		49.2	49.2	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.82	0.82		0.82	0.82	
v/c Ratio	0.02	0.11		0.11	0.24		0.00	0.14		0.05	0.28	
Uniform Delay, d1	23.7	21.4		24.0	17.7		1.7	1.9		1.9	2.3	
Delay	20.3	19.7		21.3	17.3		3.0	2.5		4.2	4.4	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		19.8			18.3			2.5			4.3	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 6.1
 Intersection Capacity Utilization 33.2%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 12: Rideau & Albion



CCE Saturday Existing
13: Rideau & Bank

07/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1601	0	1695	1675	0	0	1779	1517	1695	1772	0
Flt Permitted	0.702			0.711				0.838		0.432		
Satd. Flow (perm)	1253	1601	0	1269	1675	0	0	1495	1517	771	1772	0
Satd. Flow (RTOR)		48			34				91		6	
Volume (vph)	11	20	43	92	45	31	25	405	82	32	822	38
Lane Group Flow (vph)	12	70	0	102	84	0	0	478	91	36	955	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	56.0	56.0	56.0	56.0	56.0	0.0
Total Split (%)	30%	30%	0%	30%	30%	0%	70%	70%	70%	70%	70%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	
Act Effct Green (s)	13.3	13.3		13.4	13.4		61.8	61.8	61.8	61.8	61.8	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.77	0.77	0.77	0.77	0.77	
v/c Ratio	0.06	0.23		0.48	0.27		0.41	0.08	0.06	0.06	0.70	
Uniform Delay, d1	29.0	9.1		31.2	17.6		3.7	0.0	2.7	5.5		
Delay	25.5	12.3		29.1	17.8		4.9	1.1	3.9	11.6		
LOS	C	B		C	B		A	A	A	B		
Approach Delay		14.2			24.0		4.3			11.4		
Approach LOS		B			C		A			B		

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 73.7%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 13: Rideau & Bank

02	04
58	24
58	24
58	24
58	24
58	24

APPENDIX C
HISTORIC BACKGROUND TRAFFIC GROWTH

Historic Traffic Growth

<i>Albion / Rideau</i> (entering intersection)	Year	AM Peak	PM Peak
	2002	1045	1245
	2000	846	921
	1996	960	997
Regression Estimate	1996	923	945
Regression Estimate	2002	972	1142
Average Annual Change		0.86%	3.19%

Albion south of Lester
(northbound + southbound)

Year	PM	
2002	920	minus RCR
2000	624	minus RCR
1999	749	
1998	824	
1997	713	
1996	717	
1995	763	
1995	715	
2002	812	
	1.83%	

Blossom Park Albion Road Traffic Growth Summary

Albion North of Lester (2 Way Traffic)				
Year	AM Peak	PM Peak	8 Hour Total	
2002	520	754	4440	
2000	317	473	2934	
1999	292	420	2363	
1998	537	738	3993	
1997	466	643	3891	
1996	489	590	3527	
1995	450	682	3770	
Resultant Growth or Decline Average, per Annum	-1%	0%	0%	0%

Albion North of Bank (2 Way Traffic)				
Year	AM Peak	PM Peak	8 Hour Total	
2002	569	836	5330	
2000	530	906	5254	
1998	454	828	4679	
1997	488	767	4836	
Resultant Growth or Decline Average, per Annum	4%	2%	3%	3%

Albion South of Lester (2 Way Traffic)				
Year	AM Peak	PM Peak	8 Hour Total	
2002	926	1170	6769	
2000	676	874	4820	
1999	752	749	4613	
1998	689	824	4468	
1997	682	713	4471	
1996	676	717	4225	
1995	649	763	4188	
Resultant Growth or Decline Average, per Annum	4%	7%	7%	7%

Albion South of Bank (2 Way Traffic)				
Year	AM Peak	PM Peak	8 Hour Total	
2002	765	999	6074	
2000	549	991	5315	
1998	661	987	5704	
1997	683	998	5918	
Resultant Growth or Decline Average, per Annum	2%	0%	0%	0%

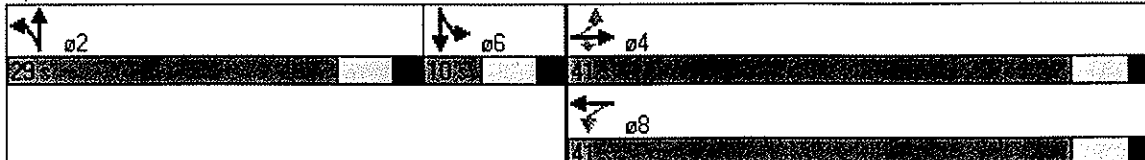
APPENDIX D
CAPACITY ANALYSIS WORKSHEETS
FOR
PROJECTED CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1662	1750	1488	1601	1668	0	1679	1502	0	1647	1473	0
Flt Permitted	0.612			0.396			0.950			0.950		
Satd. Flow (perm)	1071	1750	1488	667	1668	0	1679	1502	0	1647	1473	0
Satd. Flow (RTOR)			787		6			388			480	
Volume (vph)	126	402	763	200	178	13	380	0	87	18	0	80
Lane Group Flow (vph)	130	414	787	206	197	0	392	90	0	19	82	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	41.0	41.0	41.0	41.0	41.0	0.0	29.0	29.0	0.0	10.0	10.0	0.0
Total Split (%)	51%	51%	51%	51%	51%	0%	36%	36%	0%	13%	13%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Coord	Coord	Coord	Coord	Coord		None	None		None	None	
Act Effct Green (s)	41.6	41.6	41.6	41.6	41.6		22.4	22.4		6.0	6.0	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52		0.28	0.28		0.08	0.08	
v/c Ratio	0.23	0.46	0.68	0.60	0.23		0.83	0.13		0.15	0.15	
Uniform Delay, d1	11.1	12.8	0.0	14.2	10.7		27.0	0.0		35.4	0.0	
Delay	13.0	14.2	1.4	18.5	10.8		34.7	0.0		36.2	0.0	
LOS	B	B	A	B	B		C	A		D	A	
Approach Delay		6.5			14.7			28.2			6.8	
Approach LOS		A			B			C			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 37 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 78.9%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 3: Lester & Albion

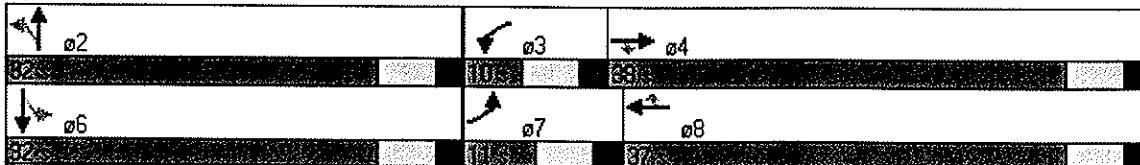


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	3357	1502	1679	3357	1502	1695	1696	0	1695	1689	0
Flt Permitted	0.950			0.950			0.596			0.677		
Satd. Flow (perm)	1670	3357	1456	1675	3357	1452	1058	1696	0	1201	1689	0
Satd. Flow (RTOR)			151			180		29			32	
Volume (vph)	57	1108	142	47	643	169	85	83	35	297	118	55
Lane Group Flow (vph)	61	1179	151	50	684	180	90	125	0	316	185	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	11.0	38.0	38.0	10.0	37.0	37.0	32.0	32.0	0.0	32.0	32.0	0.0
Total Split (%)	14%	48%	48%	13%	46%	46%	40%	40%	0%	40%	40%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	7.0	40.8	40.8	6.0	38.0	38.0	25.2	25.2		25.2	25.2	
Actuated g/C Ratio	0.09	0.51	0.51	0.08	0.48	0.48	0.32	0.32		0.32	0.32	
v/c Ratio	0.41	0.69	0.19	0.40	0.43	0.23	0.27	0.23		0.83	0.33	
Uniform Delay, d1	35.5	16.7	0.0	36.8	14.6	0.0	20.5	15.3		25.4	17.1	
Delay	35.3	18.2	2.8	35.9	15.7	2.7	10.8	6.1		29.5	16.5	
LOS	D	B	A	D	B	A	B	A		C	B	
Approach Delay		17.3			14.2			8.1			24.7	
Approach LOS		B			B			A			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 49 (61%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 78.2%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 14: Bank & Albion



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1608	0	1679	1723	0	1679	3357	1502	1679	3357	1502
Flt Permitted	0.702			0.445			0.258			0.455		
Satd. Flow (perm)	1240	1608	0	786	1723	0	456	3357	1502	804	3357	1502
Satd. Flow (RTOR)		111			14				1			222
Volume (vph)	107	122	183	2	67	13	87	448	1	23	813	211
Lane Group Flow (vph)	113	321	0	2	85	0	92	472	1	24	856	222
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	44%	44%	0%	44%	44%	0%	56%	56%	56%	56%	56%	56%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effct Green (s)	21.1	21.1		21.1	21.1		50.9	50.9	50.9	50.9	50.9	50.9
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.35	0.63		0.01	0.18		0.32	0.22	0.00	0.05	0.40	0.21
Uniform Delay, d1	23.9	16.5		21.5	18.9		6.6	6.1	0.0	5.5	7.1	0.0
Delay	19.5	13.0		16.0	16.3		9.3	5.7	5.0	8.8	8.9	1.7
LOS	B	B		B	B		A	A	A	A	A	A
Approach Delay		14.7			16.3			6.3			7.4	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 8.9
 Intersection Capacity Utilization 59.9%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Lester & Bank

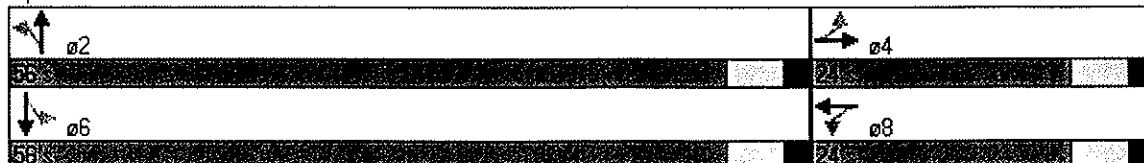


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1584	0	1695	1572	0	1695	1736	0	1695	1768	0
Flt Permitted	0.719			0.711			0.107			0.395		
Satd. Flow (perm)	1283	1584	0	1269	1572	0	191	1736	0	705	1768	0
Satd. Flow (RTOR)		53			47			29			8	
Volume (vph)	71	16	48	187	11	42	32	393	88	32	869	53
Lane Group Flow (vph)	79	71	0	208	59	0	36	535	0	36	1025	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	56.0	56.0	0.0	56.0	56.0	0.0
Total Split (%)	30%	30%	0%	30%	30%	0%	70%	70%	0%	70%	70%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	17.9	17.9		17.9	17.9		54.1	54.1		54.1	54.1	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.68	0.68		0.68	0.68	
v/c Ratio	0.28	0.18		0.73	0.15		0.28	0.45		0.08	0.85	
Uniform Delay, d1	25.7	6.2		28.8	4.9		5.2	5.6		4.4	9.8	
Delay	25.0	10.3		30.6	10.0		7.5	6.3		7.3	20.6	
LOS	C	B		C	A		A	A		A	C	
Approach Delay		18.1			26.0			6.4			20.2	
Approach LOS		B			C			A			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0'(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 82.9%
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 4: Leitrim & Albion

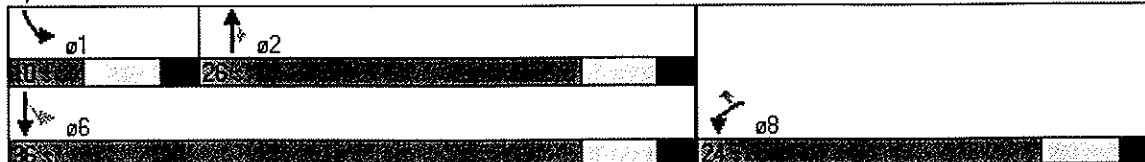


	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.412	
Satd. Flow (perm)	1695	1517	1784	1517	735	1784
Satd. Flow (RTOR)		137		42		
Volume (vph)	43	123	267	40	130	944
Lane Group Flow (vph)	48	137	297	44	144	1049
Turn Type		Perm		Perm	pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	10.0	24.0
Total Split (s)	24.0	24.0	26.0	26.0	10.0	36.0
Total Split (%)	40%	40%	43%	43%	17%	60%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Coord	Coord	None	Coord
Act Effct Green (s)	9.2	9.2	37.9	37.9	45.0	45.9
Actuated g/C Ratio	0.15	0.15	0.63	0.63	0.75	0.77
v/c Ratio	0.18	0.39	0.26	0.05	0.22	0.77
Uniform Delay, d1	23.1	0.0	6.4	0.2	2.3	5.2
Delay	21.5	5.1	8.7	4.0	3.0	11.2
LOS	C	A	A	A	A	B
Approach Delay	9.4		8.1			10.2
Approach LOS	A		A			B

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0,(0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 9.7
 Intersection Capacity Utilization 68.3%
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 19: RCR & Albion

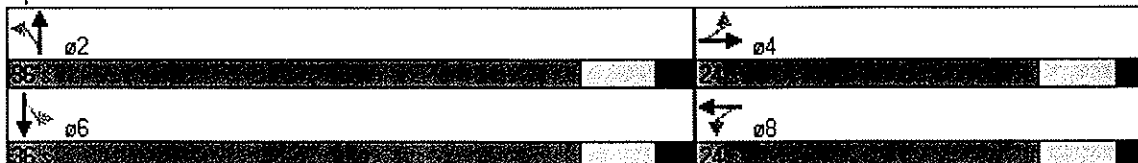


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1742	0	1679	1624	0	1679	1748	0	1679	1748	0
Flt Permitted	0.505			0.709			0.233			0.478		
Satd. Flow (perm)	892	1742	0	1253	1624	0	412	1748	0	845	1748	0
Satd. Flow (RTOR)		7			106			10			10	
Volume (vph)	103	64	7	53	117	138	5	334	27	83	610	47
Lane Group Flow (vph)	108	74	0	56	268	0	5	380	0	87	691	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	40%	40%	0%	40%	40%	0%	60%	60%	0%	60%	60%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	13.9	13.9		13.9	13.9		38.1	38.1		38.1	38.1	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.64	0.64		0.64	0.64	
v/c Ratio	0.52	0.18		0.19	0.59		0.02	0.34		0.16	0.62	
Uniform Delay, d1	20.1	16.7		18.5	12.0		4.0	4.9		4.4	6.5	
Delay	18.9	15.2		16.6	11.2		6.0	6.2		8.0	12.6	
LOS	B	B		B	B		A	A		A	B	
Approach Delay		17.4			12.1			6.2			12.1	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 11.3
 Intersection Capacity Utilization 78.1%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 12: Rideau & Albion



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1597	0	1679	1695	0	0	1762	1502	1679	1755	0
Flt Permitted	0.393			0.578				0.746		0.419		
Satd. Flow (perm)	694	1597	0	1021	1695	0	0	1318	1502	740	1755	0
Satd. Flow (RTOR)		112			23				91		5	
Volume (vph)	28	62	109	231	207	77	27	426	86	34	865	40
Lane Group Flow (vph)	29	180	0	243	299	0	0	476	91	36	953	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	53.0	53.0	53.0	53.0	53.0	0.0
Total Split (%)	34%	34%	0%	34%	34%	0%	66%	66%	66%	66%	66%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	
Act Effct Green (s)	22.0	22.0		22.0	22.0		50.1	50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.63	0.63	0.63	0.63	0.63	
v/c Ratio	0.15	0.35		0.87	0.62		0.58	0.09	0.08	0.08	0.87	
Uniform Delay, d1	22.0	8.3		27.7	23.3		8.7	0.0	5.9	12.1		
Delay	22.1	9.6		41.0	23.5		9.7	1.6	10.9	26.5		
LOS	C	A		D	C		A	A	B	C		
Approach Delay		11.3			31.4			8.4			25.9	
Approach LOS		B			C			A			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

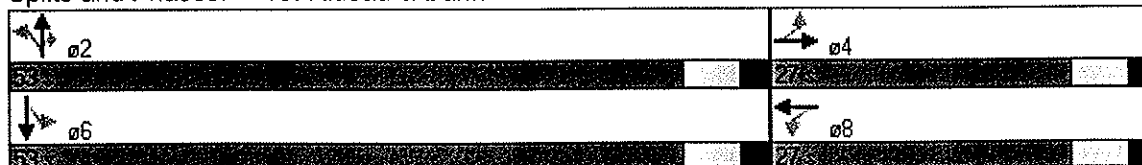
Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 88.6%

ICU Level of Service D

Splits and Phases: 13: Rideau & Bank

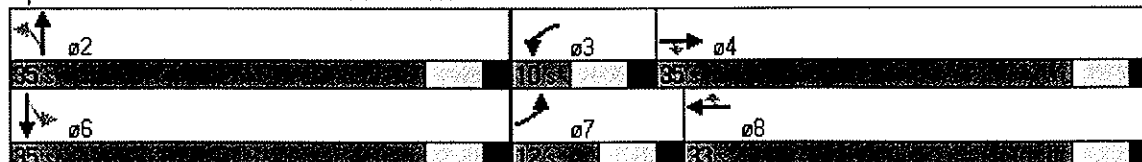


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	1669	0	1695	1675	0
Flt Permitted	0.950			0.950			0.599			0.640		
Satd. Flow (perm)	1689	3390	1470	1691	3390	1467	1064	1669	0	1136	1675	0
Satd. Flow (RTOR)			120			209		46			43	
Volume (vph)	88	1020	118	32	889	205	134	96	60	305	119	70
Lane Group Flow (vph)	90	1041	120	33	907	209	137	159	0	311	192	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	12.0	35.0	35.0	10.0	33.0	33.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	15%	44%	44%	13%	41%	41%	44%	44%	0%	44%	44%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	7.9	39.6	39.6	6.0	36.0	36.0	26.4	26.4		26.4	26.4	
Actuated g/C Ratio	0.10	0.50	0.50	0.08	0.45	0.45	0.33	0.33		0.33	0.33	
v/c Ratio	0.53	0.62	0.15	0.26	0.59	0.27	0.39	0.27		0.83	0.33	
Uniform Delay, d1	35.4	16.5	0.0	36.4	17.4	0.0	20.6	13.7		24.7	15.3	
Delay	35.5	17.6	3.5	35.4	19.1	3.0	15.1	8.8		26.2	14.3	
LOS	D	B	A	D	B	A	B	A		C	B	
Approach Delay		17.5			16.6			11.7			21.6	
Approach LOS		B			B			B			C	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 44 (55%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 17.3
 Intersection Capacity Utilization 75.7%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 14: Bank & Albion

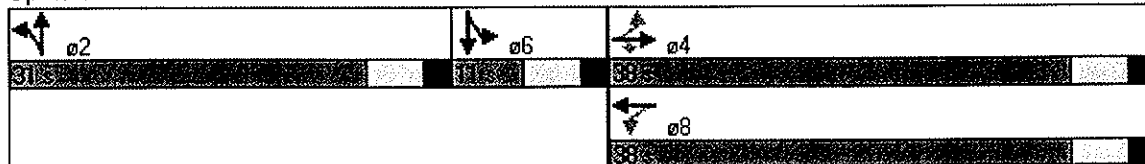


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1784	1517	1695	1749	0	1695	1517	0	1695	1517	0
Flt Permitted	0.684			0.705			0.950			0.950		
Satd. Flow (perm)	1220	1784	1517	1258	1749	0	1695	1517	0	1695	1517	0
Satd. Flow (RTOR)			609		12			860			591	
Volume (vph)	57	74	560	220	90	14	304	0	88	15	0	68
Lane Group Flow (vph)	62	80	609	239	113	0	330	96	0	16	74	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	38.0	38.0	38.0	38.0	38.0	0.0	31.0	31.0	0.0	11.0	11.0	0.0
Total Split (%)	48%	48%	48%	48%	48%	0%	39%	39%	0%	14%	14%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Coord	Coord		None	None	
Act Effct Green (s)	21.2	21.2	21.2	21.2	21.2		42.0	42.0		7.0	7.0	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27		0.53	0.53		0.09	0.09	
v/c Ratio	0.19	0.17	0.72	0.72	0.24		0.37	0.08		0.11	0.11	
Uniform Delay, d1	22.7	22.6	0.0	26.6	20.5		11.9	0.0		34.6	0.0	
Delay	20.3	20.2	2.1	26.2	19.0		14.2	0.0		41.9	0.0	
LOS	C	C	A	C	B		B	A		D	A	
Approach Delay		5.5			23.9			11.0			7.5	
Approach LOS		A			C			B			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 68.6%
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Lester & Albion

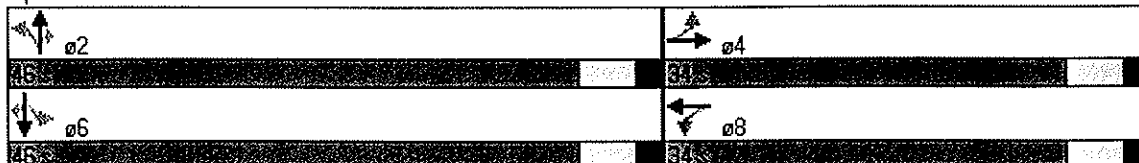


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1624	0	1695	1743	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.736			0.674			0.252			0.464		
Satd. Flow (perm)	1313	1624	0	1203	1743	0	450	3390	1517	828	3390	1517
Satd. Flow (RTOR)		77			5				1			178
Volume (vph)	89	49	73	1	27	5	83	438	1	22	836	169
Lane Group Flow (vph)	94	129	0	1	33	0	87	461	1	23	880	178
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43%	43%	0%	43%	43%	0%	58%	58%	58%	58%	58%	58%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effct Green (s)	12.2	12.2		12.2	12.2		62.9	62.9	62.9	62.9	62.9	62.9
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.79	0.79	0.79	0.79	0.79	0.79
v/c Ratio	0.47	0.41		0.01	0.12		0.25	0.17	0.00	0.04	0.33	0.14
Uniform Delay, d1	32.0	12.4		30.0	25.6		2.8	2.6	0.0	2.3	3.1	0.0
Delay	37.3	20.8		25.0	23.8		2.4	1.4	1.0	3.8	3.8	0.8
LOS	D	C		C	C		A	A	A	A	A	A
Approach Delay		27.8			23.8			1.5			3.3	
Approach LOS		C			C			A			A	

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0' (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 6.0
 Intersection Capacity Utilization 52.9%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Lester & Bank

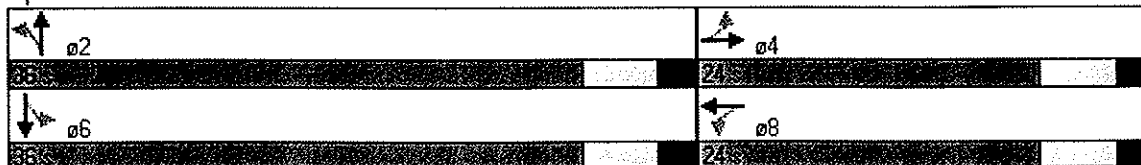


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1572	0	1695	1584	0	1695	1731	0	1695	1774	0
Flt Permitted	0.742			0.738			0.125			0.485		
Satd. Flow (perm)	1324	1572	0	1317	1584	0	223	1731	0	865	1774	0
Satd. Flow (RTOR)		23			18			32			6	
Volume (vph)	27	5	21	170	5	16	21	268	67	21	837	37
Lane Group Flow (vph)	30	29	0	189	24	0	23	372	0	23	971	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	40%	40%	0%	40%	40%	0%	60%	60%	0%	60%	60%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	14.7	14.7		14.8	14.8		40.4	40.4		40.4	40.4	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.67	0.67		0.67	0.67	
v/c Ratio	0.09	0.07		0.58	0.06		0.15	0.32		0.04	0.81	
Uniform Delay, d1	18.3	3.7		20.9	4.5		4.3	4.4		4.0	8.5	
Delay	15.3	7.9		18.9	8.6		7.0	5.3		6.2	24.5	
LOS	B	A		B	A		A	A		A	C	
Approach Delay		11.7			17.8			5.4			24.1	
Approach LOS		B			B			A			C	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: Q (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 18.4
 Intersection Capacity Utilization 78.7%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Leitrim & Albion

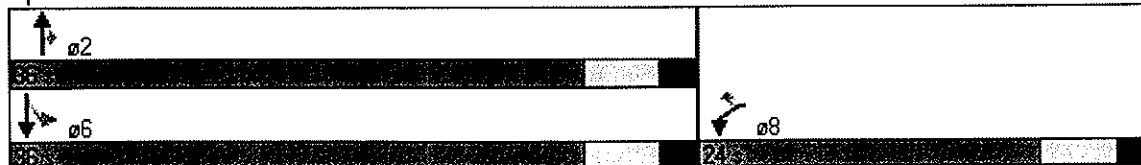


	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.568	
Satd. Flow (perm)	1695	1517	1784	1517	1013	1784
Satd. Flow (RTOR)		111		30		
Volume (vph)	39	100	250	27	167	743
Lane Group Flow (vph)	43	111	278	30	186	826
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	36.0	36.0	36.0	36.0
Total Split (%)	40%	40%	60%	60%	60%	60%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Coord	Coord	Coord	Coord
Act Effct Green (s)	9.0	9.0	46.1	46.1	46.1	46.1
Actuated g/C Ratio	0.15	0.15	0.77	0.77	0.77	0.77
v/c Ratio	0.17	0.34	0.20	0.03	0.24	0.60
Uniform Delay, d1	23.2	0.0	2.5	0.0	2.6	3.9
Delay	21.7	5.7	2.2	0.6	4.8	6.2
LOS	C	A	A	A	A	A
Approach Delay	10.2		2.0			5.9
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0'(0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 55.9%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 19: RCR & Albion

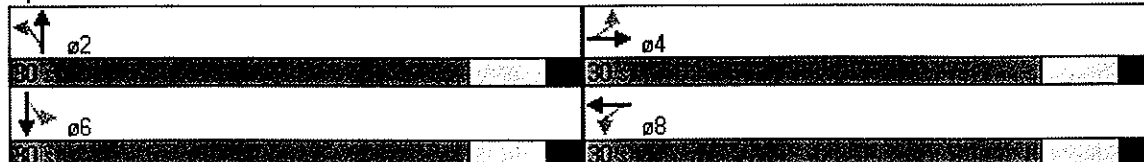


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1756	0	1695	1565	0	1695	1770	0	1695	1758	0
Flt Permitted	0.547			0.738			0.371			0.514		
Satd. Flow (perm)	976	1756	0	1317	1565	0	662	1770	0	917	1758	0
Satd. Flow (RTOR)		3			221			6			12	
Volume (vph)	195	25	3	21	47	210	3	270	16	64	375	43
Lane Group Flow (vph)	205	29	0	22	270	0	3	301	0	67	440	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	30.0	30.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	50%	50%	0%	50%	50%	0%	50%	50%	0%	50%	50%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	18.3	18.3		18.3	18.3		33.7	33.7		33.7	33.7	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.56	0.56		0.56	0.56	
v/c Ratio	0.69	0.05		0.05	0.43		0.01	0.30		0.13	0.44	
Uniform Delay, d1	18.3	13.2		14.7	2.7		5.7	6.8		6.2	7.4	
Delay	17.0	10.8		11.6	3.4		9.0	8.8		9.3	9.3	
LOS	B	B		B	A		A	A		A	A	
Approach Delay		16.2			4.0			8.8			9.3	
Approach LOS		B			A			A			A	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0,(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 70.6%
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 12: Rideau & Albion

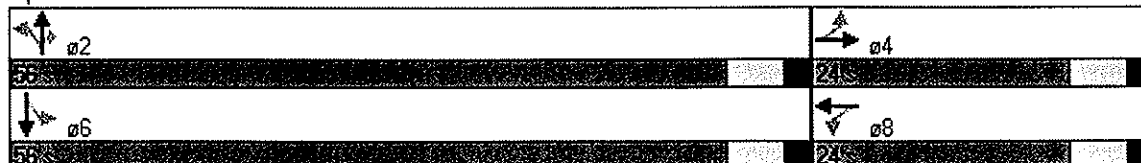


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1649	0	1695	1754	0	0	1779	1517	1695	1772	0
Flt Permitted	0.351			0.695				0.838		0.432		
Satd. Flow (perm)	626	1649	0	1240	1754	0	0	1495	1517	771	1772	0
Satd. Flow (RTOR)		48			8				91		6	
Volume (vph)	11	42	43	92	237	31	25	405	82	32	822	38
Lane Group Flow (vph)	12	95	0	102	297	0	0	478	91	36	955	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	56.0	56.0	56.0	56.0	56.0	0.0
Total Split (%)	30%	30%	0%	30%	30%	0%	70%	70%	70%	70%	70%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	
Act Effct Green (s)	18.1	18.1		18.1	18.1		53.9	53.9	53.9	53.9	53.9	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.67	0.67	0.67	0.67	0.67	
v/c Ratio	0.08	0.23		0.36	0.74		0.47	0.09	0.07	0.80		
Uniform Delay, d1	24.4	12.2		26.1	27.9		6.2	0.0	4.4	9.1		
Delay	23.7	13.8		25.8	27.9		7.0	1.3	6.5	17.6		
LOS	C	B		C	C		A	A	A	B		
Approach Delay		14.9			27.4		6.1			17.2		
Approach LOS		B			C		A			B		

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0'(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 16.0
 Intersection Capacity Utilization 76.9%
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 13: Rideau & Bank

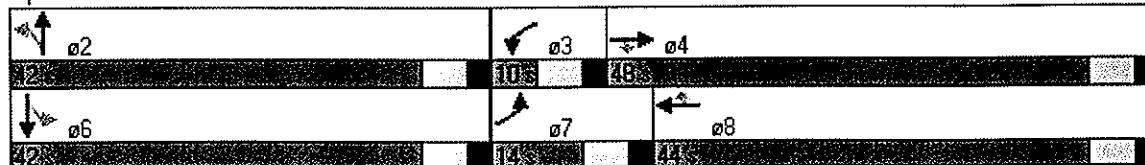


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	3357	1502	1679	3357	1502	1695	1694	0	1695	1688	0
Flt Permitted	0.950			0.950			0.552			0.638		
Satd. Flow (perm)	1669	3357	1451	1675	3357	1447	980	1694	0	1131	1688	0
Satd. Flow (RTOR)			138			210		25			27	
Volume (vph)	66	1306	165	55	748	197	99	96	41	365	137	64
Lane Group Flow (vph)	70	1389	176	59	796	210	105	146	0	388	214	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	14.0	48.0	48.0	10.0	44.0	44.0	42.0	42.0	0.0	42.0	42.0	0.0
Total Split (%)	14%	48%	48%	10%	44%	44%	42%	42%	0%	42%	42%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	9.5	47.4	47.4	6.0	44.2	44.2	36.6	36.6		36.6	36.6	
Actuated g/C Ratio	0.10	0.47	0.47	0.06	0.44	0.44	0.37	0.37		0.37	0.37	
v/c Ratio	0.44	0.87	0.23	0.58	0.54	0.28	0.29	0.23		0.94	0.34	
Uniform Delay, d1	43.7	24.7	3.2	46.5	21.3	0.0	22.5	17.9		30.6	19.8	
Delay	43.0	32.1	5.0	54.4	22.1	2.9	13.0	8.4		45.8	19.7	
LOS	D	C	A	D	C	A	B	A		D	B	
Approach Delay		29.7			20.1			10.4			36.5	
Approach LOS		C			C			B			D	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 49 (49%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 26.6
 Intersection Capacity Utilization 89.6%
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 14: Bank & Albion



CCE PM 2K10 + Site
3: Lester & Albion

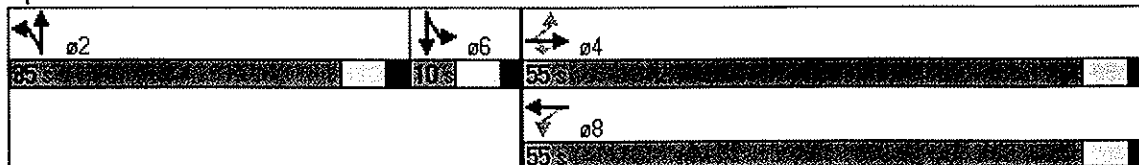
06/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1662	1750	1488	1601	1668	0	1679	1502	0	1647	1473	0
Flt Permitted	0.580			0.357			0.950			0.950		
Satd. Flow (perm)	1015	1750	1488	602	1668	0	1679	1502	0	1647	1473	0
Satd. Flow (RTOR)			955		5			349			461	
Volume (vph)	146	466	926	254	206	15	441	0	103	21	0	93
Lane Group Flow (vph)	151	480	955	262	227	0	455	106	0	22	96	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	55.0	55.0	55.0	55.0	55.0	0.0	35.0	35.0	0.0	10.0	10.0	0.0
Total Split (%)	55%	55%	55%	55%	55%	0%	35%	35%	0%	10%	10%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Coord	Coord	Coord	Coord	Coord		None	None		None	None	
Act Effct Green (s)	53.9	53.9	53.9	53.9	53.9		30.1	30.1		6.0	6.0	
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54		0.30	0.30		0.06	0.06	
v/c Ratio	0.28	0.51	0.77	0.81	0.25		0.90	0.15		0.22	0.18	
Uniform Delay, d1	13.1	15.4	0.0	19.8	12.6		33.5	0.0		45.5	0.0	
Delay	14.2	16.1	1.4	34.9	11.7		48.9	0.0		53.8	0.0	
LOS	B	B	A	C	B		D	A		D	A	
Approach Delay		7.0			24.1			39.7			10.0	
Approach LOS		A			C			D			B	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 37 (37%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 94.0%
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 3: Lester & Albion

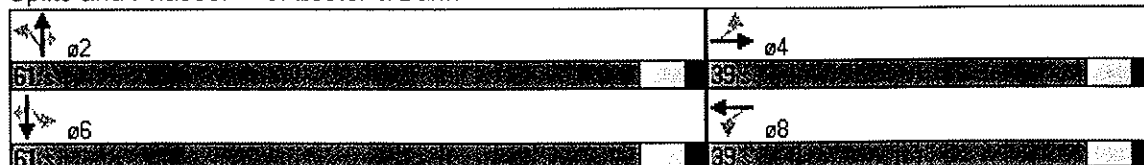


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1608	0	1679	1725	0	1679	3357	1502	1679	3357	1502
Flt Permitted	0.694			0.341			0.213			0.415		
Satd. Flow (perm)	1226	1608	0	603	1725	0	376	3357	1502	733	3357	1502
Satd. Flow (RTOR)		83			11				1			279
Volume (vph)	126	142	212	2	78	15	101	520	1	27	963	265
Lane Group Flow (vph)	133	372	0	2	98	0	106	547	1	28	1014	279
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	61.0	61.0	61.0	61.0	61.0	61.0
Total Split (%)	39%	39%	0%	39%	39%	0%	61%	61%	61%	61%	61%	61%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effct Green (s)	25.4	25.4		25.4	25.4		66.6	66.6	66.6	66.6	66.6	66.6
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.67	0.67	0.67	0.67	0.67	0.67
v/c Ratio	0.43	0.79		0.01	0.22		0.42	0.24	0.00	0.06	0.45	0.26
Uniform Delay, d1	31.2	26.7		28.0	26.0		7.8	6.7	0.0	5.8	8.0	0.0
Delay	16.3	12.4		23.0	23.7		12.8	7.7	6.0	8.2	9.3	1.2
LOS	B	B		C	C		B	A	A	A	A	A
Approach Delay		13.5			23.7			8.6			7.5	
Approach LOS		B			C			A			A	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0,(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 68.5%
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: Lester & Bank

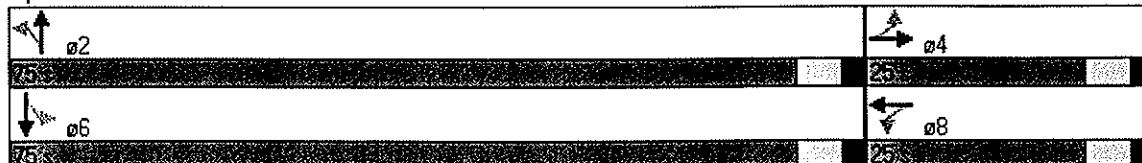


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1584	0	1695	1572	0	1695	1736	0	1695	1770	0
Flt Permitted	0.713			0.703			0.056			0.359		
Satd. Flow (perm)	1272	1584	0	1254	1572	0	100	1736	0	641	1770	0
Satd. Flow (RTOR)		62			54			28			7	
Volume (vph)	82	19	56	237	13	49	37	460	103	37	1069	61
Lane Group Flow (vph)	91	83	0	263	68	0	41	625	0	41	1256	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	75.0	75.0	0.0	75.0	75.0	0.0
Total Split (%)	25%	25%	0%	25%	25%	0%	75%	75%	0%	75%	75%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	21.0	21.0		21.0	21.0		71.0	71.0		71.0	71.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.71	0.71		0.71	0.71	
v/c Ratio	0.34	0.22		1.00	0.18		0.58	0.50		0.09	1.00	
Uniform Delay, d1	33.6	8.0		39.5	6.5		7.1	6.2		4.5	14.3	
Delay	34.4	12.8		82.1	12.5		25.8	4.8		6.2	35.2	
LOS	C	B		F	B		C	A		A	D	
Approach Delay		24.1			67.8			6.1			34.2	
Approach LOS		C			E			A			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0'(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 30.4
 Intersection Capacity Utilization 99.1%
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 4: Leitrim & Albion

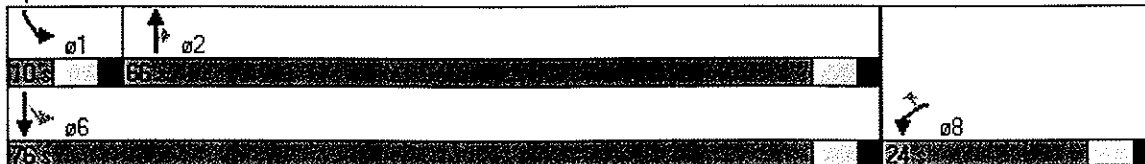


	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.475	
Satd. Flow (perm)	1695	1517	1784	1517	848	1784
Satd. Flow (RTOR)		159		41		
Volume (vph)	50	143	315	46	151	1177
Lane Group Flow (vph)	56	159	350	51	168	1308
Turn Type		Perm		Perm	pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	10.0	24.0
Total Split (s)	24.0	24.0	66.0	66.0	10.0	76.0
Total Split (%)	24%	24%	66%	66%	10%	76%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Coord	Coord	None	Coord
Act Effct Green (s)	10.6	10.6	71.4	71.4	81.4	81.4
Actuated g/C Ratio	0.11	0.11	0.71	0.71	0.81	0.81
v/c Ratio	0.31	0.52	0.27	0.05	0.23	0.90
Uniform Delay, d1	41.3	0.0	5.1	0.8	1.9	6.5
Delay	40.5	6.9	3.6	1.1	2.5	8.2
LOS	D	A	A	A	A	A
Approach Delay	15.6		3.3			7.6
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0,(0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 7.6
 Intersection Capacity Utilization 82.7%
 Intersection LOS: A
 ICU Level of Service D

Splits and Phases: 19: RCR & Albion



CCE PM 2K10 + Site
12: Rideau & Albion

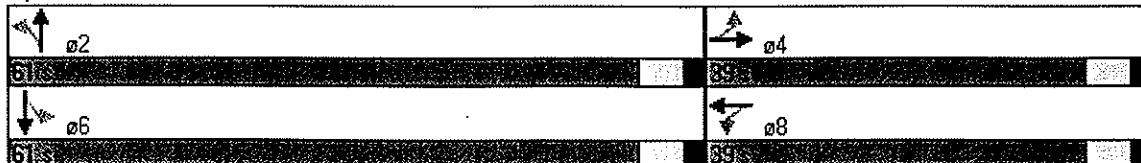
06/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1742	0	1679	1611	0	1679	1748	0	1679	1748	0
Flt Permitted	0.372			0.701			0.165			0.406		
Satd. Flow (perm)	657	1742	0	1239	1611	0	292	1748	0	717	1748	0
Satd. Flow (RTOR)		6			79			7			7	
Volume (vph)	152	74	8	61	136	193	6	404	31	98	710	57
Lane Group Flow (vph)	160	86	0	64	346	0	6	458	0	103	807	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	61.0	61.0	0.0	61.0	61.0	0.0
Total Split (%)	39%	39%	0%	39%	39%	0%	61%	61%	0%	61%	61%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effect Green (s)	32.0	32.0		32.0	32.0		60.0	60.0		60.0	60.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.60	0.60		0.60	0.60	
v/c Ratio	0.76	0.15		0.16	0.61		0.03	0.44		0.24	0.77	
Uniform Delay, d1	30.5	22.5		24.4	21.6		8.2	10.6		9.3	14.7	
Delay	35.6	21.4		9.4	5.0		9.8	11.7		6.6	11.6	
LOS	D	C		A	A		A	B		A	B	
Approach Delay		30.6			5.7			11.7			11.1	
Approach LOS		C			A			B			B	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 24 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 92.5%
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 12: Rideau & Albion



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1679	1599	0	1679	1702	0	1679	1723	0	1679	1755	0
Flt Permitted	0.510			0.626			0.200			0.200		
Satd. Flow (perm)	901	1599	0	1106	1702	0	353	1723	0	353	1755	0
Satd. Flow (RTOR)		1			33			9			2	
Volume (vph)	32	74	126	268	273	89	31	494	100	39	1003	46
Lane Group Flow (vph)	34	211	0	282	381	0	33	625	0	41	1104	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	76.0	76.0	0.0	76.0	76.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	76%	76%	0%	76%	76%	0%	24%	24%	0%	24%	24%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	28.6	28.6		28.6	28.6		63.4	63.4		63.4	63.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.63	0.63		0.63	0.63	
v/c Ratio	0.13	0.46		0.89	0.75		0.15	0.57		0.18	0.99	
Uniform Delay, d1	26.5	29.2		34.2	29.4		7.4	10.3		7.6	18.0	
Delay	20.1	23.5		32.8	28.1		11.5	12.9		10.2	58.3	
LOS	C	C		C	C		B	B		B	E	
Approach Delay		23.0			30.1			12.9			56.6	
Approach LOS		C			C			B			E	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 36.5
 Intersection Capacity Utilization 101.2%
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 13: Rideau & Bank

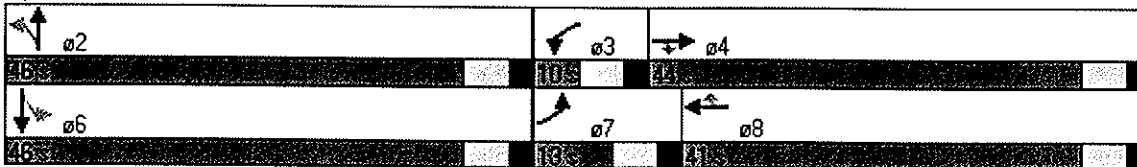
ø2 24s	ø4 76s
ø6 24s	ø8 76s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	1668	0	1695	1672	0
Flt Permitted	0.950			0.950			0.556			0.602		
Satd. Flow (perm)	1689	3390	1466	1691	3390	1462	987	1668	0	1068	1672	0
Satd. Flow (RTOR)			116			223		39			37	
Volume (vph)	102	1195	137	37	1033	238	155	111	70	365	138	81
Lane Group Flow (vph)	104	1219	140	38	1054	243	158	184	0	372	224	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0		24.0	24.0	
Total Split (s)	13.0	44.0	44.0	10.0	41.0	41.0	46.0	46.0	0.0	46.0	46.0	0.0
Total Split (%)	13%	44%	44%	10%	41%	41%	46%	46%	0%	46%	46%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				2.0	2.0	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Coord	Coord	None	Coord	Coord	Min	Min		Min	Min	
Act Effct Green (s)	9.0	47.8	47.8	6.0	40.8	40.8	38.2	38.2		38.2	38.2	
Actuated g/C Ratio	0.09	0.48	0.48	0.06	0.41	0.41	0.38	0.38		0.38	0.38	
v/c Ratio	0.68	0.75	0.18	0.37	0.76	0.33	0.42	0.28		0.91	0.34	
Uniform Delay, d1	44.1	23.3	2.6	46.7	25.4	1.5	22.7	16.5		29.3	18.0	
Delay	53.1	27.5	5.5	45.8	28.2	4.1	16.5	10.9		35.6	17.3	
LOS	D	C	A	D	C	A	B	B		D	B	
Approach Delay		27.2			24.3			13.5			28.7	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 44 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization 85.7%
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 14: Bank & Albion



CCE Sat 2010 + Site
3: Lester & Albion

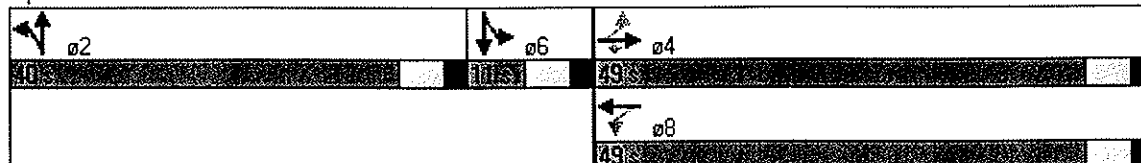
06/07/2004

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1784	1517	1695	1749	0	1695	1517	0	1695	1517	0
Flt Permitted	0.670			0.697			0.950			0.950		
Satd. Flow (perm)	1195	1784	1517	1244	1749	0	1695	1517	0	1695	1517	0
Satd. Flow (RTOR)			729		10			833			562	
Volume (vph)	66	86	671	266	104	16	356	0	104	17	0	79
Lane Group Flow (vph)	72	93	729	289	130	0	387	113	0	18	86	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phases	4	4	4	8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		10.0	10.0	
Total Split (s)	49.0	49.0	49.0	49.0	49.0	0.0	40.0	40.0	0.0	11.0	11.0	0.0
Total Split (%)	49%	49%	49%	49%	49%	0%	40%	40%	0%	11%	11%	0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Coord	Coord		None	None	
Act Effct Green (s)	31.0	31.0	31.0	31.0	31.0		52.2	52.2		7.0	7.0	
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31		0.52	0.52		0.07	0.07	
v/c Ratio	0.19	0.17	0.75	0.75	0.24		0.44	0.09		0.15	0.14	
Uniform Delay, d1	25.3	25.1	0.0	31.0	23.6		15.5	0.0		44.7	0.0	
Delay	22.7	22.7	1.9	31.7	22.9		15.3	0.0		39.3	0.0	
LOS	C	C	A	C	C		B	A		D	A	
Approach Delay		5.7			28.9			11.9			6.8	
Approach LOS		A			C			B			A	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0,(0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 80.2%
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 3: Lester & Albion

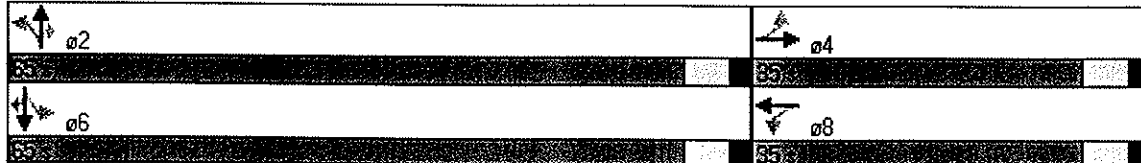


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1624	0	1695	1743	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.732			0.615			0.219			0.428		
Satd. Flow (perm)	1306	1624	0	1097	1743	0	391	3390	1517	764	3390	1517
Satd. Flow (RTOR)		77			6				1			304
Volume (vph)	105	57	85	1	31	6	96	510	1	26	981	289
Lane Group Flow (vph)	111	149	0	1	39	0	101	537	1	27	1033	304
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phases	4	4		8	8		2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	35%	35%	0%	35%	35%	0%	65%	65%	65%	65%	65%	65%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	Coord
Act Effct Green (s)	17.2	17.2		17.2	17.2		74.8	74.8	74.8	74.8	74.8	74.8
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.75	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.49	0.43		0.01	0.13		0.35	0.21	0.00	0.05	0.41	0.25
Uniform Delay, d1	37.4	17.4		34.0	29.6		4.3	3.8	0.0	3.3	4.6	0.0
Delay	24.4	7.7		30.0	27.9		11.3	7.0	5.0	4.8	5.4	0.7
LOS	C	A		C	C		B	A	A	A	A	A
Approach Delay		14.8			27.9			7.7			4.4	
Approach LOS		B			C			A			A	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0'(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 6.9
 Intersection Capacity Utilization 59.2%
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Lester & Bank

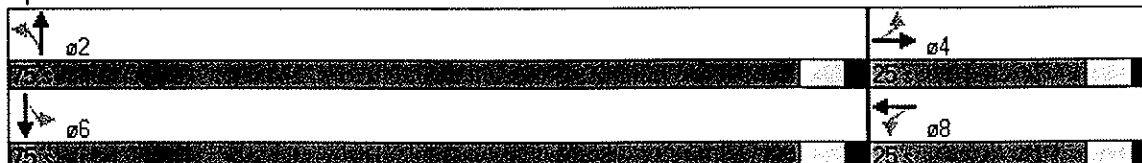


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1572	0	1695	1584	0	1695	1731	0	1695	1774	0
Fit Permitted	0.739			0.735			0.081			0.470		
Satd. Flow (perm)	1319	1572	0	1311	1584	0	145	1731	0	839	1774	0
Satd. Flow (RTOR)		27			21			31			5	
Volume (vph)	31	6	24	206	6	19	24	316	79	24	1003	43
Lane Group Flow (vph)	34	34	0	229	28	0	27	439	0	27	1162	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	75.0	75.0	0.0	75.0	75.0	0.0
Total Split (%)	25%	25%	0%	25%	25%	0%	75%	75%	0%	75%	75%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	20.3	20.3		20.3	20.3		71.7	71.7		71.7	71.7	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.72	0.72		0.72	0.72	
v/c Ratio	0.13	0.10		0.86	0.08		0.26	0.35		0.04	0.91	
Uniform Delay, d1	32.6	6.6		38.5	8.0		4.9	4.9		4.1	11.5	
Delay	32.6	14.9		51.2	16.5		5.5	4.3		8.3	28.2	
LOS	C	B		D	B		A	A		A	C	
Approach Delay		23.7			47.4			4.3			27.8	
Approach LOS		C			D			A			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0,(0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.7
 Intersection Capacity Utilization 91.7%
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 4: Leitrim & Albion

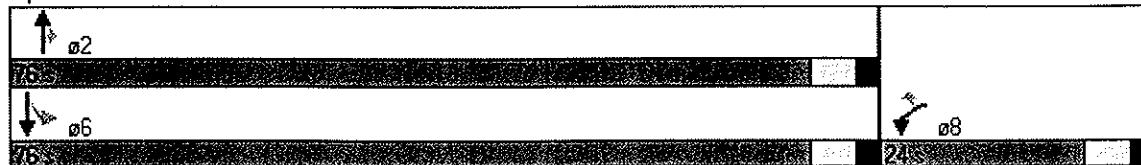


	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
Flt Permitted	0.950				0.546	
Satd. Flow (perm)	1695	1517	1784	1517	974	1784
Satd. Flow (RTOR)		111		34		
Volume (vph)	39	100	294	31	194	905
Lane Group Flow (vph)	43	111	327	34	216	1006
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phases	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24%	24%	76%	76%	76%	76%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Coord	Coord	Coord	Coord
Act Effct Green (s)	9.9	9.9	82.1	82.1	82.1	82.1
Actuated g/C Ratio	0.10	0.10	0.82	0.82	0.82	0.82
v/c Ratio	0.26	0.44	0.22	0.03	0.27	0.69
Uniform Delay, d1	41.6	0.0	2.0	0.0	2.1	3.7
Delay	41.0	8.3	3.0	1.4	2.2	3.2
LOS	D	A	A	A	A	A
Approach Delay	17.4		2.8			3.0
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 4.3
 Intersection Capacity Utilization 65.9%
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 19: RCR & Albion

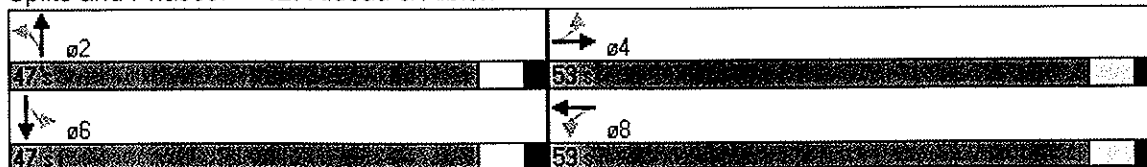


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1761	0	1695	1563	0	1695	1770	0	1695	1756	0
Flt Permitted	0.474			0.735			0.268			0.419		
Satd. Flow (perm)	846	1761	0	1311	1563	0	478	1770	0	748	1756	0
Satd. Flow (RTOR)		3			274			4			8	
Volume (vph)	243	29	3	24	55	260	3	320	19	77	435	52
Lane Group Flow (vph)	256	34	0	25	332	0	3	357	0	81	513	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	53.0	53.0	0.0	53.0	53.0	0.0	47.0	47.0	0.0	47.0	47.0	0.0
Total Split (%)	53%	53%	0%	53%	53%	0%	47%	47%	0%	47%	47%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord		Coord	Coord	
Act Effct Green (s)	35.2	35.2		35.2	35.2		56.8	56.8		56.8	56.8	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.57	0.57		0.57	0.57	
v/c Ratio	0.86	0.05		0.05	0.46		0.01	0.35		0.19	0.51	
Uniform Delay, d1	30.1	19.5		21.4	3.8		9.3	11.5		10.5	12.9	
Delay	28.5	15.9		34.5	25.4		14.7	14.3		15.6	17.0	
LOS	C	B		C	C		B	B		B	B	
Approach Delay		27.0			26.0			14.3			16.8	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 20.2
 Intersection Capacity Utilization 81.6%
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 12: Rideau & Albion



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1695	1652	0	1695	1756	0	0	1779	1517	1695	1772	0
Fit Permitted	0.177			0.650				0.664		0.392		
Satd. Flow (perm)	316	1652	0	1160	1756	0	0	1185	1517	699	1772	0
Satd. Flow (RTOR)		46			6				106		5	
Volume (vph)	13	51	50	107	292	36	29	470	95	37	954	44
Lane Group Flow (vph)	14	113	0	119	364	0	0	554	106	41	1109	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	73.0	73.0	73.0	73.0	73.0	0.0
Total Split (%)	27%	27%	0%	27%	27%	0%	73%	73%	73%	73%	73%	0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Coord	Coord	Coord	Coord	Coord	
Act Effct Green (s)	22.6	22.6		22.6	22.6		69.4	69.4	69.4	69.4	69.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.69	0.69	0.69	0.69	0.69	
v/c Ratio	0.19	0.28		0.45	0.90		0.67	0.10	0.08	0.08	0.90	
Uniform Delay, d1	31.3	18.5		33.4	37.0		8.8	0.0	5.0	12.4		
Delay	39.2	28.4		34.1	51.1		9.7	1.1	5.0	24.0		
LOS	D	C		C	D		A	A	A	C		
Approach Delay		29.6			46.9		8.3			23.3		
Approach LOS		C			D		A			C		

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 89.9%
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 13: Rideau & Bank

