

LOYALIST TOWNSHIP

AMHERSTVIEW WEST SECONDARY PLAN - TRAFFIC ANALYSIS REPORT

NOVEMBER 13, 2023





AMHERSTVIEW WEST SECONDARY PLAN - TRAFFIC ANALYSIS REPORT

LOYALIST TOWNSHIP

PROJECT NO.: 211-01353

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1 PROJECT OVERVIEW

A Secondary Plan is being developed for Amherstview West in Loyalist Township, Ontario to provide a policy and implementation framework to guide the future growth and development of the area for the next 25 years. Ultimately, this plan will be incorporated as an amendment to the Loyalist Township Official Plan. The project study area is bounded by Taylor-Kidd Boulevard (County Road 23) to the north, County Road 6 to the east, Bath Road (Highway 33) to the south, and the Parrott's Bay Conservation Area to the west, as shown in **Figure 1-1**.

Amherstview is designated as an Urban Area in Loyalist Township, a lower-tier municipality located in the County of Lennox and Addington, along the north shore of Lake Ontario in Eastern Ontario, immediately west of the City of Kingston and east of the Town of Greater Napanee. Amongst the growing settlement areas in Loyalist Township, including Bath and Odessa, Amherstview is experiencing the fastest rate of growth. According to the 2019 Loyalist Township Population, Housing and Employment Projections to 2046 Final Report (Hemson Consulting Ltd, 2019), the population of the Amherstview area was 8,410 in 2011 and 9,150 in 2016, an 8.8% growth over the period; the population is projected to increase to 11,510 in 2036 and to 12,400 in 2046. Currently in Amherstview, the designated land for growth is quickly being developed with an anticipated 5-10-year supply of residential land left.

This memo provides a planning-level review of existing transportation infrastructure, operations and policy in the study area, review of the proposed land use concepts, and the projection and analysis of traffic volumes that may be generated by development in the Secondary Plan area.



Figure 1-1: Secondary Plan Study Area

2 EXISTING CONDITIONS REVIEW

2.1 ROAD NETWORK

Figure 2-1 is a modified map of Schedule D of the 2016 County of Lennox and Addington Transportation Official Plan (approved by the Ministry of Municipal Affairs and Housing, MMAH), illustrating the proposed Amherstview West Secondary Plan study area with the boundary road network and trails system. Characteristics of the roads within and bordering the study area are summarized below.

Taylor-Kidd Boulevard (County Road 23 / CR 23) is a designated major arterial road running on an east-west alignment, between County Road 4 west of the study area and Princess Street to the east. This roadway is configured with a single lane and paved shoulder in each direction and a posted speed limit of 80km/h. The intersection with County Road 6 is an All-Way Stop Controlled (AWSC) intersection with auxiliary right-turn lanes. In 2019, CR 23 had an Annual Average Daily Traffic (AADT) volume of 6,027 vehicles / day on its segment between County Road 6 and County Road 24; trucks make up 12% of traffic on this segment.

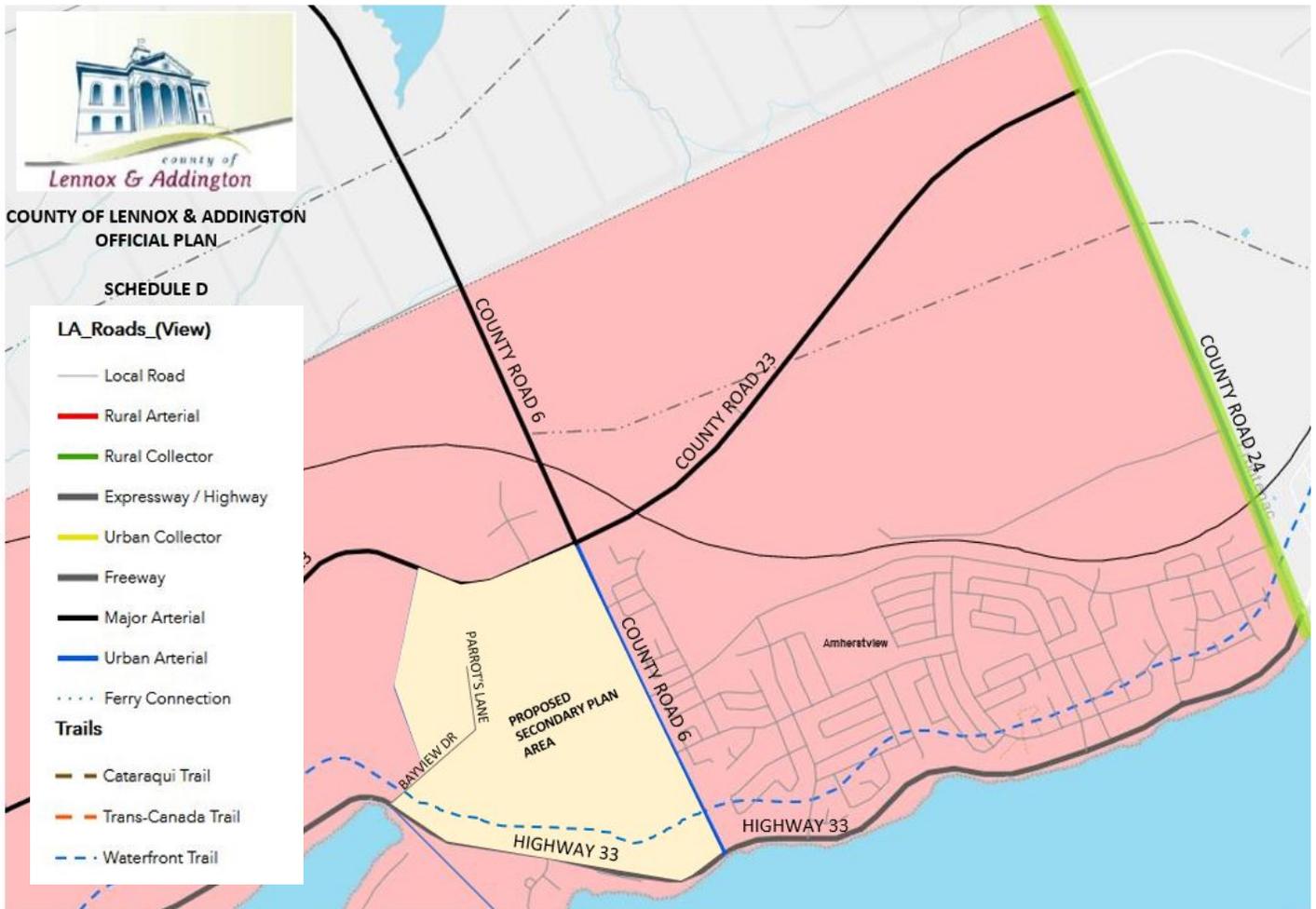


Figure 2-1: Existing Road Network in the Study Area (Lennox and Addington Official Plan)

Wilton Road (County Road 6 / CR 6) is an urban arterial road running on a north-south alignment, serving the Amherstview urban area between Taylor-Kidd Boulevard and Bath Road. This roadway is configured with a single lane in each direction and a posted speed limit of 60 km/h along the entire corridor. CR 6 features shoulders that are paved to just outside of the centreline, then transition to gravel shoulders. There are no posted parking restrictions along the shoulders of the road. There are six intersections along CR 6 in the study area; the major intersections consist of the AWSC intersection with Taylor-Kidd Boulevard and the intersection with Bath Road which is stop controlled on CR 6 only. All the other intersections lead to neighbourhoods east of CR 6 with stop control on the residential streets only. There are also accesses to private properties in the northbound direction of CR 6. The 2019 AADT on this segment of CR 6 is 5,922 with 15% of traffic being trucks, recorded at Count Station 18 located immediately south of the intersection with CR 23.

Bath Road (Highway 33) is an east-west Provincial Highway bordering the study area to the south with a posted speed limit of 60 km/h. Bath Road is configured with a single lane in each direction and auxiliary turn lanes at major intersections along the corridor. The three intersections in the study area are stop-controlled on the minor roads only. The roadway within the study area includes shoulders and guide rails along sections where there are steep slopes from the roadway limits. There are several residential and commercial accesses along this corridor, most of which are in the westbound direction. The Ontario Ministry of Transportation's (MTO's) 2019 traffic data reports an AADT of 8,700 and a 3% truck composition along the segment in the Amherstview area between County Road 4 and Sherwood Avenue.

Bayview Drive/Parrott's Bay Lane is a north-south local road that serves as an access from Bath Road to the project study area. Bayview Drive is paved to approximately 300 m east of Bath Road. Parrott's Bay Lane is also unpaved and currently terminates at a cul-de-sac at its north end. The cross-section is rural with grass shoulders or ditches along the road, except along the east side of the paved section of Bath Road where there is a concrete gutter. Traffic on Bayview Drive and Parrott's Bay Lane is mainly from the residences as there are several accesses in both directions on this road. Bayview Drive/Parrott's Bay Lane is currently the only road that exists within the Secondary Plan area.

The County of Lennox and Addington Official Plan (2018, Consolidated) and the 2020 Draft Loyalist Township Official Plan have not identified protected rights-of-way (ROWs) in the study area. However, the County's Official Plan identified the following transportation objectives with regards to ROWs:

- Protect County transportation corridors to facilitate the development of a transportation system that is compatible with and supportive of existing and future land uses; and
- Ensure that appropriate ROW widths for all existing and proposed County roads are provided in accordance with the Ontario Planning Act (R.S.O. 1990, c. P.13).

2.2 TRANSIT SERVICE

The Amherstview area is served by Kingston Transit bus service connecting Amherstview to Kingston via Route 10 under a contract between the transit agency and Loyalist Township. This single route runs between the Cataraqui Centre in Kingston and Amherstview via Bayridge Drive, Taylor-Kidd Boulevard, Collins Bay Road and Bath Road. The service within Amherstview runs along Amherst Drive and several local roads within the neighbourhood, with a time point at Speers Avenue/Kidd Drive. Route 10 connects riders from Amherstview to express routes at both Cataraqui and Bayridge Centres which provide further connectivity in Kingston.

Kingston Transit operates Route 10 at 60-minute frequencies each day. The route has a 30-minute run time from Amherstview to the transfer point at Cataraqui Centre, making scheduled stops within the Amherstview area and along the route to and from the Cataraqui Centre. Route 10 covers only part of the community in the Amherstview area; bus stops are typically 300 m apart, which tend to be a 5-minute walk from most homes in the core service area. Outside of the core area, the nearest bus stops are approximately a 10-minute walk from homes. **Figure 2-2** illustrates Route 10's coverage area.

Route 10's current coverage area does not extend to the location of the Secondary Plan area, which is west of the existing development in Amherstview. The closest the bus service gets to the Secondary Plan area is Pratt Drive, approximately 200 m from CR 6, which borders the Secondary Plan area to the east. An extension to current transit service would require additional vehicles to be able to increase the service area beyond the current 60-minute run time.

A progress report on Improving Public Transportation was submitted to Loyalist Township Council in October 2021. This report provided updates on consultation with Kingston Transit and the Town of Greater Napanee regarding initiatives to provide increased public transit service to communities within Loyalist Township. Conclusions from this discussion include continuing work with Kingston Transit to review service on Route 10 and consider an additional bus, if warranted, and consultation with the Town of Greater Napanee for coordination of service to the west side of Loyalist Township. Council accepted the report at the October 12, 2021 meeting and carried a motion for staff to submit a proposal Lennox and Addington County that would commit Loyalist Township and the Town of Greater Napanee to providing a coordinated service.

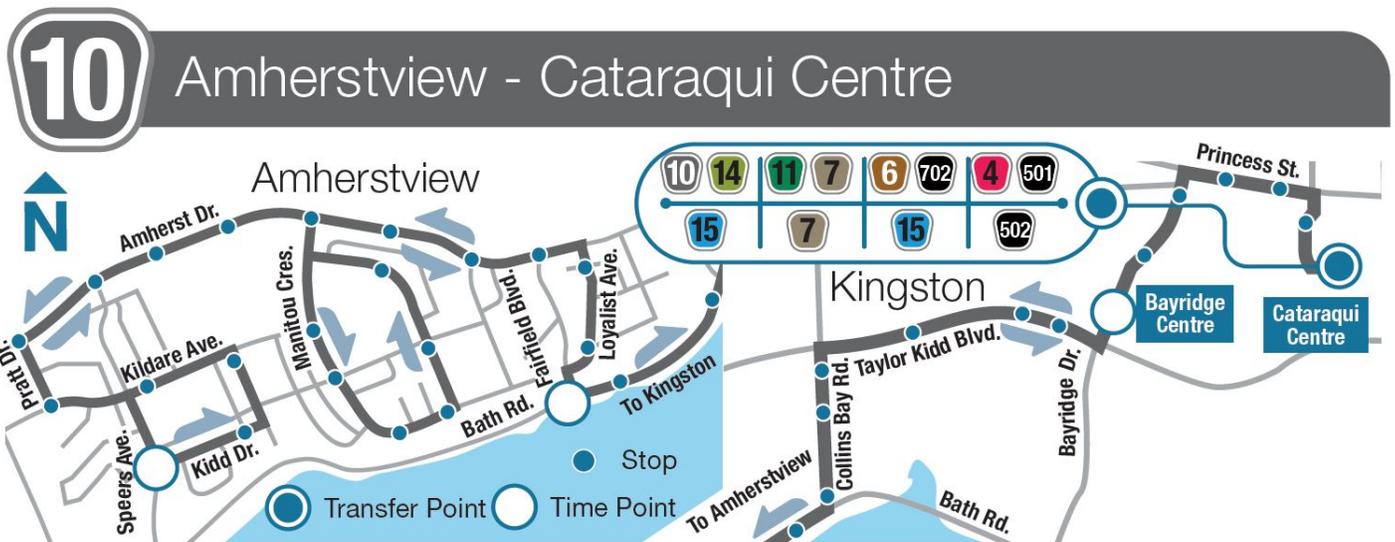


Figure 2-2: Kingston Transit Route 10 (Amherstview)

2.3 ACTIVE TRANSPORTATION

Loyalist Township and the County of Lennox and Addington have implemented active transportation (AT) facilities bordering and adjacent to the study area. Most notably, paved shoulders have been implemented on County Roads 6 and 23 as part of the County of Lennox and Addington's Policy for establishing a multi-use on-road facility network for County Roads. These shoulders provide pedestrians and cyclists access to a greater network of paved shoulders on County Roads. Bath Road (Highway 33) in the study area also has paved shoulders that form part of the Great Lakes Waterfront Trail.

A multi-use pathway (MUP) currently runs parallel on the east side of County Road 6 between Amherst Drive and the future pedestrian connection to Pearce Street (currently a construction access). Loyalist Township has indicated interest in extending AT facilities on County Road 6 to Bath Road (Highway 33) during urbanization of the area, as well as providing an AT connection to the north to Odessa and beyond in the long-term (20 years). Additionally, the Amherstview neighbourhood immediately east of the study area has sidewalks on one side of the majority of local roads and no cycling facilities; within the Secondary Plan area, sidewalks on at least one side of residential roads will be

required for consistency. Parrott’s Bay Conservation Area, located just west of the study area, has a network of unpaved trails that future users within the future development area may benefit from connections to.

Within the study area, paved shoulders along County Road 23 and Bath Road (Highway 33) are in good condition; the shoulders are clearly delineated and well maintained, as shown in **Figure 2-3** and **Figure 2-4**, respectively. Along County Road 6, the paved portion of the shoulders are narrow and likely do not provide adequate separation from traffic for pedestrian and cyclist comfort and safety (**Figure 2-5**). Pedestrians and cyclists currently operate in mixed traffic on Bayview Drive / Parrott’s Bay Lane (**Figure 2-6**).

There are currently no dedicated pedestrian crossings of any of the roads bordering the study area. As a result, the Township has identified concerns of pedestrian crossing safety at intersections within the area, particularly at the CR 6 and Bath Road (Highway 33) crossing. Safe pedestrian connections to destinations in and around the area will be a key consideration of the Secondary Plan.



Figure 2-3: Condition of CR 23 Road Shoulder
(Source: Google Street View, 2019)



Figure 2-4: Condition of Highway 33 Shoulder
(Source: Google Street View, 2019)



Figure 2-5: Condition of CR 6 Shoulder
(Source: Google Street View, 2018)

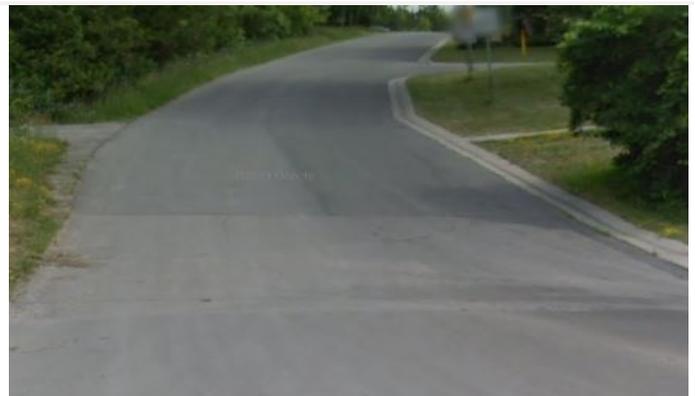


Figure 2-6: Bayview Drive Showing No Road Shoulder
(Source: Google Street View, 2019)



3 POLICIES GUIDING TRANSPORTATION EXPANSION

As part of the background review of transportation infrastructure in and around the Secondary Plan area, the transportation objectives of the Amherstview area have been considered through examining the policies in Loyalist Township and the County of Lennox and Addington as a whole. The transportation goals of the Township are in line with that of the County. The policies generally cover roadways, transit and active transportation and are articulated in the following documents that have been reviewed by WSP:

- 1 County of Lennox and Addington Official Plan (2018 Consolidated Version)
- 2 County of Lennox and Addington Transportation Master Plan (2014)
- 3 Loyalist Township Draft Official Plan (2020)
- 4 Loyalist Township Service Delivery Review Report (2020)
- 5 Loyalist Township Parks and Recreation Master Plan (2017)
- 6 Population, Housing and Employment Projections to 2046, Hemson Consulting (2019) and Update Letter (2022)

3.1 COUNTY OF LENNOX AND ADDINGTON OFFICIAL PLAN (2018)

The County of Lennox and Addington Official Plan (2018 Consolidated Version) establishes the policy framework that guides all land use in the County for a 20-year planning period, until 2036. The plan has a transportation component to guide the development of integrated transportation infrastructure that safely accommodates various modes of transportation including automobiles, buses, trucks, cycling and walking within the County. Subsection E2.1 of the Official Plan includes the following transportation policy objectives relevant to the Amherstview West Secondary Plan:

- Establish an integrated transportation system that safely and efficiently accommodates various modes of transportation including trains, automobiles, trucks, air, public transit and active transportation; and
- Promote public transit, active transportation as energy efficient, affordable and accessible forms of transportation.

For the promotion of active transportation, Subsection E2.2.9 encourages local municipalities to:

- Consider the provision of safe and convenient cycling and walking routes in the review of all development applications;
- Consider the provision of sidewalks in Urban Areas and Rural Settlement Areas, where appropriate; and
- Investigate and provide for bicycle multi-use lanes where feasible and necessary in the construction and reconstruction of roads.

3.2 COUNTY OF LENNOX AND ADDINGTON TRANSPORTATION MASTER PLAN UPDATE (2014)

The County of Lennox and Addington 2014 Transportation Master Plan (TMP) Update guides the development of the transportation network in the entire County including Loyalist Township. The development of the transportation network in the TMP is based on population projections for 2024 and 2034 horizon years and travel patterns and aims to manage vehicular traffic while assessing the transportation network needs.



The Lakeview Ponds Division development in Amherstview east of County Road 6 between Taylor-Kidd Boulevard Amherst Drive was estimated to significantly contribute to travel growth within the Amherstview area. Although roads and intersections within the area are expected to operate with reserve capacity, the TMP estimated that the Lakeview development will increase delays and reduce operations for critical movements on three of the four approaches at the CR 6 and CR 23 intersection. The TMP proposes a roundabout to be implemented in 2024 to replace the current AWSC to better accommodate traffic in the 2024 and 2034 future horizon years.

According to the TMP, any additional developments in Amherstview and in the Village of Bath are expected to increase the traffic volumes on Bath Road (Highway 33) to capacity, ultimately requiring a highway expansion. The expansion of Bath Road (Highway 33) is not considered to be feasible due to the physical impacts on adjacent lands; as such, to address capacity concerns CR 23 is planned for a westerly extension from Highway 4 west of the study area to Highway 7 and later to County Road 21, between 2029 and 2034.

The TMP also recommends the continuation of the Policy for establishing a multi-use on-road facility network for County Roads for active transportation facilities due to its previous success. The program is said to have resulted in improved safety, reduced maintenance costs and increased cycling tourism in Lennox and Addington. Under this program, all new or reconstructed County roads are to have paved shoulders, where feasible, for pedestrians and cyclists.

For public transit, the County advises local municipalities to discuss increasing transit service to their areas with the major transit agencies. The feasibility of an expansion of the current service to Loyalist Township requires consultation with Kingston Transit. Loyalist Township is working towards enhancing the public transit system, as stated in their Strategic Plan (2019-2023).

3.3 OFFICIAL PLAN FOR THE TOWNSHIP OF LOYALIST PLANNING AREA (AMENDMENT NO. 38, FIVE YEAR REVIEW) (2021)

The Official Plan for the Township of Loyalist Planning Area (Amendment No. 38, Five Year Review) (Council Adoption September 27, 2021) establishes the specific policy framework for management of physical development in Loyalist Township. According to Section 3.9 of the Official Plan, the transportation goals seek to promote the continued development of a safe integrated and efficient transportation system which consists of a network of roads; ‘peopleways’ for walking and bicycling; transit; ferry and rail system; all intended to provide for the movement of people and goods consistent with the economic function of the area and the needs of the residents of the Township in coordination with adjacent communities. The transportation objectives focus on the minimization of travel time, distance and costs involved in the movement of people and goods and the development of ways to encourage active transportation (as an alternative to automotive travel and transit).

3.4 LOYALIST TOWNSHIP SERVICE DELIVERY REVIEW REPORT (2020)

The Loyalist Township Service Delivery Review Report (2020) focuses on improvement of services provided in Loyalist Township. Transit service, a part of the transportation focus of the Amherstview West Secondary Plan, is considered in this document. Frequency is identified as the major issue with the existing transit service; Route 10 operates an hourly service roundtrip which does not meet the needs of residents. As a result, most residents use cars for regular travel, leaving only captive riders on the buses. The service also accommodates some disabled persons some of the time, but not all, and there is no dedicated accessible service. The transit service does not operate outside Amherstview and therefore does not serve residents in Odessa and Bath. In light of these issues, the report makes the following recommendations:

- Revise Route 10 in consultation with Kingston Transit to reduce the run time and improve reliability;



- Consider implementing the lowest-cost approach to accessible service according to the Accessibility for Ontarians with Disabilities Act (AODA) (S.O. 2005, c.11);
- Extend transit service to surrounding areas only if there is a clear interest from residents to support the service through increased property taxes; and
- Consider developing a Park & Ride facility in the Amherstview area to accommodate residents of Odessa, Bath and the rest of the Township.

3.5 LOYALIST TOWNSHIP PARKS AND RECREATION MASTER PLAN (2017)

The Parks and Recreation Master Plan (2017) guides active transportation and recreation infrastructure development and is important for consideration during the Amherstview West Secondary Plan. The Master Plan recommends the following:

- Continue efforts to plan for and develop sidewalks and/or multi-use trails to promote walkability, with objectives to link residential areas to existing parks and open space system, community facilities and other destinations, including employment lands. These opportunities should be examined as part of secondary or block planning studies for new development areas.
- Collaborate with Lennox and Addington County, local cycling organizations, and adjacent municipalities to confirm, sign, develop and promote road-based cycling routes identified in the Lennox and Addington County Trail System. This should include consideration of improvements such as widened lanes or paved shoulders along identified cycling routes at the time of road improvements or reconstruction, as well as discuss with MTO at such time as road bridge reconstruction at Highway 401 occurs.

3.6 POPULATION, HOUSING AND EMPLOYMENT PROJECTIONS TO 2046 (2019) AND UPDATE (2022)

Hemson Consulting prepared a Population, Housing and Employment Report for Loyalist Township in 2019; this report documented a forecast for population, housing and employment for the Township based on trends in population growth and aging, assumption on the Township’s future economic outlook, and historical and forecast trends in adjacent communities. The Hemson report findings specific to Amherstview are summarized in the Growth Management Report for the Amherstview West (July 2021; updated November 2022), prepared by WSP; this report includes a detailed review of the anticipated growth in Amherstview West, referencing municipal policies and forecasts as well as the Hemson report projections. The Growth Management Report indicates the following anticipated growth requirements in the Amherstview West Secondary Plan area:

- A growth in population in Amherstview from 9,760 in 2021 to 12,400 by 2046, representing an annual growth rate of approximately 0.96% per year.
- Residential Growth in Amherstview between 2016 and 2046 of 1,860 residential units; 860 units of which are to be built on lanes east of the study area between 2016 and 2028, and the remaining 1,000 units allocated to the Amherstview West Secondary Plan area to be built between 2028 and 2046.
- A breakdown of the remaining 1,000 units as 550 single/semi-detached, 410 rowhouse, and 40 high density/apartment.
- Based on a ratio of population to employment adopted from the Hemson Report, an estimated 110 to 130 commercial jobs within the Secondary Plan area by 2046.

In 2022, it was announced that Umicore proposes to construct an electric vehicle battery manufacturing plant in Loyalist Township, in the Bath Industrial Park to the west of Amherstview and the Secondary Plan area. This plant is expected to create approximately 700 new jobs once operational. In response to this announcement, Hemson Consulting issued a



supplementary letter regarding “Assessment of Need to Revise Loyalist Township Growth Outlook and Amherstview Secondary Plan” (dated October 7, 2022). The Hemson letter indicated that while the employment forecasts would grow by approximately 900 jobs as a result of the Umicore Plant and other industrial development in the same area, housing and trip generation tied to these jobs would be distributed between Loyalist Township, the Kingston Census Metropolitan Area (CMA) and areas beyond the Kingston CMA. The Hemson letter concluded that further updates to the Loyalist Township Growth were not required as this distribution was not likely to increase housing demand in Amherstview specifically, and that any changes in growth trends observed could be addressed in future planning reviews. Subsequently, the Growth Management Report for Amherstview West was updated in November 2022 to include the findings of the Hemson letter.

3.7 LOYALIST INFRASTRUCTURE MASTER PLAN

Loyalist Township commenced preparation of an Infrastructure Master Plan in May 2021; this plan is intended to address core infrastructure in the Township including right right-of-way and water (potable, waste, storm) infrastructure over the next 25 years. To date, the Infrastructure Master Plan is not yet available for public review, but the Township has provided draft memos regarding Active Transportation and Traffic Calming Policies for review that will form part of the Infrastructure Master Plan discussion on road right-of-way. These memos have been reviewed during the development of the traffic analysis and are discussed later in this report.



4 TRAFFIC OPERATIONS

4.1 EXISTING TRAFFIC VOLUMES

Existing traffic volume data was collected by WSP and Loyalist Township at 13 locations in Amherstview between January 18 and 27, 2022, and is summarized in **Figure 4-1**. It is noted that at this time the Province of Ontario was operating under Step 2 restrictions as a result of the ongoing COVID-19 pandemic. These restrictions included the closures of indoor gathering spaces including dining, movie theaters, and gyms; Ontario schools were reopened to in-person learning on January 17, 2022, and thus were in operation when the traffic count data was collected.

As a result of this timing, the collected traffic data does represent the impacts of schools and some commuter behaviour but is likely to represent a decrease from pre-pandemic volumes. At the same time, the widespread adoption of remote work that occurred during the pandemic remains a standard operating procedure at many employers and thus it cannot be definitively anticipated if or when volumes will return to pre-pandemic levels as further restrictions are removed. As a result, existing traffic analysis has been based on the January 2022 traffic count data collected; future traffic growth will be reviewed in the following section to identify a growth rate for future projections considering the reductions in traffic volumes between 2020 and 2022.

A review of the traffic volumes from the 2013 Lakeview Ponds Subdivision Traffic Impact Study (TIS) Report has been undertaken to compare the 2022 projected volumes from this report to the actual 2022 count data collected by WSP. The TIS had projected a 2022 buildout year; with the COVID-19 pandemic ongoing since 2020, there appears to be delays in construction which have resulted in the proposed development not being fully constructed by 2022.

A comparison of volumes between the TIS report 2022 projections and WSP's 2022 counts indicate that at the intersection level, the 2022 WSP counts resulted in volumes that were between 47% and 64% of the 2022 traffic projections from the Lakeview Ponds TIS. 2022 counted volumes at the intersection of County Road 6 and Kildare Avenue were more comparable than the other intersections, representing approximately 90% and 81% of the 2022 projections from the TIA. The differences in traffic volumes recorded from WSP's traffic survey are likely attributed to a combination of the incomplete Lakeview Ponds development and the impacts of the pandemic on travel patterns in the Amherstview area. The comparison of the 2022 counts is summarized in **Figure 4-2**.

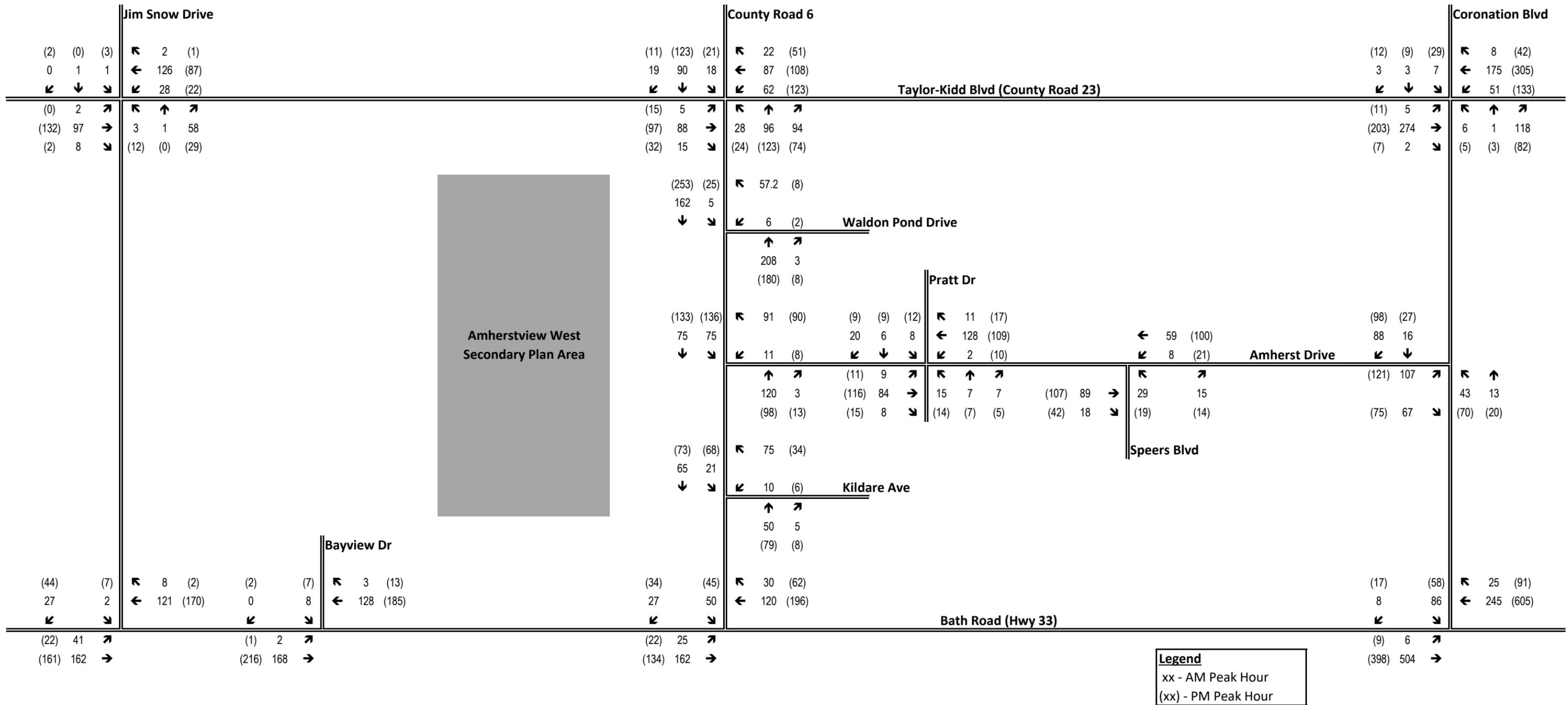
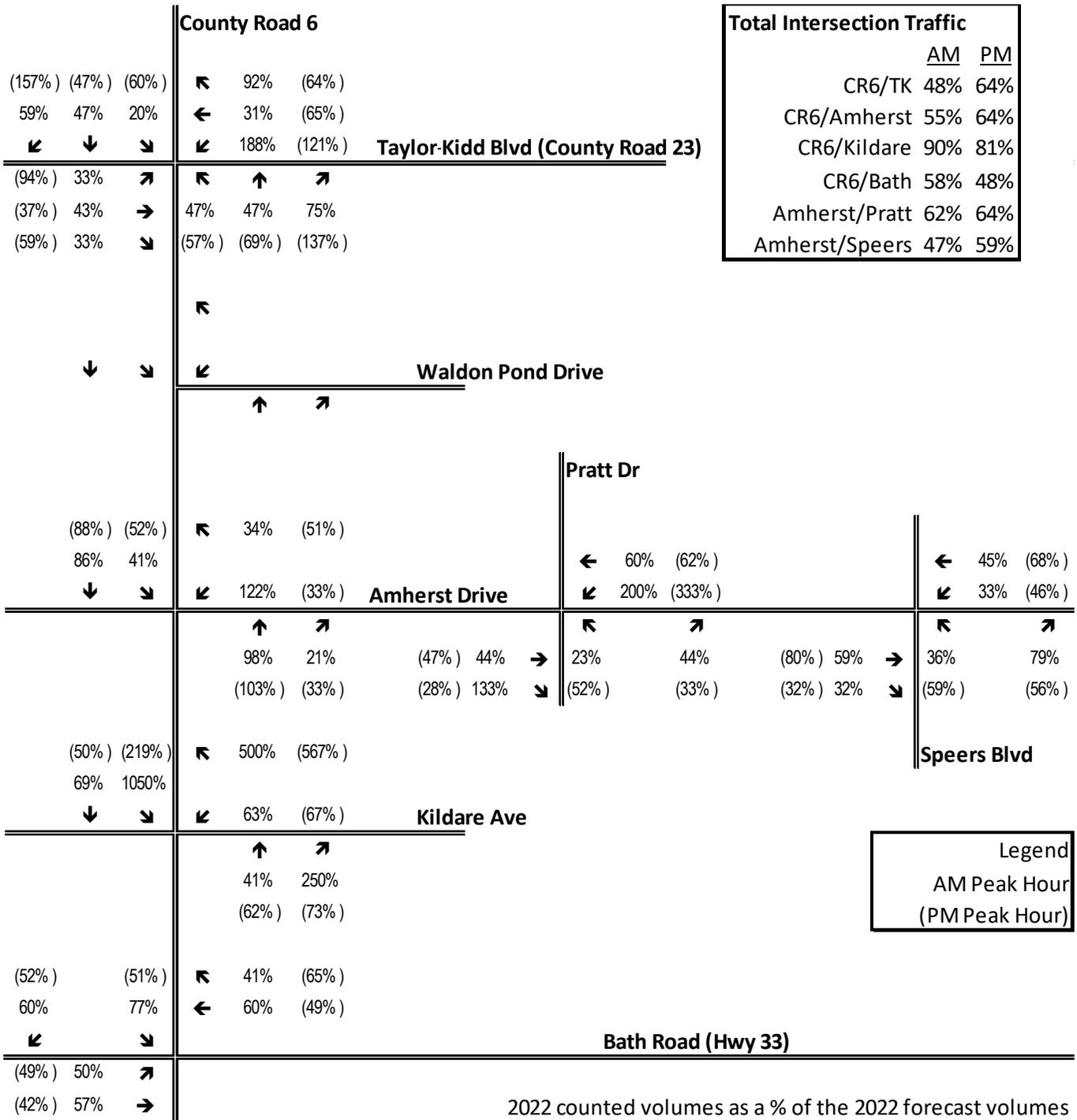


Figure 4-1: Existing Traffic Volumes - 2022 Traffic Counts



Legend
 AM Peak Hour
 (PM Peak Hour)

2022 counted volumes as a % of the 2022 forecast volumes

Figure 4-2: Comparison of 2022 Counted Volumes vs. 2022 Projected Volumes from Lakeview Ponds TIA

4.2 TRAFFIC ANALYSIS CRITERIA

Traffic analysis has been conducted using Synchro software (Version 11), which is based on the Highway Capacity Manual (HCM) methodology. Synchro assigns Level of Service (LOS) for each lane group according to the intersection delay, converted to a letter between A and F, based on the length of the delay. The letter assignment is also dependent on the control type of the intersection; signalized and unsignalized intersections have different LOS criteria. Typically, a LOS between A and D represents acceptable operations, E represents operations approaching capacity with noticeable congestion, and F represents operations exceeding capacity that will generate extensive congestion. **Table 4-1** shows the LOS criteria for the analysis for both signalized and unsignalized operations.

Table 4-1: HCM Intersection Level of Service Criteria

Unsignalized		Signalized	
Delay Per Vehicle (s)	Level Of Service (LOS)	Delay Per Vehicle (s)	Level Of Service (LOS)
≤10	A	≤10	A
10 to 15	B	10 to 20	B
15 to 25	C	20 to 35	C
25 to 35	D	35 to 55	D
35 to 50	E	55 to 80	E
>50	F	>80	F

Within the context of the County of Lennox and Addington 2014 TMP Update, operations on the study area roads have been expressed using volume to capacity (v/c) ratios; this measure is also reported by the Synchro software. The v/c ratio represents the capability of a transportation facility to accommodate the traffic demand. As the v/c ratio approaches 1.00 there is an increased possibility of delays and queuing as the traffic demand is near the capacity of the road. Once the v/c ratio exceeds 1.00, excessive delays and queues are expected.

Where applicable, analysis of roundabout configurations will be undertaken using SIDRA software (Version 8). This is another macroscopic software package which is also based on HCM methodology. SIDRA is better oriented for analysis of roundabout but reports LOS and v/c ratio for movements in a similar fashion to Synchro as described above.

4.3 TRAFFIC OPERATIONS ANALYSIS – 2022 EXISTING CONDITIONS

Traffic analysis has been carried out for turning movement counts collected at the 13 locations in January 2022 to model existing conditions during AM and PM peak hours. The analysis has been conducted using Synchro 11, a macroscopic traffic analysis software. The results of the traffic operations are summarized in **Table 4-2** below and the full Synchro reports are provided in **Appendix A**.



Table 4-2: Traffic Operations Analysis - 2022 Existing Conditions

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Taylor-Kidd Boulevard / County Road 6 (AWSC)								
EBLT	A	0.17	8.7	-	A	0.21	9.7	-
EBR	A	0.02	7	-	A	0.05	7.5	-
WBLT	A	0.27	10	-	B	0.43	12.5	-
WBR	A	0.03	6.9	-	A	0.08	7.4	-
NBLT	A	0.22	9.1	-	B	0.27	10.2	-
NBR	A	0.14	7.4	-	A	0.12	7.9	-
SBLT	A	0.19	8.9	-	B	0.27	10.3	-
SBR	A	0.03	7	-	A	0.02	7.6	-
County Road 6 / Waldon Pond Drive (TWSC)								
EB	-	-	-	-	-	-	-	-
WB	B	0.03	10.0	2.3	B	0.02	11.9	0.5
NB	A	0.13	0.0	0.0	A	0.12	0.0	0.0
SB	A	0.00	0.2	0.1	A	0.02	0.9	0.5
County Road 6 / Amherst Drive (TWSC)								
EB	-	-	-	-	-	-	-	-
WB	A	0.13	9.8	3.6	A	0.13	9.9	3.6
NB	A	0.08	0	0	A	0.08	0	0
SB	A	0.06	4.1	1.5	A	0.11	4.4	2.8
County Road 6 / Kildare Avenue (TWSC)								
EB	-	-	-	-	-	-	-	-
WB	A	0.09	9	2.5	A	0.05	9.3	1.3
NB	A	0.03	0	0	A	0.06	0	0
SB	A	0.01	1.9	0.4	A	0.05	3.8	1.3
Bath Road / County Road 6 (TWSC)								
EBL	A	0.02	7.6	0.5	A	0.02	7.8	0.5
EBT	A	0.11	0	0	A	0.08	0	0
WBT	A	0.08	0	0	A	0.12	0	0
WBR	A	0.02	0	0	A	0.04	0	0
SBLR	B	0.13	11.1	3.6	B	0.13	11.1	3.4
Bath Road / Coronation Boulevard (Signalized)								
EBL	A	0.01	5.8	2	A	0.02	5.8	2.4
EBT	A	0.43	7.6	72.2	A	0.30	6.3	48.7
WBT	A	0.21	5.8	30.8	A	0.46	7.8	84.3
WBR	A	0.02	2.6	3	A	0.08	1.7	5.6
SBLR	C	0.37	29.3	24	C	0.27	23.9	17.3



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Coronation Boulevard / Amherst Drive (TWSC)								
EBLR	B	0.27	11	8.6	B	0.35	12.5	12.4
NBLT	A	0.04	5.9	0.9	A	0.06	6.1	1.6
SBTR	A	0.08	0	0	A	0.10	0	0
Taylor-Kidd Boulevard / Coronation Boulevard (TWSC)								
EB	A	0.01	0.2	0.1	A	0.01	0.6	0.4
WB	A	0.05	2.2	1.3	A	0.10	3	2.8
NB	B	0.22	11.9	6.7	B	0.14	11.4	4
SB	C	0.06	20.6	1.7	C	0.22	23.9	6.6
Amherst Drive / Pratt Drive (TWSC)								
EB	A	0.01	0.7	0.2	A	0.01	0.6	0.2
WB	A	0.00	0.1	0	A	0.01	0.6	0.2
NB	B	0.05	10.8	1.3	B	0.05	11.1	1.2
SB	B	0.05	10	1.4	B	0.05	10.6	1.2
Amherst Drive / Speers Boulevard (TWSC)								
EBTR	A	0.07	0	0	A	0.10	0	0
WBLT	A	0.01	0.9	0.1	A	0.02	1.4	0.4
NBLR	A	0.06	9.6	1.5	A	0.05	10	1.2
Bath Road / Jim Snow Drive (TWSC)								
EBLT	A	0.03	1.8	0.8	A	0.27	9.1	-
WBT	A	0.08	0	0	A	0.27	8.4	-
WBR	A	0.01	0	0	A	0.00	5.9	-
SBLR	A	0.04	9.3	0.9	A	0.07	7.7	-
Taylor-Kidd Boulevard / Jim Snow Drive (TWSC)								
EB	A	0.00	0.2	0.1	A	0.00	0.0	0.0
WB	A	0.03	1.6	0.7	A	0.02	1.7	0.5
NB	A	0.10	9.7	2.6	B	0.07	10.1	1.7
SB	B	0.00	12.4	0.1	B	0.01	10.6	0.2
Bath Road / Bayview Drive (TWSC)								
EB	A	0.00	0.1	0.0	A	0.00	0.0	0.0
WB	A	0.08	0.0	0.0	A	0.13	0.0	0.0
SB	B	0.01	10.9	0.4	B	0.02	11.2	0.4
*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.								

The results of the traffic analysis indicate that all existing intersections operate at LOS C or better with residual capacity for future growth. Traffic operations at the existing stop-controlled intersections operate at acceptable levels of service with minimal delays and queues. Southbound movements at the signalized intersection at Bath Road / Coronation Boulevard operate at LOS C during both AM and PM peak hours. With the drop in travel resulting from the COVID-19



pandemic, traffic operations under existing 2022 conditions do not currently appear to be close to requiring the roadway facility improvements proposed in the County's TMP update.

4.4 BACKGROUND TRAFFIC GROWTH

4.4.1 ANNUAL TRAFFIC GROWTH

The 2014 TMP update indicates that the study area boundary roads of Taylor-Kidd Boulevard, County Road 6, Bath Road and Bayview Drive/Parrott's Bay Lane operate with a v/c ratio less than 0.5 and do not exhibit capacity problems, assuming a daily capacity of 4,000 vehicles for two-lane roads. The TMP update found that the population of Loyalist Township grew by 7.7% between 2006 to 2011, translating to an annual growth of 1.54%. Traffic projections from the 2012 base year to 2024 and 2034 were made considering population growth as well as future travel demands generated by proposed developments such as the Lakeview Ponds development in the Amherstview area. Appendix D of the TMP indicates annual growth rates of 2.46% and 0.03% for the AADT volumes on CR 6 and CR 23, respectively. With these annual growth rates, the TMP forecasts indicate that CR 6 is projected to operate at v/c ratios of 0.60 in 2024 and 0.76 in 2034; CR 23 was projected to operate with a v/c ratio below 0.60 in both 2024 and 2034. More recent growth rates provided by the Counties of Lennox and Addington indicate recent growth rates on CR6 and CR23 of 3.93% and 3.46% respectively.

A review of the Traffic Impact Study (TIS) of the Lakeview Ponds Subdivision, which takes a more detailed look at the traffic operations on CR 6, has been completed in preparation of this analysis. The TIS provides traffic data including background traffic growth on boundary roads and demand forecasting from the development considering trip generation and distribution. The study establishes a conservative annual traffic growth rate of 1.69% based on a comparison between the 2006-2011 population growth rate (1.54%) for Amherstview and MTO AADT data on Bath Road (Highway 33) (1.69%).

Projections in the Hemson Report to 2046 indicate a growth in population in Amherstview from 9,760 in 2021 to 12,400 by 2046, representing an annual growth rate of approximately 0.96% per year.

Based on a review of all available data including the TMP, TIS, Hemson Report projections, AADT for Bath Road (Highway 33) from MTO and AADT for CR 6 and CR 23 from the County of Lennox and Addington, an annual background traffic growth rate of 1.0% has been established as the basis for traffic projections to the 2046 horizon year, based on the population projections defined in the Growth Management Report. A higher annual growth rate of 1.69% per year has been applied to through traffic along Bath Road (Highway 33), corresponding to historical AADT growth and reflecting the use of this corridor by Loyalist Township as a whole and not limited to just the Amherstview community.

It is noted that the growth rates adopted for this study fall short of the more recent annual growth rates on County Roads 6 and 23 provided by Lennox and Addington Counties that fall between 3 and 4 percent. It is noted that per the Hemson Report projections, much of the growth within Loyalist Township expected in the future will be a result of development within the Amherstview West Secondary Plan area. With traffic growth being driven by development in the area, it is anticipated that development in the secondary plan area coming to fruition would be a key component of maintaining historical traffic growth trends into future years; it would be overly conservative to assume a background growth of 3-4 percent can be maintained exclusive of development within the Secondary Plan Area. It is for this reason that the 1.0% annual growth for the study area network and 1.69% for Bath Road have been adopted for the projection of future background volumes for this study; traffic growth accounting for background growth and future developments will be reviewed as part of the discussion of site generated traffic later in this report.

4.4.2 LAKEVIEW PONDS DEVELOPMENT

The Lakeview Ponds development TIA was prepared in 2013 and projected full buildout of the proposed development by 2022. As of 2022, only some of the proposed residential portions have been constructed, with the remainder of the development including the full commercial and industrial sectors still to be constructed. It is anticipated that by the 2046 horizon year, the full buildout of the Lakeview Ponds development will be completed.

2013 Lakeview Ponds included turning movement diagrams for existing, background and total traffic volumes, but included the site-generated traffic in table format only; as a site generated turning movement volumes were calculated as the difference between the 2022 total and 2022 background volumes from the TIA report. The resulting total site generated volumes are summarized in **Figure 4-3**.

As the traffic counts for the Amherstview West Secondary Plan Area project were collected in 2022 these counts will account for the Lakeview Ponds construction to date, but fall short of the 2022 traffic projections from the 2013 TIA that included the full development. In order to calculate the site generated traffic volumes from the portion of the Lakeview Ponds development that has not yet been constructed (i.e., the development generated volumes not already reflected in the 2022 traffic counts), the currently constructed unit count within the Lakeview Ponds subdivision was counted based on recent aerial imagery and compared with the total unit count as documented in the 2013 TIA report. This review indicates that as of the most recent imagery, the following amounts of the proposed Lakeview Ponds build-out (units or GFA) have been constructed to date:

- Residential Component Single Detached – 40%
- Residential Component Semi-Detached – 100%
- Residential Component Row House – 50%
- Residential Component Apartment – 100%
- Commercial – 0%
- Business Park – 0%
- Mixed Use Apartment – 0%
- Mixed Use Commercial – 0%

Based on the trip generation in the 2013 TIA report, the site generated trips associated with the portion of the development that has already been constructed represent approximately 32% of the AM peak hour and 19% of the PM peak hour trip generation by the full build out of the site. Based on this and the fact that none of the commercial area has been constructed to date, “net build-out” volumes have been estimated for the remaining portion of the Lakeview Ponds still to be constructed by removing the volumes associated with the build-out to date from the total site generated traffic volumes from the TIA report. The remaining “net build-out” volumes for the site generated traffic not accounted for in the 2022 traffic counts are summarized in **Figure 4-4**.

It is noted that the projected site generated volumes from Lakeview Ponds TIA will include the anticipated impacts of the future road network that connects Pratt Drive to Waldon Pond Drive within the proposed development. While this may represent the potential cut through traffic between Amherst Drive and County Road 6, the potential for this is likely to be low as a result of the relatively narrow road width and slow traffic speeds resulting from the surrounding residential use.

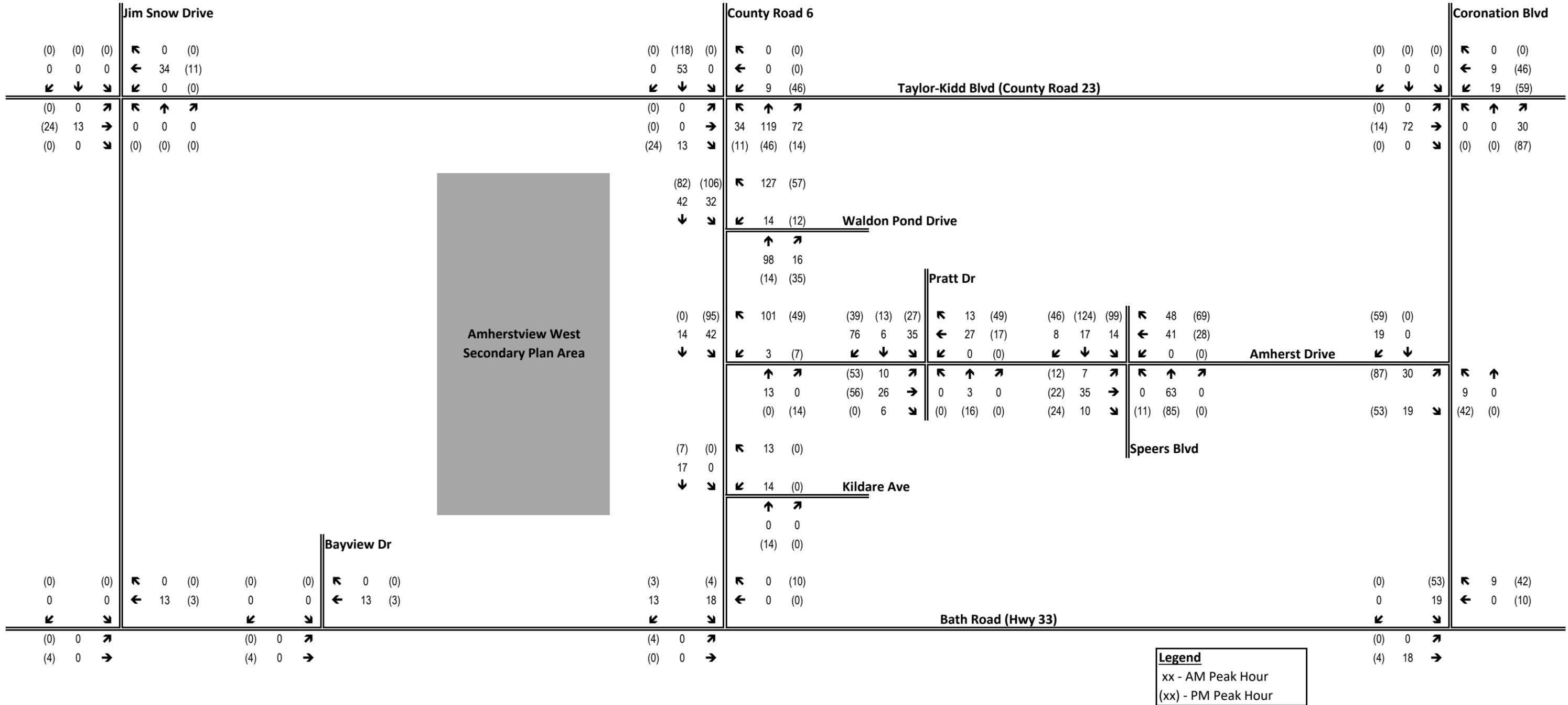


Figure 4-3: Lakeview Ponds Development Generation (Full)*

*Calculated from Lakeview Ponds TIA - Total 2022 minus Background 2022. Trips have been distributed through the remainder of the study area road network based on existing traffic patterns.

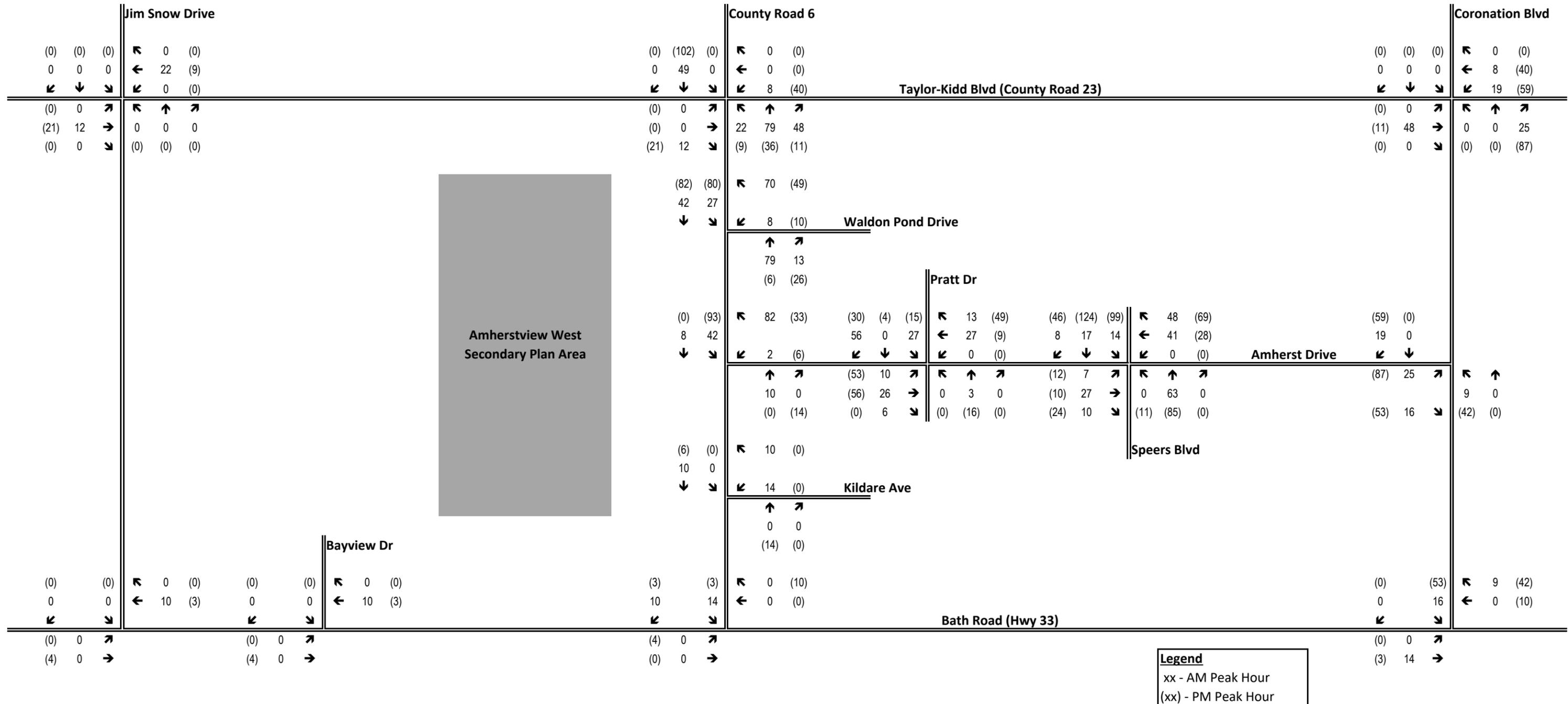


Figure 4-4: Lakeview Ponds Development Generation (Net)*

*Calculated from Lakeview Ponds TIA - Total 2022 minus Background 2022, minus trip generation from unit count constructed as of 2022. Trips have been distributed through the remainder of the study area road network based on existing traffic patterns.

4.4.3 INDUSTRIAL BACKGROUND DEVELOPMENTS

The 2022 Hemson update letter identified a growth of approximately 900 industrial jobs west of Amherstview as a result of a number of proposed industrial developments including the proposed Umicore Battery plant announced in 2022. Loyalist Township has provided traffic impact studies for three proposed developments in this area that would further influence the future traffic volumes at the study area intersections. The background development details are summarized in Table 4-3.

Table 4-3: Industrial Background Development Information

Industrial Background Development	Development Details	Traffic Study Source and Date
Ready Mix Plant	<ul style="list-style-type: none"> Office space and aggregate storage / concrete ready mix plant Build-out year: 2023 	McIntosh Perry Consulting Engineers Ltd., January 2023
Latham Pools Canada	<ul style="list-style-type: none"> Manufacturing / warehouse development Build-out year: 2026 	Jewell Engineering Inc., March 2021 Jewell Engineering Inc., October 2021 (Addendum #1)
Umicore Plant	<ul style="list-style-type: none"> Manufacturing facility for cathode active battery materials (CAM) Build-out year: 2025 	SNC-Lavalin, January 2023 (Excerpts only)

The ready mix plant will be completed in a single phase and the single access of CR 4 will use the existing Integrated Propane Industry driveway across from Doyle Road. The site will mainly consist of commercial vehicle traffic such as dump trucks, cement trucks, and water trucks.

Latham Pools will be located between Jim Snow Drive and CR 6, fronting on both Bath Road and Taylor-Kidd Boulevard. There will be two site accesses on Taylor-Kidd Boulevard.

The Umicore Plant will occupy 350 acres within the Taylor-Kidd Industrial Park.

The combined site generated traffic volumes from the traffic impact studies provided for the three developments are summarized in **Figure 4-5** and excerpts from each traffic impact study are provided in **Appendix B**. It is noted that in most cases the study areas in each traffic impact study either did not overlap or only partially overlapped with the Amherstview Secondary Plan analysis study area; in these cases, the industrial site generate traffic was distributed across the rest of the Amherstview West study area based on existing traffic patterns.

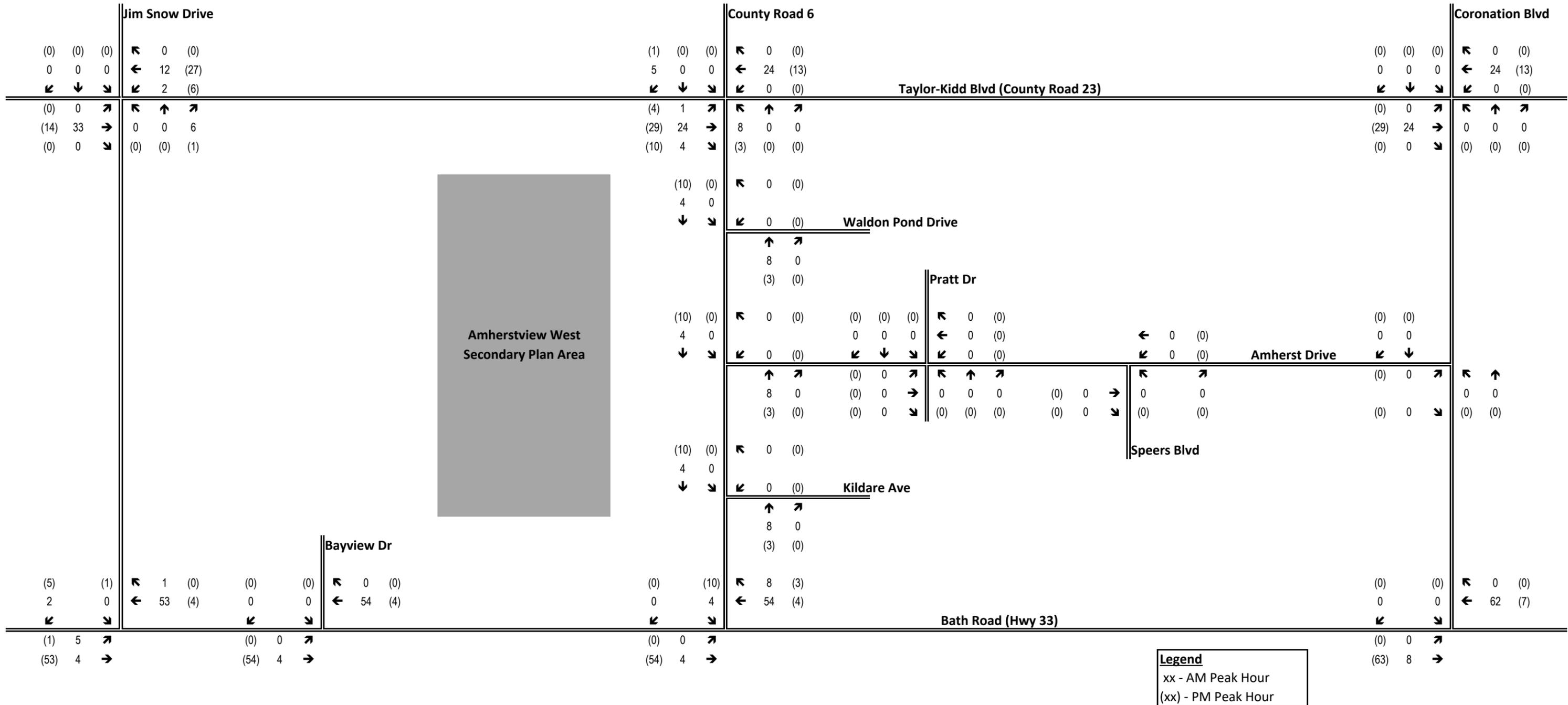


Figure 4-5: Industrial Lands Trip Generation

4.5 PLANNED ROAD IMPROVEMENTS

The County of Lennox and Addington has indicated various planned road improvements and limitations to intersection upgrades for the study area intersections. The traffic operations analysis for the future background and total traffic scenarios described in Sections 5 and 6 account for these intersection configuration and control upgrades that are anticipated to be completed before 2046. The intersection upgrades or limitations are as follows:

- Taylor-Kidd Boulevard / County Road 6: Planned to be converted from the existing all-way stop control to a roundabout in 2024 (see **Figure 4-6**). The Counties have indicated a right turn slip lane has been planned for the roundabout between 2040 and 2045.
- Taylor-Kidd Boulevard / Coronation Boulevard: Planned to be converted from the existing two-way stop control to a roundabout (see **Figure 4-7**).
- County Road 6 / Waldon Pond Drive: Planned to have a southbound auxiliary left-turn lane installed by 2025.
- Amherst Drive / Pratt Drive: To remain as two-way stop control based on proximity to the intersection of County Road 6 / Amherst Drive.
- Amherst Drive / Speers Boulevard: Planned to be converted from the existing T-intersection with stop control on the minor road (Speers Boulevard) to a four-legged intersection with all-way stop control to support the construction of the commercial component of the Lakeview Ponds Development.



Figure 4-6: Future Taylor-Kidd Blvd / CR 6 Roundabout (Source: County of Lennox and Addington TMP Update, 2014)



Figure 4-7: Future Taylor-Kidd Blvd / Coronation Blvd Roundabout (Source: County of Lennox and Addington TMP Update, 2014)

4.6 GROWTH SCENARIOS

The comparison between the traffic volumes collected in January 2022 and the 2022 forecasted volumes from the Lakeview Ponds TIA indicate a significant decrease in traffic volumes in the area from the TIA projections. As noted previously it is likely that much of the discrepancy is related to the restrictions that were in place in 2022 as a result of the COVID-19 pandemic and the resulting widespread adoption of remote work. Additionally, the full buildout of the Lakeview Ponds development has not been completed by 2022 as originally anticipated.

With remote working being adopted into ongoing operations by many employers, it is not certain if or how quickly traffic volumes will return to pre-COVID levels. For the purposes of projecting to the 2046 design year, future background volumes for this analysis will be based on two scenarios:

- 1 Low Growth** – The Low Growth scenario uses the 2022 counts as a basis, projected to the 2046 horizon year using an annual growth rate of 1.0% (1.69% for Bath Road) and adding in the remaining Lakeview Ponds development traffic and industrial trip generation to and from the west based on the traffic impact studies provided.
- 2 High Growth** – The High Growth Scenario is based on the 2022 background volumes from the 2013 Lakeview Ponds TIA; while dated, using this as a baseline maintains a conservative assumption of pre-COVID historical traffic growth and full recovery of traffic volumes to pre-COVID patterns by the 2022 base year. In some cases where the 2022 field counts indicated higher volumes than the 2022 projections in the Lakeview Ponds TIA, the 2022 field counts were used. These 2022 base volumes were then forecast to the 2046 horizon using the same 1.0% (1.69 for Bath Road) annual growth rates as the Low Growth Scenario and include the addition of the total Lakeview Ponds and industrial site generated traffic.

The 2046 Low Growth and High Growth future traffic volumes are summarized in **Figure 4-8** and

Figure 4-9, respectively.

It is again acknowledged that the 1.0% growth rate falls short of recent AADT growth rates on County Roads 6 and 23 provided by the Counties of Lennox and Addington that range between 3 and 4 percent. However, it is noted that the forecast background growth to the 2046 horizon year excludes the industrial development and remainder of the Lakeview Ponds development (which are added separately) and excludes the Amherstview Secondary Plan area which represents the majority of the growth in Amherstview per the Hemson Projections. As a result, the growth rate of 1.0% is considered appropriate for the background growth outside of planned local development; the combined impacts including the development will be examined as part of Trip Distribution.

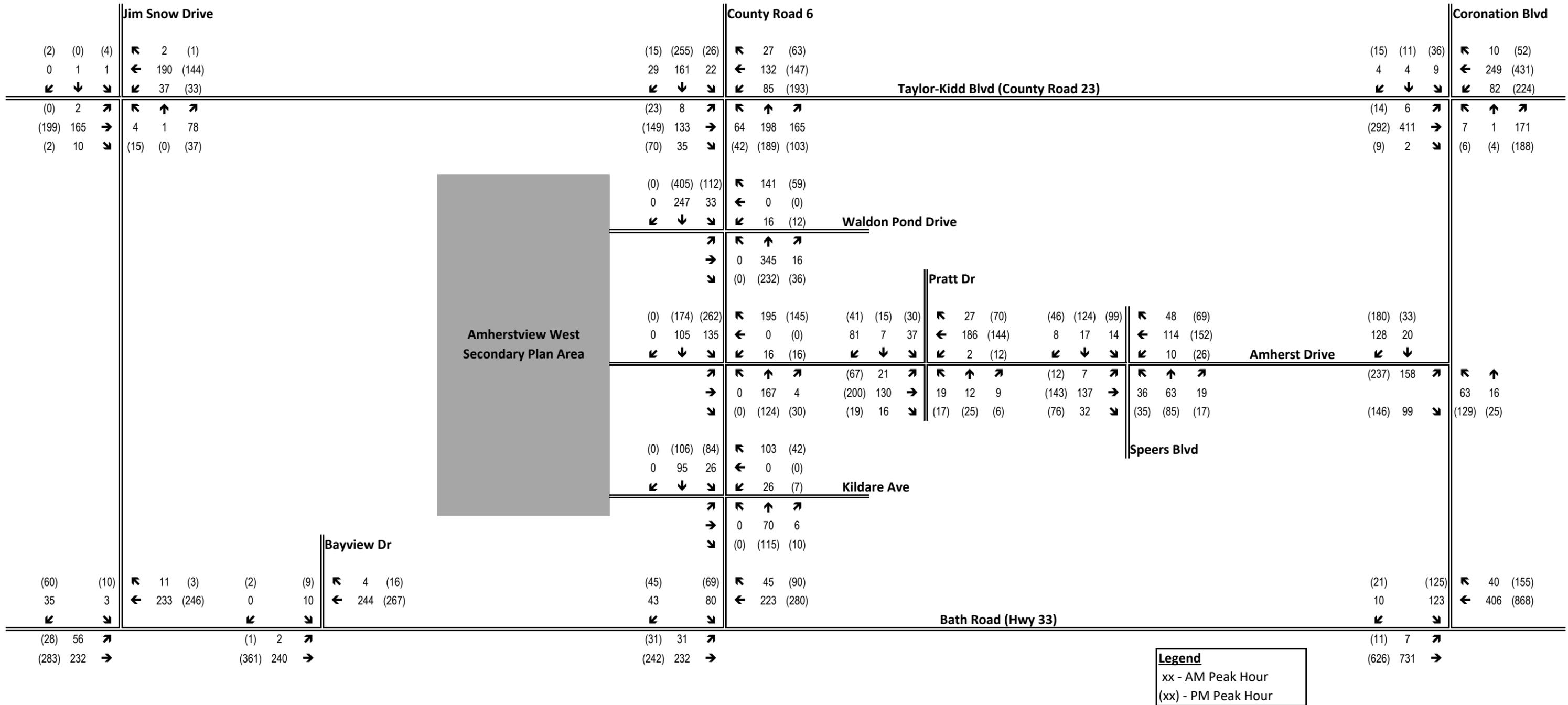


Figure 4-8: Future Background (2046) Low Growth (Based on 2022 Traffic Counts)

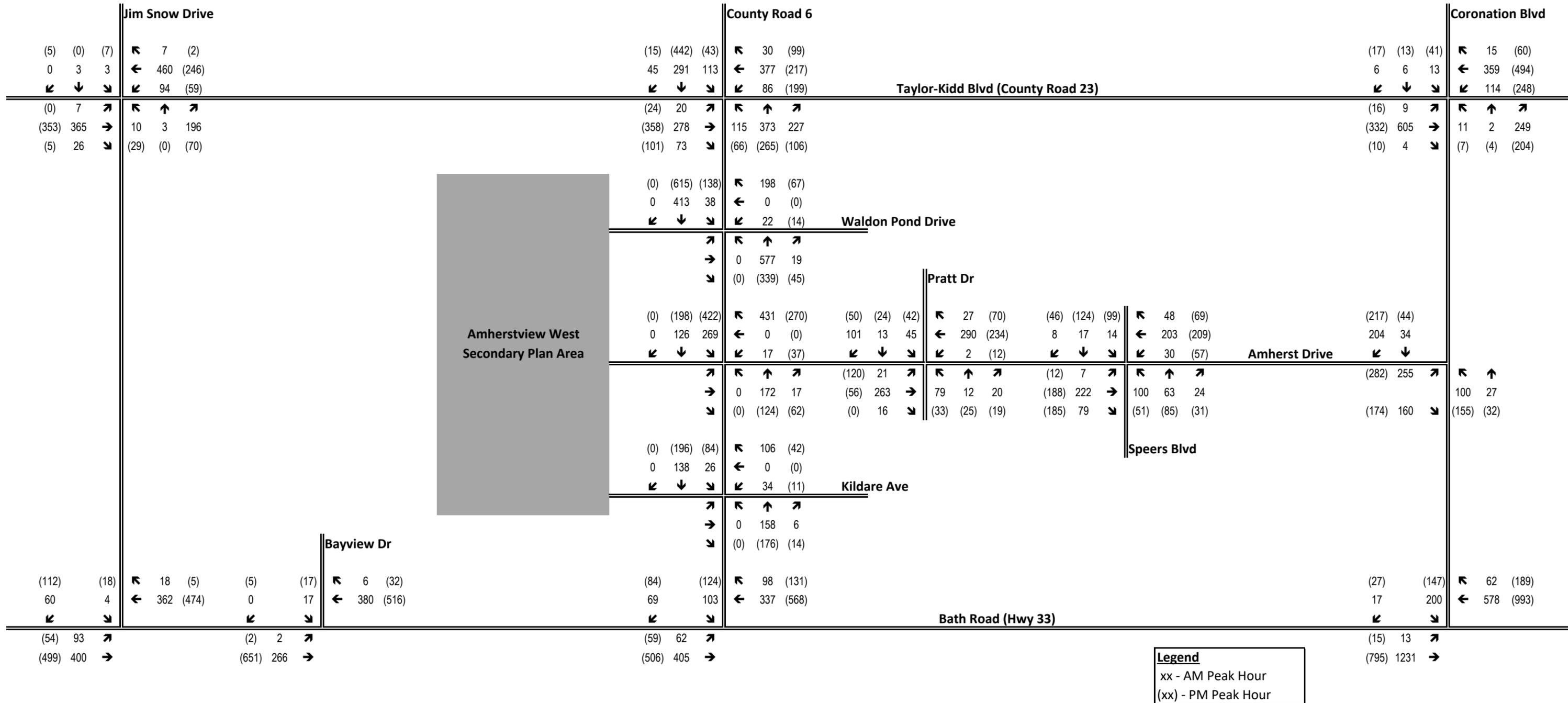


Figure 4-9: Future Background (2046) High Growth

4.7 DEVELOPMENT GENERATED TRAFFIC

4.7.1 RESIDENTIAL AND COMMERCIAL TRIPS

Traffic generated by the proposed development in the Secondary Plan area has been estimated based on the forecast residential unit count by type adopted from the WSP Growth Management Report as identified previously, and Trip Generation Rates adopted from the ITE Trip Generation Manual 11th Edition. These trip rates provide an estimate of the trips generated per unit during weekday peak hours and a directional split of trips entering and leaving the Secondary Plan area.

For the commercial land uses within the Secondary Plan area, details on the commercial gross floor area (GFA) and specific commercial uses were not available at the time of this study. As a result, commercial trip generation has been based on the higher bound projection of 130 commercial jobs in the Secondary Plan area by 2046, and ITE medium general shopping centre (Category 821, without grocery store) trip rates based on number of employees. This approach allows the estimation of commercial generated trips based on the projected number of employees.

With both residential and commercial land uses within the Secondary Plan Area, it is anticipated that some of the commercial trip generation will consist of residents of the Secondary Plan area. The site trip generation using for the purposes of this study includes a 10% reduction in trip generation to reflect the internal interactions between the residential and commercial uses; more detailed internal capture rates are a function of the specific site layout and commercial use and will have to be refined at the site plan control stage.

4.7.2 SCHOOL TRIPS

Limestone District School Board has expressed interest in a block in the Secondary Plan Area being set aside for a new elementary school. WSP and Loyalist Township met with a representative of Limestone District School Board to discuss the assumptions for the potential new school on the Amherstview West SPA on September 14, 2023. Based on growth projections, LDSB projects a yield of 500-600 new school aged children in the Amherstview West SPA, 400-500 of which will be elementary aged. LDSB typically captures 70-80% of the population (with the remainder going to other boards), but this has been closer to 100% in some cases, particularly if special programming is offered at the school. As a result LDSB indicated for planning purposes they would assume the new elementary school to have a capacity of 400-600 students. LDSB staff indicated that Amherstview PS is currently over capacity, but it would be premature to estimate a catchment area for the new school and whether it would overlap the catchment area of the existing schools in Loyalist Township. LDSB would be interested in minimizing bussing and thus it is not anticipated that the new school boundaries would extend to Odessa or other surrounding communities.

In the absence of a defined catchment area and student population distribution for the Secondary Plan Area, trip generation data for Southview Public School in Napanee was used as a proxy for the anticipated school trip generation in the Amherstview West Secondary Plan area. Southview Public School is also operated by the Limestone District School Board and lies on the southern edge of the Napanee Urban area and thus has a catchment area that includes portions of the urban area as well as the surrounding rural areas, similar to what is expected for the new school site in the Amherstview West Secondary Plan area. Southview Public School offers grades JK-8 and has a current student population of approximately 600, which would be similar to the upper end of the student population expected at the new school in the Amherstview West Secondary Plan Area. As Southview PS is also located on the edge of the Napanee urban boundary without directly adjacent residential, and as such is likely to attract a lower proportion of walking trips than the new school in the Amherstview West SPA. As a result, using the auto trip generation from Southview PS is likely to be an appropriate, if conservative estimation of auto trip generation at the potential new school.



Trip Generation for Southview Public School was obtained from traffic count data provided by the Counties of Lennox and Addington for the school accesses and included approximately 200 and 70 vehicle trips that coincided with the AM and PM commuter peak hours, respectively. Based on the counts from Southview PS provided by the Counties, student pickup and drop-off is 100 trips in & out in the morning and 35 in the afternoon, which represent about 16% and 6% of the student population, respectively.

4.7.3 AMHERSTVIEW WEST SECONDARY PLAN AREA TRIP GENERATION

Trip generation projections for the Secondary Plan area assuming full build out by 2046 are summarized in **Table 4-4**.

Table 4-4: Amherstview West Secondary Plan Area Trip Generation Forecasting

Weekday AM Peak Hour									
Land Use	ITE Code	Size	Unit	Avg. Rate	% in	% out	Total Trips	Trips In	Trips Out
Low Density	210	550	Units	0.7	26%	74%	385	100	285
Medium Density	220	410	Units	0.4	24%	76%	164	39	125
High Density	221	40	Units	0.37	23%	77%	15	3	11
Commercial	820	130	Employees	1.73	53%	47%	225	119	106
School	-	600	Students	-	50%	50%	200	100	100
Internal Capture				10%	50%	50%	-99	-49	-49
Total New Trips							890	313	577

Weekday PM Peak Hour									
Land Use	ITE Code	Size	Unit	Avg. Rate	% in	% out	Total Trips	Trips In	Trips Out
Low Density	210	550	Units	0.94	63%	37%	517	326	191
Medium Density	220	410	Units	0.51	63%	37%	209	132	77
High Density	221	40	Units	0.39	61%	39%	16	10	6
Commercial	820	130	Employees	1.91	51%	49%	248	127	122
School	-	600	Students	-	50%	50%	70	35	35
Internal Capture				10%	50%	50%	-106	-53	-53
Total New Trips							954	576	378

Based on the projected unit and commercial employee population, the projected trip generation by the Secondary Plan area will be approximately 890 AM peak hour and 950 PM peak hour vehicle trips. These trips are further split between the inbound and outbound directions.

It is noted that the projected trip generation based on ITE Trip Generation rates is understood to reflect vehicle trip generation only and does not reflect the additional proportion of the population that will opt to use transit or active modes (walking and cycling). As the County of Lennox and Addington Transportation Master Plan or Loyalist Township planning documents do not specify model share projections or targets, this analysis conservatively based on the trip projections developed above is based on the existing mode share being maintained. As transit service and active transportation infrastructure in Amherstview is further expanded and developed in the future, this may provide the opportunity for these alternative modes to replace some of the anticipated growth in auto trips and result in decreases to the traffic volume projections.

4.8 SECONDARY PLAN LAND USE CONCEPTS

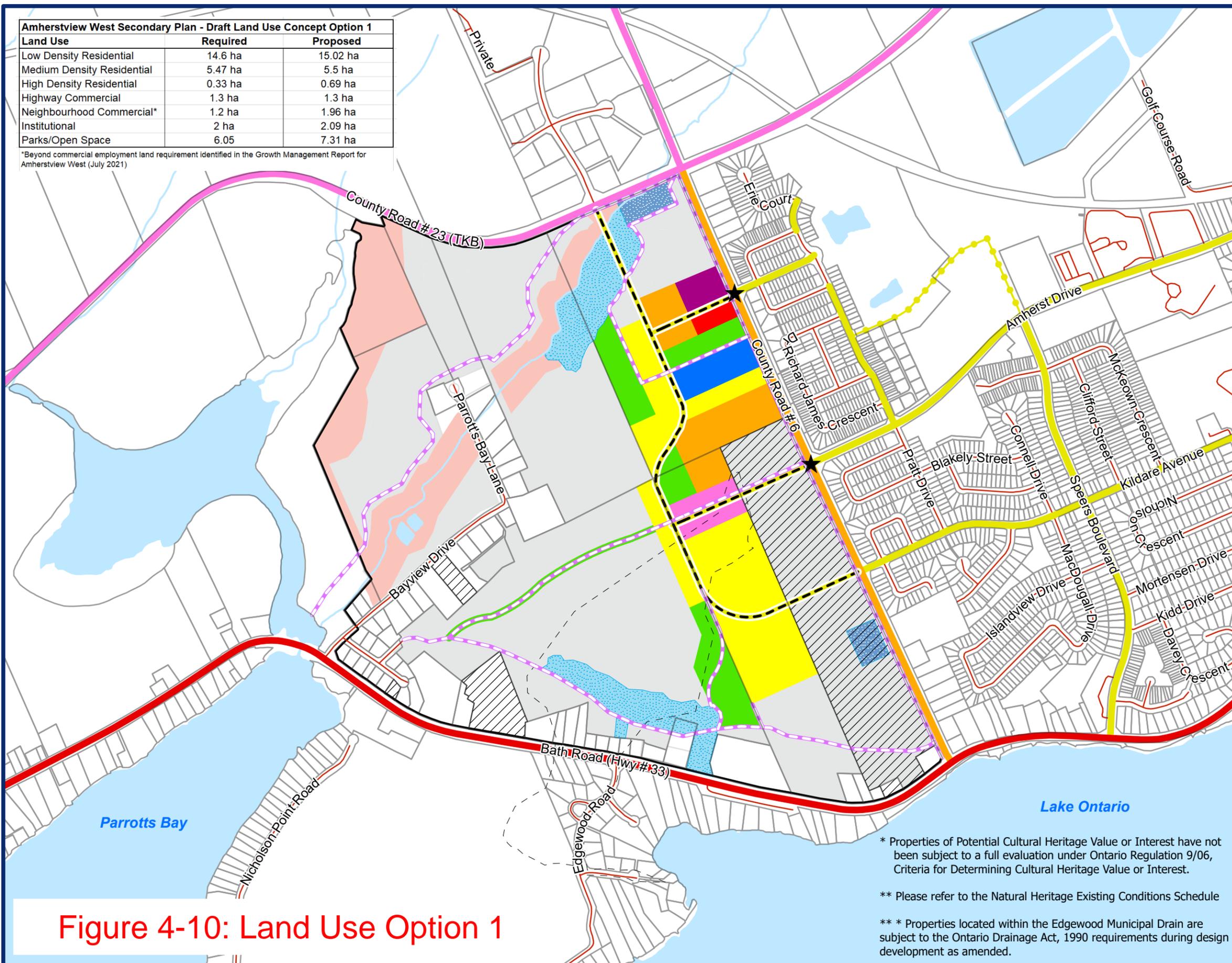
As part of the development of the Secondary Plan, three land use concepts have been prepared; these concepts are illustrated in **Figure 4-10** to **Figure 4-12**.

Amherstview West Secondary Plan - Draft Land Use Concept Option 1		
Land Use	Required	Proposed
Low Density Residential	14.6 ha	15.02 ha
Medium Density Residential	5.47 ha	5.5 ha
High Density Residential	0.33 ha	0.69 ha
Highway Commercial	1.3 ha	1.3 ha
Neighbourhood Commercial*	1.2 ha	1.96 ha
Institutional	2 ha	2.09 ha
Parks/Open Space	6.05	7.31 ha

*Beyond commercial employment land requirement identified in the Growth Management Report for Amherstview West (July 2021)

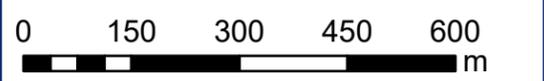


Conceptual Land Use - Option 1



Amherstview West Secondary Plan

- Secondary Plan Study Area
- Conceptual Land Use**
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighbourhood Commercial
- Highway Commercial
- Institutional
- Parks/Open Space
- Multi-Use Pathway with Linear Park
- Municipal Stormwater Management
- Municipal Wastewater Facilities
- Potential Future Development Area
- Gateway Feature
- Conceptual Road Network**
- Proposed Collector
- Proposed Multi-Use Pathway
- Existing Road Network**
- Provincial Highway
- Major Arterial
- Urban Arterial
- Urban Collector
- Local
- Future Roads**
- Urban Collector
- Cultural Heritage**
- * Property with Potential Heritage Value
- Development Constraint**
- ** High Constraint – Natural Environment Area
- Servicing**
- *** Edgewood Municipal Drain



June 7, 2022
Source: Loyalist Township; LIO

WSP 2611 Queensview Drive Suite 300
Ottawa, ON K2B 8K2
Canada
www.wsp.com

Figure 4-10: Land Use Option 1

* Properties of Potential Cultural Heritage Value or Interest have not been subject to a full evaluation under Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest.

** Please refer to the Natural Heritage Existing Conditions Schedule

*** Properties located within the Edgewood Municipal Drain are subject to the Ontario Drainage Act, 1990 requirements during design development as amended.

Amherstview West Secondary Plan - Draft Land Use Concept Option 2		
Land Use	Required	Proposed
Low Density Residential	14.6 ha	14.74 ha
Medium Density Residential	5.47 ha	5.47 ha
High Density Residential	0.33 ha	0.65 ha
Highway Commercial	1.3 ha	1.37 ha
Neighbourhood Commercial*	1.2 ha	1.6 ha
Institutional	2 ha	2.05 ha
Parks/Open Space	6.05	6.7 ha

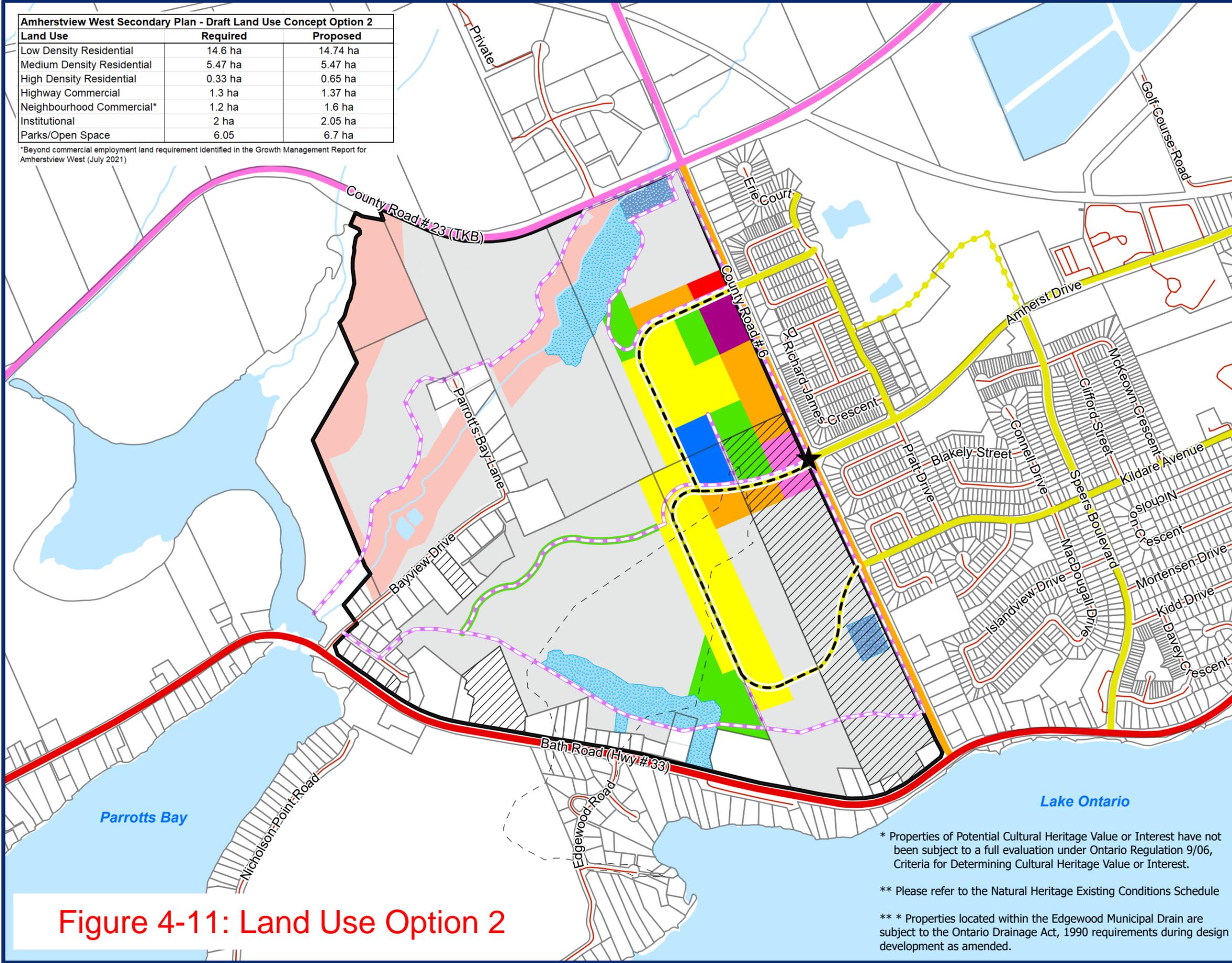
*Beyond commercial employment land requirement identified in the Growth Management Report for Amherstview West (July 2021)



Conceptual Land Use - Option 2

Amherstview West Secondary Plan

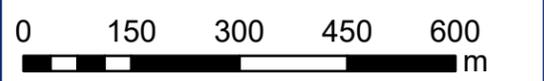
- Secondary Plan Study Area
- Conceptual Land Use**
 - Low Density Residential
 - Medium Density Residential
 - High Density Residential
 - Neighbourhood Commercial
 - Highway Commercial
 - Institutional
 - Parks/Open Space
 - Multi-Use Pathway with Linear Park
 - Municipal Stormwater Management
 - Municipal Wastewater Facilities
 - Potential Future Development Area
- Gateway Feature
- Conceptual Road Network**
 - Proposed Collector
 - Proposed Multi-Use Pathway
- Existing Road Network**
 - Provincial Highway
 - Major Arterial
 - Urban Arterial
 - Urban Collector
 - Local
- Future Roads**
 - Urban Collector
- Cultural Heritage**
 - * Property with Potential Heritage Value
- Development Constraint**
 - ** High Constraint – Natural Environment Area
- Servicing**
 - *** Edgewood Municipal Drain



* Properties of Potential Cultural Heritage Value or Interest have not been subject to a full evaluation under Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest.

** Please refer to the Natural Heritage Existing Conditions Schedule

*** Properties located within the Edgewood Municipal Drain are subject to the Ontario Drainage Act, 1990 requirements during design development as amended.



June 7, 2022
Source: Loyalist Township; LIO

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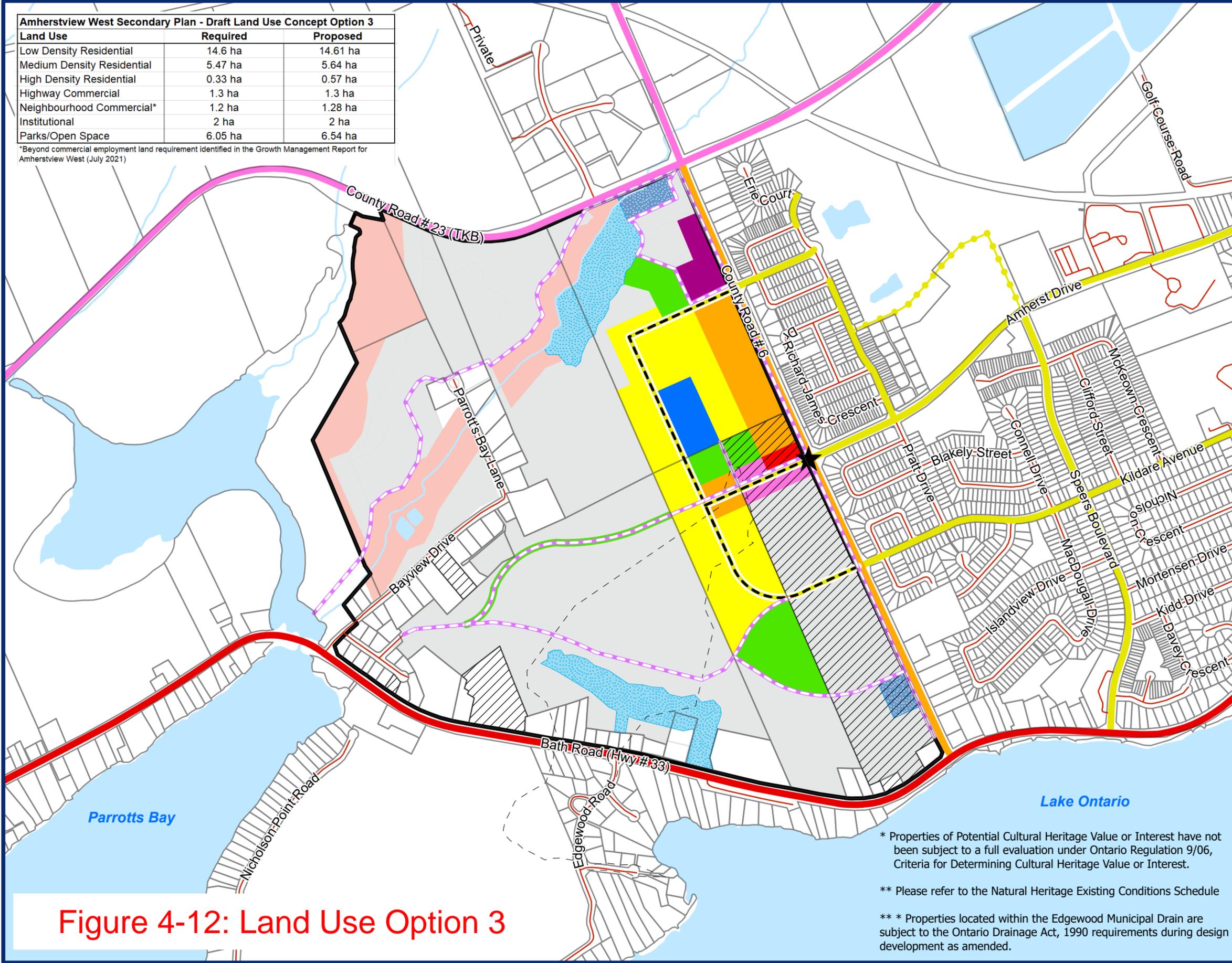
Figure 4-11: Land Use Option 2

Amherstview West Secondary Plan - Draft Land Use Concept Option 3		
Land Use	Required	Proposed
Low Density Residential	14.6 ha	14.61 ha
Medium Density Residential	5.47 ha	5.64 ha
High Density Residential	0.33 ha	0.57 ha
Highway Commercial	1.3 ha	1.3 ha
Neighbourhood Commercial*	1.2 ha	1.28 ha
Institutional	2 ha	2 ha
Parks/Open Space	6.05 ha	6.54 ha

*Beyond commercial employment land requirement identified in the Growth Management Report for Amherstview West (July 2021)

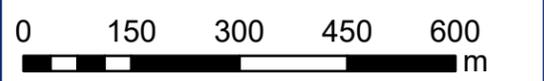


Conceptual Land Use - Option 3



Amherstview West Secondary Plan

- Secondary Plan Study Area
- Conceptual Land Use**
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighbourhood Commercial
- Highway Commercial
- Institutional
- Parks/Open Space
- Multi-Use Pathway with Linear Park
- Municipal Stormwater Management
- Municipal Wastewater Facilities
- Potential Future Development Area
- Gateway Feature
- Conceptual Road Network**
- Proposed Collector
- Proposed Multi-Use Pathway
- Existing Road Network**
- Provincial Highway
- Major Arterial
- Urban Arterial
- Urban Collector
- Local
- Future Roads**
- Urban Collector
- Cultural Heritage**
- * Property with Potential Heritage Value
- Development Constraint**
- ** High Constraint – Natural Environment Area
- Servicing**
- ** Edgewood Municipal Drain



June 7, 2022
Source: Loyalist Township; LIO

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Canada
www.wsp.com

Figure 4-12: Land Use Option 3

* Properties of Potential Cultural Heritage Value or Interest have not been subject to a full evaluation under Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest.

** Please refer to the Natural Heritage Existing Conditions Schedule

*** Properties located within the Edgewood Municipal Drain are subject to the Ontario Drainage Act, 1990 requirements during design development as amended.



From a transportation perspective, all three concepts include a collector road extending into the Secondary Plan area opposite Amherst Drive, which meets a second collector road travelling north-south through the area. To the south, the north-south collector road gradually curves back to the east and provides a second connection to County Road 6 opposite Kildare Avenue. To the north, the collector road also curves to the east and provides a third connection to County Road 6 opposite Waldon Pond Drive. The key differences between the three land use options include the following:

- Option 1 includes the internal north-south collector road extending all the way to the north of the site, providing an access to Taylor-Kidd Boulevard approximately opposite William Henderson Drive. A short collector road segment is provided in this option to maintain a connection to County Road 6 opposite Waldon Pond Drive similar to the other options. This is the only land use option that includes a fourth road connection to the Secondary Plan area.
- Option 2 includes only three accesses, all to County Road 6 opposite Waldon Pond Drive, Amherst Drive and Kildare Avenue. The south collector road segment is continuous from the Amherst Drive access south to the Kildare Avenue access, with the north collector road segment branching off of this alignment. The south collector road in this road is the most circuitous of all of the options and provides the greatest coverage of potential development lands in the southern portion of the Secondary Plan area.
- Option 3 includes the same three accesses to County Road 6 as Option 2. Within the development area, this option includes a continuous north-south collector road, meeting the central collector road from Amherst Drive at a T-intersection.

With the analysis of traffic operations of the land use concepts focusing on the impacts to the surrounding road network, the analysis of traffic volumes has been based on two scenarios, one reflecting Option 1 and the second reflection both Options 2 and 3 as the access configuration is the same. The distribution of traffic volumes among the available accesses to County Road 6 and Taylor-Kidd Boulevard will ultimately be dependant on the specific development within the Secondary Plan area; for the purposes of this planning level analysis, trip distribution has been based on an even distribution of site generated traffic among all of the available accesses. The same development trip generation volumes identified in the preceding section have been used for the analysis of both options, with only the road and access configurations differing between the two.

A Traffic Calming technical memo prepared as part of the ongoing development of the Loyalist Township Infrastructure Master Plan was reviewed in the development of this report. This memo indicates that historical collision data and resident feedback have highlighted safety concerns and an elevated risk of collisions on collector roads with direct driveway access from adjacent residential land uses. As a result, the Township has indicated a preference for collector roads to be implemented to serve as connections to local roads without direct driveway access. The configuration of the collector roads in all three land use alternatives are conducive to this approach; the specific local road network and orientation of the surrounding residential land use will be determined through subsequent plans of subdivision and should be directed to follow this approach. Additional information on the traffic calming policy in development is documented in Section 9 of this report.

4.9 TRIP DISTRIBUTION

4.9.1 SITE GENERATED TRIP DISTRIBUTION

Distribution of the development generated traffic is based on analysis of local traffic patterns observed in the January 2022 turning movement counts on County Road 6 to and from Taylor-Kidd Boulevard and Bath Road, as well as a review of the land uses in the area and the number of accesses considered for the different options of the Secondary Plan land use concepts. It is noted that the Lennox and Addington Transportation Master Plan indicates that Bath Road (Highway 33) will experience congestion under future traffic growth and widening of this corridor will not be possible. As a result, future trip distribution has been assumed to favour the use of Taylor-Kidd Boulevard over Bath Road for new trips to and from Kingston to the east.

The trip distribution applied for the site generated traffic from the Amherstview West Secondary Plan area is summarized in **Figure 4-13**.

During the morning peak period, 34% of the inbound trips have been distributed from Taylor-Kidd Boulevard and 33% from Bath Road. During the afternoon peak period, 46% of inbound trips are distributed from Taylor-Kidd Boulevard and 29% from Bath Road. During the morning peak period, 44% of the outbound trips will head north to Taylor-Kidd Boulevard while 31% head south to Bath Road; the remaining 24% will use County Road 6, Amherst Drive, and Kildare Avenue. During the afternoon peak period, 32% of the outbound trips will head north to Taylor-Kidd Boulevard while 32% head south to Bath Road and the remaining 36% using County Road 6, Amherst Drive, and Kildare Avenue.

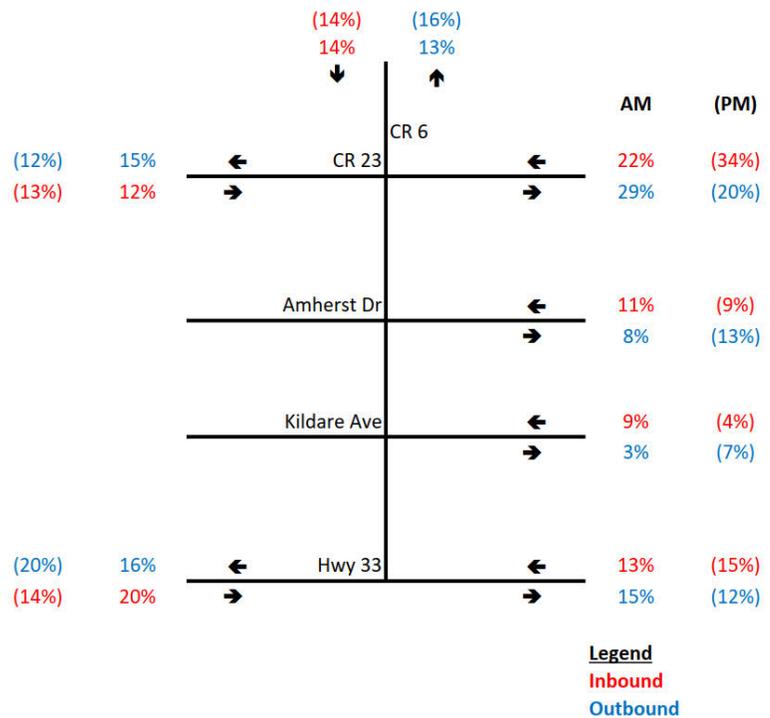


Figure 4-13: Trip Distribution

As the 2022 Hemson Update indicates that the proposed industrial developments to the west will not impact the housing unit projections for the Amherstview West Secondary Plan area, no specific linkages have been assumed between the Secondary Plan Area and the development to the west.

The resulting distribution of the Secondary Plan area trip traffic generation for Land Use Options 1 and 2/3 is summarized in **Figure 4-14** and **Figure 4-15**, respectively. It is anticipated that the trip generation will be further refined through future traffic impact studies to support subdivision and site plan applications for specific land uses within the Amherstview West Secondary Plan Area as specific development plans evolve.

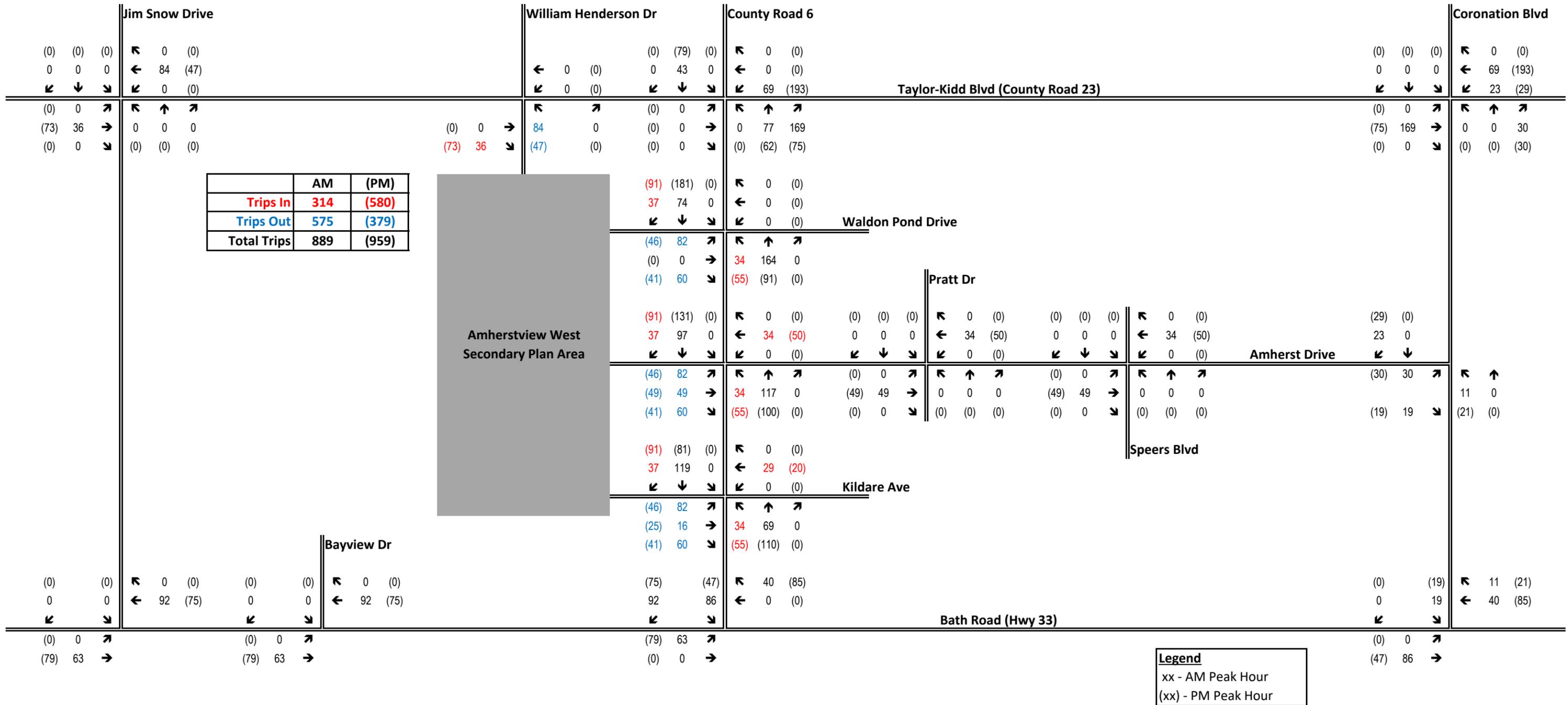


Figure 4-14: Development Generated Traffic - Option 1

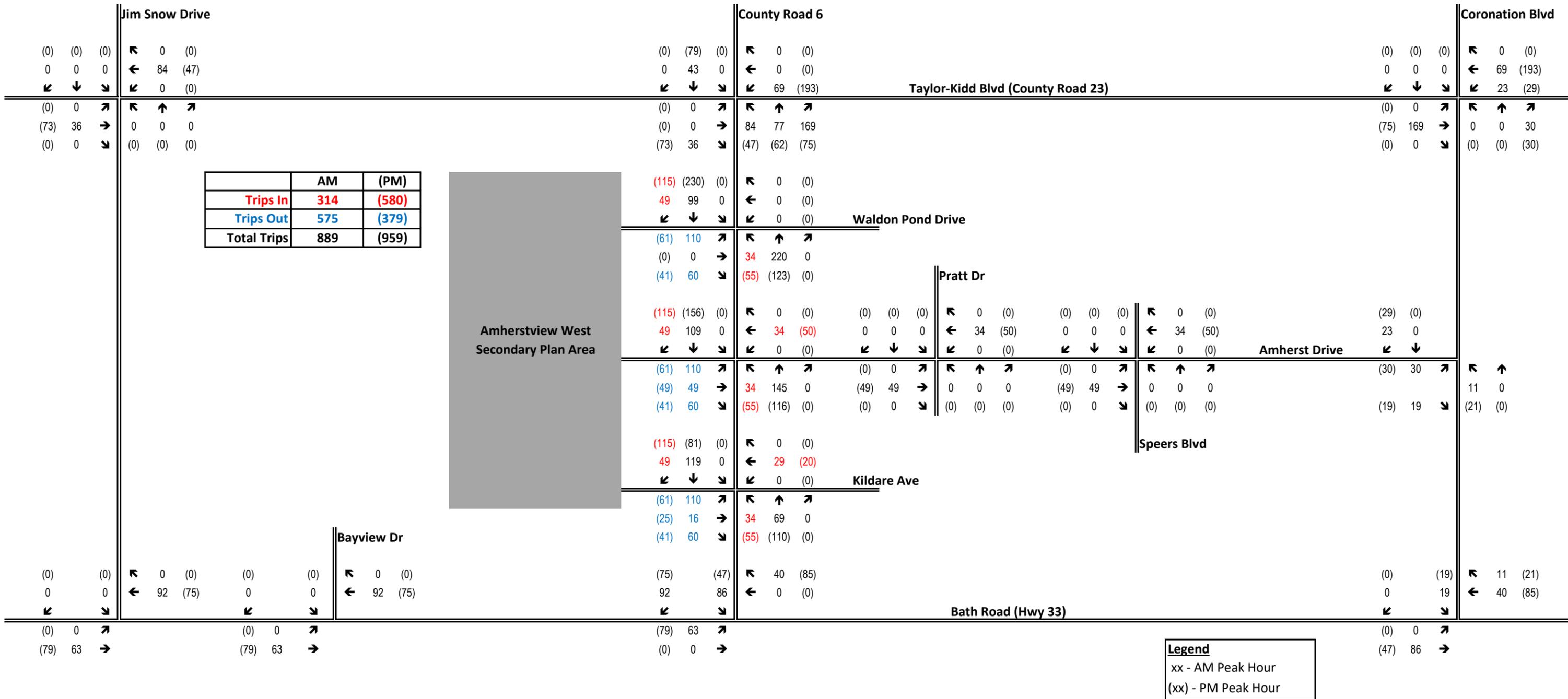


Figure 4-15: Development Generated Traffic - Options 2/3



4.9.2 COMBINED TRAFFIC GROWTH RATES

It is noted that a number of different growth rates have been reported for the County Road network in the vicinity of the Amherstview West Secondary Plan Area in recent years. Recently reported annual growth rates include the following:

- County Road 6
 - 2.46% - Lennox and Addington TMP (2014) Appendix D
 - 3.93% - Provided by Lennox and Addington Counties (2022)
- County Road 23 (Taylor-Kidd Boulevard)
 - 0.03% - Lennox and Addington TMP (2014) Appendix D
 - 3.46% - Provided by Lennox and Addington Counties (2022)

It is noted that the 1.0% that was applied for the background traffic volume projections fall short of most of the reported growth rates on the nearby County Road network. However, it is also noted that per the Hemson projections, much of the future growth in Loyalist Township that would drive traffic growth will be a result of the potential development within the Amherstview West Secondary Plan area lands. As development in these lands is being accounted for separately in this analysis, the application of a higher growth rate would run the risk of double counting the impacts of this future development and resulting in unrealistically high future traffic projections.

In order to provide a comparison to the traffic growth rates provided by Lennox and Addington Counties, the 2046 total traffic projections have been compared with the 2022 baseline volumes to determine the resulting growth rates as a result of the 1.0% background growth rate, proposed industrial development to the west, completion of the Lakeview Ponds Development and full build-out of the Amherstview West Secondary Plan area to the unit count estimated in the Hemson Projections. For the high growth scenario, the calculated growth rates are also based on the 2022 field traffic counts and therefore factor in any potential return to the pre-COVID traffic patterns in the future approximated by the 2022 projections from the 2013 Lakeview Ponds TIA. The comparisons have been undertaken on all four legs of the County Road 6 / County Road 23 (Taylor-Kidd Boulevard) intersection and are summarized in **Table 4-5**.

Table 4-5: Growth Rate Comparison

	2022 Volume		2046 Total Volume		% Growth 2022-2046		Annual Growth Rate	
	AM	PM	AM	PM	AM	PM	AM	PM
LOW GROWTH SCENARIO								
CR6 S of CR23	385	499	1186	1379	208%	176%	8.7%	7.4%
CR6 N of CR 23	250	344	564	711	126%	107%	5.2%	4.4%
CR23 W of CR6	242	287	520	566	115%	97%	4.8%	4.0%
CR23 E of CR 6	371	474	802	949	116%	100%	4.8%	4.2%
HIGH GROWTH SCENARIO								
CR6 S of CR23	385	499	1643	1707	327%	242%	13.6%	10.1%
CR6 N of CR 23	250	344	992	1029	297%	199%	12.4%	8.3%
CR23 W of CR6	242	287	1028	901	325%	214%	13.5%	8.9%
CR23 E of CR 6	371	474	1349	1291	264%	172%	11.0%	7.2%

The growth rate review indicates that for the low growth rate, the 1.0% background growth plus the individual impacts of the proposed development in the area results in combined annual growth rates of between 4.0% and 5.2% for Taylor-Kidd Boulevard and County Road 6 north of Taylor-Kidd Boulevard. South of County Road 6, the more concentrated impacts of the proposed developments result in a combined annual growth rate of up to 8.7% per year to the 2046 horizon. These



growth rates are more pronounced in the high growth scenario, where the calculated rates also factor in a potential return of the baseline volumes to pre-COVID patterns in addition to the proposed development. In this case, the resulting high growth annual growth rates equate to between 11% and 14% during the AM peak hour and between 7% and 10% during the PM peak hour.

As the combination of the 1.0% background growth and distribution of the proposed development traffic results in annual growth rates to the 2046 horizon that meet or exceed the historical growth rates identified by Lennox and Addington Counties, it is anticipated that any additional increase to the 1.0% background rate originally assumed based on population growth is likely to result in double counting of the development generated traffic anticipated in the area to the 2046 analysis horizon. As a result, the 1.0% background growth rate has been maintained for the purposes of analysis in this study, with the understanding that the development traffic in the area will increase this growth to meet or exceed the historical trends identified.



5 TRAFFIC OPERATIONS ANALYSIS – LOW GROWTH SCENARIO

5.1 2046 BACKGROUND CONDITIONS, LOW GROWTH SCENARIO

Traffic analysis has been carried out for 2046 background conditions (“do-nothing” scenario) in Synchro 11 to serve as a basis of comparison. The 2022 existing traffic has been projected to 2046 at an annual traffic growth rate of 1.0% as previously described and traffic generation from the remaining buildout of the Lakeview Ponds Subdivision and the industrial development to the west have been added. In the background operations model, all intersection controls remain same as the existing conditions (i.e., unsignalized with the exception of the signalized intersection of Bath Road / Coronation Boulevard), except for accounting for the planned intersection upgrades stated in Section 4.5 that will be completed before 2046. The proposed roundabouts at the intersections of Taylor-Kidd Boulevard with County Road 6 and Coronation Boulevard (County Road 24) have been included as single lane roundabouts; the need for the slip lane proposed at the County Road 6 location by the Counties will be evaluated based on the traffic analysis results. The results of the analysis are summarized in **Table 5-1** below and the full Synchro reports are provided in **Appendix A**.

Table 5-1: Traffic Operations Analysis - 2046 Background Conditions, Low Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	A	0.42	7.6	19.3	A	0.33	6.6	13.9
WB	A	0.28	6.6	10.4	A	0.43	8.3	13.2
SB	A	0.24	6.0	8.6	A	0.36	8.2	14.1
EB	A	0.20	5.6	6.9	A	0.34	8.7	12.3
County Road 6 / Waldon Pond Drive (TWSC)								
WB	B	0.29	13.2	9.4	B	0.14	12.3	3.8
NB	A	0.24	0	0	A	0.18	0	0
SBL	A	0.03	8.2	0.8	A	0.10	8.1	2.6
SBTR	A	0.16	0	0	A	0.26	0	0
County Road 6 / Amherst Drive (TWSC)								
EB	-	-	-	-	-	-	-	-
WB	B	0.30	11.6	10.1	B	0.27	12.1	8.6
NB	A	0.11	0	0	A	0.10	0	0
SBL	A	0.11	8	3	A	0.21	8.2	6.5
SBTR	A	0.07	0	0	A	0.12	0	0
County Road 6 / Kildare Avenue (TWSC)								
EB	-	-	-	-	-	-	-	-
WB	A	0.15	9.6	4.2	A	0.07	9.7	1.7
NB	A	0.05	0	0	A	0.08	0	0
SB	A	0.02	1.7	0.5	A	0.07	3.7	1.7



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Bath Road / County Road 6 (TWSC)								
EBL	A	0.03	8	0.7	A	0.03	8.2	0.7
EBT	A	0.16	0	0	A	0.15	0	0
WBT	A	0.15	0	0	A	0.18	0	0
WBR	A	0.03	0	0	A	0.06	0	0
SBLR	B	0.27	14.5	8.9	B	0.24	14.1	7.2
Bath Road / Coronation Boulevard (Signal)								
EBL	A	0.02	6.3	2.2	A	0.05	6.8	2.9
EBT	B	0.69	13.1	131.7	A	0.53	9.7	89.4
WBT	A	0.38	7.9	54.3	B	0.73	14.6	#181.7
WBR	A	0.04	2.4	3.7	A	0.15	1.6	7.2
SBLR	C	0.50	32	32.7	C	0.48	30.5	32.6
Coronation Boulevard / Amherst Drive (TWSC)								
EBLR	B	0.44	13.6	18	E	0.87	39.8	76.8
NBLT	A	0.06	6.3	1.5	A	0.13	7	3.47
SBTR	A	0.11	0	0	A	0.16	0	0
Taylor-Kidd Boulevard / Coronation Boulevard (Roundabout)								
NB	B	0.37	10.1	13.9	A	0.16	5.8	5.3
WB	A	0.40	6.7	19.9	B	0.67	12.0	50.4
SB	A	0.05	7.8	1.5	A	0.12	7.2	3.7
EB	A	0.51	8.9	28.0	A	0.37	7.6	15.6
Amherst Drive / Pratt Drive (TWSC)								
EB	A	0.02	1.1	0.5	A	0.06	2.2	1.4
WB	A	0.00	0.1	0.0	A	0.01	0.5	0.2
NB	B	0.10	13.7	2.8	C	0.15	16.5	4.1
SB	B	0.23	12.2	7.2	B	0.20	14.1	5.8
Amherst Drive / Speers Boulevard (AWSC)								
EB	A	0.25	9	-	B	0.40	12.3	-
WB	A	0.24	9	-	B	0.43	12.9	-
NB	A	0.18	8.9	-	B	0.25	11	-
SB	A	0.06	8.2	-	B	0.47	13.8	-
Bath Road / Jim Snow Drive (TWSC)								
EBLT	A	0.05	1.9	1.2	A	0.03	0.9	0.7
WBT	A	0.15	0	0	A	0.17	0	0
WBR	A	0.01	0	0	A	0.00	0	0
SBLR	B	0.05	10.2	1.4	B	0.13	11.2	3.4
Taylor-Kidd Boulevard / Jim Snow Drive (TWSC)								
EB	A	0.00	0.1	0.1	A	0.00	0.0	0.0



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
WB	A	0.03	1.6	0.8	A	0.02	1.7	0.6
NB	B	0.13	10.2	3.5	B	0.09	10.8	2.5
SB	B	0.00	13.9	0.1	B	0.01	11.6	0.3
Bath Road / Bayview Drive (TWSC)								
EB	A	0.00	0.1	0.1	A	0.00	0	0
WB	A	0.16	0	0	A	0.18	0	0
SB	B	0.02	12.8	0.6	B	0.03	13.8	0.7

*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.

The results of the 2046 background low growth scenario Synchro model indicate that all traffic movements will operate at LOS C or better with the exception of the shared eastbound left and right movements at Coronation Boulevard / Amherst Drive intersection which indicates LOS E the PM peak period. As the existing traffic on Coronation Boulevard grows over the 25-year period, it will be increasingly difficult for eastbound traffic at the intersection to find gaps during the PM peak period, resulting in this movement operating with increased delays under the existing unsignalized configuration. At the Bath Road / Coronation Boulevard intersection, it is noted that the EB and WB through movements along Bath Road generate long queues exceeding 130 m in the morning and 180 m in the afternoon; while these movements currently operate at an acceptable level of service, this amount of queuing may be further exacerbated when additional development volumes are considered.

5.2 LAND USE CONCEPT OPTION 1, LOW GROWTH SCENARIO

Traffic analysis has been carried out for 2046 AM and PM ultimate design conditions for land use concept Option 1 in Synchro 11. Traffic volumes used in the 2046 ultimate design condition model include the development generated traffic in addition to the projected 2046 background traffic, as illustrated in **Figure 5-1**.

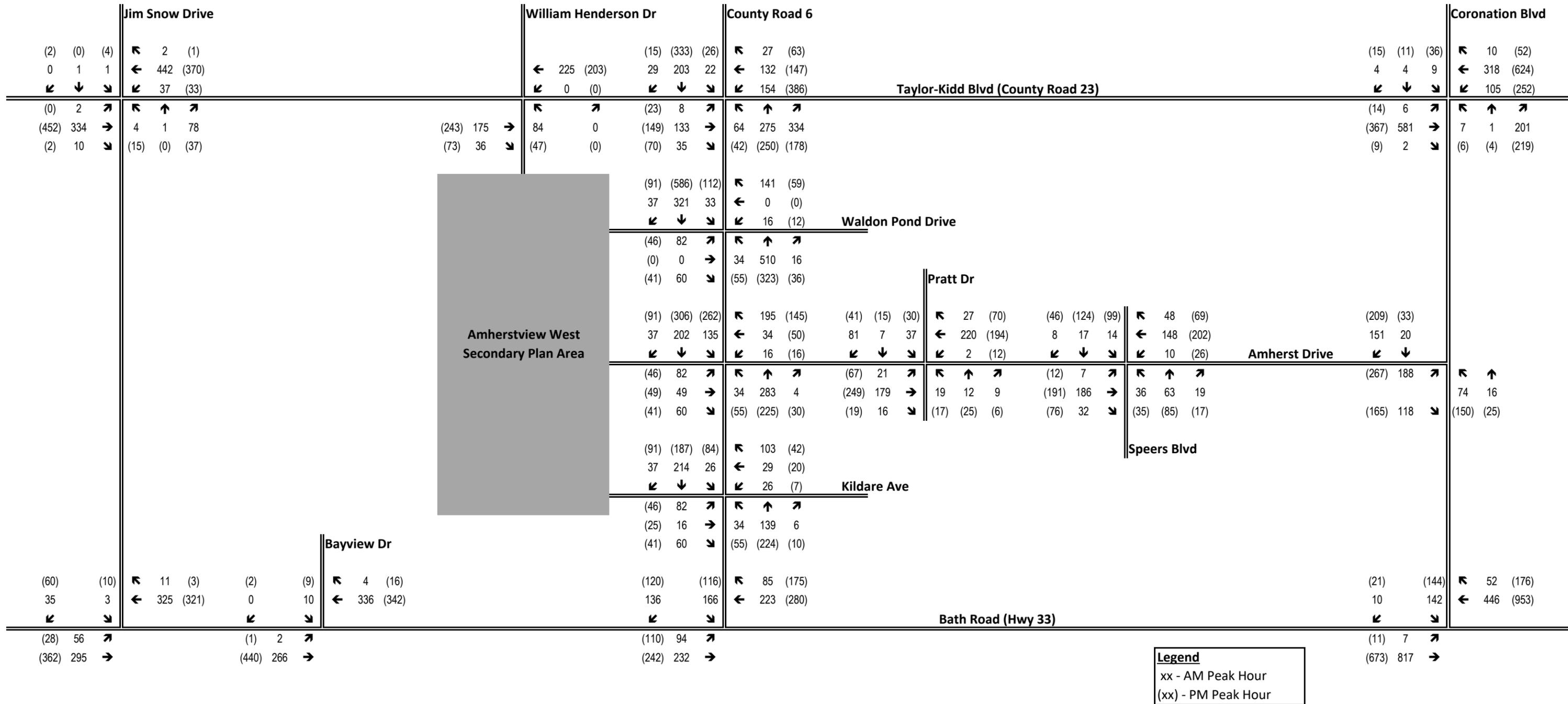


Figure 5-1: Future Total Traffic 2046 - Option 1, Low Growth



As initial analysis indicated the potential for operations exceeding capacity on County Road 6 under these projected volumes, this analysis is based on the intersections along this corridor being converted to signalized operation. Some additional intersection modifications have been implemented to mitigate congestion in the model, these include:

- Left turn lane auxiliary lanes introduced on all approaches to the intersections proposed for signalization.
- County Road 6 / Bath Road: County Road 6 widened to provide separate SB left and right turn lanes.
- Amherst Drive / Coronation Boulevard: Amherst Drive widened to provide separate EB left and right turn lanes.

The results of this analysis are summarized in **Table 5-2** below and the full Synchro reports are provided in **Appendix A**.

Table 5-2: Traffic Operations Analysis - 2046 Total Traffic, Option 1, Low Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	B	0.66	12.4	50.5	A	0.47	8.5	22.9
WB	A	0.39	8.8	15.5	B	0.68	14.5	70.1
SB	A	0.31	7.4	11.5	B	0.57	14.3	33.5
EB	A	0.22	6.5	7.7	B	0.46	13.8	19.6
County Road 6 / Waldon Pond Drive (Signal)								
EBL	C	0.43	26.8	18.3	C	0.24	23	11.3
EBTR	A	0.10	0.3	0	A	0.12	0.6	0
WBL	B	0.08	18.4	5.5	B	0.06	19.1	4.4
WBTR	A	0.31	1.6	0.7	A	0.11	0.4	0
NBL	A	0.05	5	m5.0	A	0.13	8.1	13.2
NBTR	A	0.44	7.7	74	A	0.27	7.2	59
SBL	A	0.07	5.4	5.7	A	0.16	4.9	14.8
SBTR	A	0.31	5.6	40	A	0.51	6.8	97.5
County Road 6 / Amherst Drive (Signal)								
EBL	B	0.35	17.2	12.7	C	0.39	28.7	12
EBTR	A	0.23	7.7	11	B	0.32	14.9	13.6
WBL	B	0.10	19.9	5.5	B	0.09	19.2	5.3
WBTR	B	0.59	11.1	17.8	B	0.55	11.8	17.6
NBL	A	0.06	6.3	6.4	A	0.10	4.7	9.5
NBTR	A	0.30	7.1	43.5	A	0.23	4.7	31.1
SBL	A	0.27	7.2	9.9	A	0.40	4.6	13.1
SBTR	A	0.26	5.5	13.6	A	0.36	3.0	8.9
County Road 6 / Kildare Avenue (Signal)								
EBL	C	0.40	25.8	17.6	C	0.25	23.1	11.2
EBTR	A	0.24	9.2	9.6	B	0.25	11.9	10
WBL	B	0.09	18.8	7.2	B	0.03	18.3	3.2
WBTR	A	0.37	9.5	13.6	B	0.24	11.4	9.4



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
NBL	A	0.05	5.0	5.4	A	0.08	4.8	7.8
NBTR	A	0.12	4.7	15.5	A	0.20	4.6	25.1
SBL	A	0.03	4.0	3.3	A	0.11	5.2	12.9
SBTR	A	0.20	3.5	16.1	A	0.23	4.9	33
Bath Road / County Road 6 (Signal)								
EBL	A	0.68	5.6	11.7	A	0.15	4.9	13.2
EBT	A	0.68	5.4	24.2	A	0.20	4.7	24.7
WBT	A	0.68	7.6	38	A	0.22	4.8	28.5
WBR	A	0.68	3.8	11.3	A	0.16	1.3	6.6
SBL	C	0.19	33.3	38.2	C	0.45	30.6	27.2
SBR	A	0.19	7.1	11.5	A	0.36	7.8	11.9
Bath Road / Coronation Boulevard (Signal)								
EBL	A	0.02	6.4	2.2	A	0.05	6.2	2.8
EBT	B	0.78	16.9	#186.5	A	0.54	9.1	95.3
WBT	A	0.41	8.6	61.3	B	0.75	14.4	183.5
WBR	A	0.06	2.2	4.3	A	0.16	1.3	6.8
SBLR	C	0.54	33	36.8	D	0.60	41.8	45.5
Coronation Boulevard / Amherst Drive (Signal)								
EBL	B	0.39	12.7	15.0	D	0.84	32.9	74.4
EBR	A	0.39	12.7	15.0	D	0.84	32.9	74.4
NBLT	A	0.07	6.6	0.0	A	0.15	7.3	4.2
SBTR	A	0.13	0.0	0.0	A	0.18	0.0	0.0
Taylor-Kidd Boulevard / Coronation Boulevard (Roundabout)								
NB	A	0.29	8.7	9.7	A	0.18	6.2	6.1
WB	A	0.35	6.0	16.2	C	0.76	15.3	76.0
SB	A	0.03	7.1	1.0	A	0.13	8.3	3.6
EB	A	0.50	8.5	27.0	A	0.41	8.0	17.7
Amherst Drive / Pratt Drive (TWSC)								
EB	A	0.02	0.9	0.5	A	0.06	2.1	1.5
WB	A	0.00	0.1	0	A	0.01	0.4	0.3
NB	C	0.12	15.2	3.2	C	0.17	19	4.9
SB	B	0.26	13.3	8.2	C	0.23	15.9	6.9
Amherst Drive / Speers Boulevard (AWSC)								
EB	A	0.32	9.8	-	B	0.51	14.9	-
WB	A	0.30	9.7	-	C	0.55	16	-
NB	A	0.18	9.2	-	B	0.27	12	-
SB	A	0.06	8.5	-	C	0.51	15.5	-
Bath Road / Jim Snow Drive (TWSC)								



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
EBLT	A	0.05	1.8	1.3	A	0.03	0.9	0.7
WBT	A	0.20	0	0	A	0.22	0	0
WBR	A	0.01	0	0	A	0.00	0	0
SBLR	B	0.06	11.1	1.6	B	0.15	12.4	4
Taylor-Kidd Boulevard / Jim Snow Drive (TWSC)								
EB	A	0.00	0.1	0.1	A	0.00	0	0
WB	A	0.05	1.2	1.2	A	0.04	1.2	1
NB	B	0.22	14.3	6.8	C	0.21	19.4	6.1
SB	B	0.01	30.6	0.3	C	0.04	24	0.9
Bath Road / Bayview Drive (TWSC)								
EB	A	0.00	0.1	0.1	A	0.0	0.0	0.0
WB	A	0.21	0.0	0.0	A	0.23	0.0	0.0
EB	A	0.03	14.9	0.7	A	0.04	16.1	0.9

*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.

The results of the analysis indicate that most of the study area intersections are expected to operate with all movements at LOS D or better during the peak periods. The additional lane on the EB approach Coronation Boulevard / Amherst Drive intersection and the introduction of auxiliary turn lanes on all legs of the intersection will improve traffic operations at the intersection, but EB PM peak hour delays will start to approach congestion by 2046.

At the Bath Road / Coronation Boulevard intersection, movements operate within acceptable LOS. However, EB through movements operate with a 185m queue during the AM peak hour. During the PM peak hour when residents return home, WB through movements also indicate queue lengths of approximately 185m. While the growth of east-west traffic to and from Kingston is anticipated to be increasingly concentrated on Taylor-Kidd Boulevard due to the existing congestion on Bath Road, the Bath Road corridor may still be a more viable route for some drivers in the future and thus the operations of the east-west movements should be closely monitored in 2046 and improved where possible to avoid capacity issues and long queues.

Overall, signalization of the intersections along County Road 6 and associated lane improvements as noted above will be able to accommodate the future background traffic and development of the Amherstview Secondary Plan Area.

5.3 LAND USE CONCEPT OPTION 1 – ROUNDABOUT CONTROL, LOW GROWTH SCENARIO

As an alternative to signalization, a 2046 analysis has also been undertaken to assess the operations if the Secondary Plan Area site accesses are configured as roundabouts; roundabout control can mitigate high traffic speeds and collision severity, at the expense of a higher physical footprint. Due to the use of signals on the rest of the corridor and the proximity to the water, the intersection of County Road 6 and Bath Road (Highway 33) has not been considered as a roundabout in this analysis.

Base analysis of roundabout configurations has been based on a single circulation lane and single lane approach from all directions, without any additional auxiliary turning or circulation lanes. Roundabout analysis has been undertaken using SIDRA analysis software and are based on Highway Capacity Manual (HCM) methodology. The analysis results for the



evaluation of the site accesses as roundabouts are summarized in Table 5-3 and the full SIDRA reports are provided in Appendix C.

Table 5-3: Traffic Operations Analysis - Roundabout Configurations, Land Use Option 1, Low Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
County Road 6 / Waldon Pond Drive								
NB	A	0.51	8.7	28.6	A	0.39	7.1	18.1
WB	A	0.25	8.3	8.2	A	0.09	5.1	2.9
SB	A	0.34	6.1	15.5	B	0.67	11.7	55.9
EB	A	0.17	5.7	5.8	A	0.15	7.5	4.6
County Road 6 / Amherst Drive								
NB	A	0.35	7.3	14.2	A	0.37	8.0	14.6
WB	A	0.31	7.7	11.4	A	0.24	6.1	8.7
SB	A	0.34	6.2	14.9	B	0.59	10.2	38.6
EB	A	0.23	6.2	8.0	A	0.21	7.3	6.6
County Road 6 / Kildare Avenue								
NB	A	0.17	4.6	6.1	A	0.28	5.7	11.1
WB	A	0.17	5.0	5.8	A	0.08	4.5	2.5
SB	A	0.24	5.1	9.8	A	0.31	5.7	13.6
EB	A	0.17	5.1	5.8	A	0.12	4.6	4.0
*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.								

The analysis of the intersections as roundabouts indicates that all locations will operate under 2046 projected traffic volumes with all approaches at an acceptable LOS B or better. Average delays per vehicle at all roundabout locations would be approximately 12 seconds or less and no noticeable congestion would be anticipated. Queues on all approaches would be less than 20 m with the exception of the peak hour NB and SB queues along County Road 6 approaching Waldon Pond Drive and Amherst Drive which would extend up to 56m. Overall, the analysis indicates that a single lane roundabout configuration would provide an acceptable level of operations for the 2046 projected volumes.

5.4 LAND USE CONCEPT OPTIONS 2/3, LOW GROWTH SCENARIO

Traffic analysis has been carried out for 2046 AM and PM ultimate design conditions for land use concept Options 2 & 3 in Synchro 11 software. Traffic volumes used in the 2046 ultimate design condition model include the development generated traffic in addition to the projected 2046 background traffic, as illustrated in **Figure 5-2**.

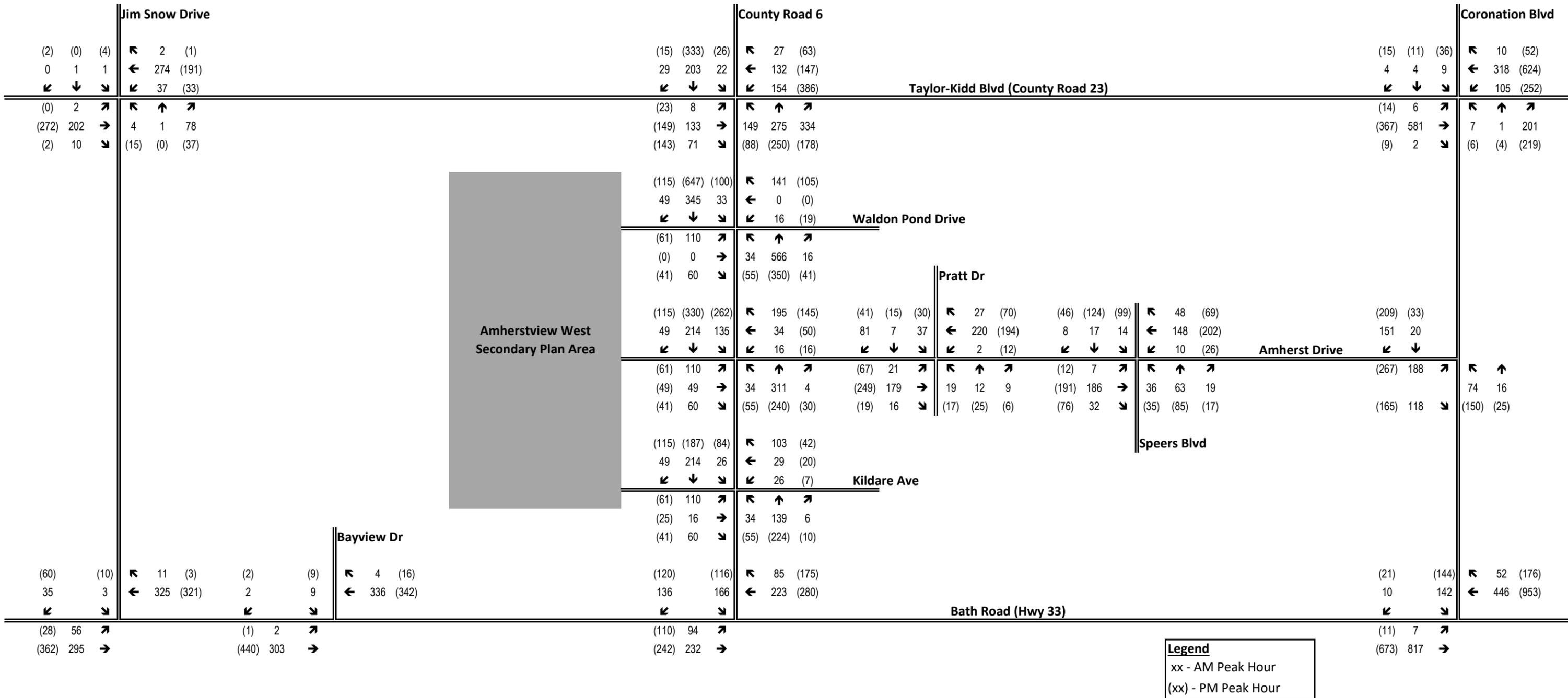


Figure 5-2: Future Total Traffic 2046 - Options 2/3, Low Growth



The traffic model is similar to Option 1; the only difference is the lack of the north access to Taylor-Kidd Boulevard. Similar to Option 1, the intersections on the County Road 6 corridor have been modeled as signalized in this analysis to mitigate the impacts of the additional traffic from the Amherstview West Secondary Plan Area and operate with cycle lengths between 60s and 75s. All of the intersection lane modifications introduced in the Option 1 analysis have been maintained for Option 2/3.

Outside of the County Road 6 corridor, the future traffic operations will be the same as was reported in the Option 1 analysis. For this reason, the summary of the analysis results for Options 2/3 has been limited to the County Road 6 corridor as the operations at all other intersection will be identical to Option 1. The results of this analysis are summarized in **Table 5-4** below and the full Synchro reports are provided in **Appendix A**.

Table 5-4: Traffic Operations Analysis - 2046 Total Traffic, Options 2/3, Low Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	C	0.74	15.2	99.7	A	0.51	9.3	26.6
WB	B	0.43	10.1	19.3	C	0.71	16.6	78.1
SB	A	0.34	8.4	12.5	C	0.60	15.8	36.1
EB	A	0.27	7.1	9.6	C	0.59	18.0	32.1
County Road 6 / Waldon Pond Drive (Signal)								
EBL	C	0.52	28.7	23.6	C	0.32	24.3	14.2
EBTR	A	0.10	0.3	0	A	0.12	0.6	0
WBL	B	0.07	17.8	5.5	B	0.09	19.4	6
WBTR	A	0.32	2.5	4	A	0.20	0.8	0
NBL	A	0.06	5.5	5.6	A	0.17	7.2	8.8
NBTR	A	0.48	7.8	76.2	A	0.32	6.1	46
SBL	A	0.08	5.8	5.8	A	0.16	5.5	13.6
SBTR	A	0.33	6	43.6	A	0.62	9.9	#145.0
County Road 6 / Amherst Drive (Signal)								
EBL	C	0.55	28.5	21.1	C	0.47	31.3	15
EBTR	B	0.26	10.3	14.2	B	0.30	14.3	13.6
WBL	C	0.11	25.1	6.6	B	0.08	18.8	5.3
WBTR	B	0.63	13.6	21	B	0.53	11.2	17.6
NBL	A	0.06	8	7.5	A	0.11	4.6	9.2
NBTR	A	0.3	8.6	48.4	A	0.25	4.6	31.4
SBL	A	0.26	9.6	25.2	A	0.41	2.8	4.1
SBTR	A	0.26	7.8	38	A	0.41	1.7	3.9
County Road 6 / Kildare Avenue (Signal)								
EBL	C	0.50	27.7	22.5	C	0.32	24.1	13.9
EBTR	A	0.22	8.7	9.6	B	0.24	11.6	10
WBL	B	0.11	18.7	7.4	B	0.03	18	3.2
WBTR	A	0.35	8.9	13.6	B	0.23	11	9.4



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
NBL	A	0.05	5.3	5.4	A	0.08	4.9	7.9
NBTR	A	0.12	5	15.5	A	0.20	4.7	25.1
SBL	A	0.04	5.3	4.4	A	0.12	4	9
SBTR	A	0.21	5	25.5	A	0.26	3.8	22.5
Bath Road / County Road 6 (Signal)								
EBL	A	0.15	5.6	11.7	A	0.15	4.9	13.2
EBT	A	0.21	5.4	24.2	A	0.20	4.7	24.7
WBT	A	0.21	6.5	29.7	A	0.22	4.8	28.5
WBR	A	0.09	2.9	8	A	0.16	1.3	6.6
SBL	C	0.60	33.4	38.2	C	0.45	30.6	27.2
SBR	A	0.38	7.1	11.5	A	0.36	7.8	11.9

*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.

The results of this traffic analysis indicate that all intersections operate with all movements at an acceptable LOS C or better. The analysis of Options 2 & 3 indicates slightly increased delays and queuing compared with Option 1 as all development traffic is distributed through three accesses on County Road 6 compared with the Option 1 configuration allowing direct access to Taylor-Kidd Boulevard. While signalization and the provision of auxiliary turning lanes at some of the intersections as noted will be able to maintain the traffic at an acceptable level of service, it is noted that 2046 anticipated queues along County Road 6 will extend to 145 m in the southbound direction approaching the Waldon Pond Drive intersection.

5.5 LAND USE CONCEPT OPTIONS 2/3 – ROUNDABOUT CONTROL, LOW GROWTH SCENARIO

Similar to Option 1, a 2046 analysis has also been undertaken to assess the operations with the site accesses are configured as roundabouts; roundabout analysis has been undertaken using the SIDRA analysis software and is based on Highway Capacity Manual (HCM) methodology. The analysis results for the evaluation of the site accesses as roundabouts are summarized in **Table 5-5** and the full SIDRA reports are provided in **Appendix C**.



Table 5-5: Traffic Operations Analysis - Roundabout Configurations, Land Use Options 2/3, Low Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
County Road 6 / Waldon Pond Drive								
NB	B	0.58	10.2	35.0	B	0.42	7.6	20.3
WB	A	0.28	9.4	8.9	A	0.17	6.1	5.4
SB	A	0.37	6.5	17.7	B	0.74	14.0	72.4
EB	A	0.21	6.3	7.3	A	0.19	8.5	5.8
County Road 6 / Amherst Drive								
NB	A	0.39	8.0	16.3	A	0.39	8.5	15.8
WB	A	0.33	8.3	12.1	A	0.25	6.4	8.9
SB	A	0.36	6.4	16.3	B	0.64	11.2	45.0
EB	A	0.26	6.7	9.5	A	0.23	7.8	7.6
County Road 6 / Kildare Avenue								
NB	A	0.17	4.7	6.2	A	0.28	5.9	11.3
WB	A	0.17	5.2	6.0	A	0.08	4.7	2.6
SB	A	0.25	5.2	10.3	A	0.33	6.0	15.1
EB	A	0.20	5.4	7.1	A	0.14	4.8	4.6
*95th percentile queue in m, representing the maximum back of queue with 95 th percentile volumes.								

The analysis of the intersections as roundabouts indicates that all locations will operate under 2046 projected traffic volumes with all approaches at an acceptable LOS B or better. The analysis results for Options 2/3 are slightly more congested as a result of the entirety of the traffic generated from the Secondary Plan area concentrated on County Road 6, but all movements will operate at an acceptable level without extensive delays. The longest queue anticipated is the PM peak hour SB queue on County Road 6 approaching Waldon Pond Drive of up to 72m; this is not anticipated to result in impacts to operations at any intersections upstream.



6 TRAFFIC OPERATIONS ANALYSIS – HIGH-GROWTH SCENARIO

The projected 2022 volumes from the Lakeview Ponds Development TIS have been used as the basis of the high-growth scenario analysis. The same annual growth factors of 1.0% for the entire road network and 1.69% for Bath Road (Highway 33) specifically, have been used to project the 2022 background volumes from the Lakeview Ponds TIS to the 2046 horizon year. This is intended to represent a shift back to pre-pandemic travel patterns in the near future followed by steady growth over the 25-year projection period. The 2046 future background traffic analysis is modelled with the projected volumes background volumes plus the full Lakeview Ponds development generated volumes per the TIS and the industrial generated volumes to the west; the analysis for the different land use concept options have been modelled with the 2046 projected volumes and the development generated trips.

6.1 2046 BACKGROUND CONDITIONS, HIGH-GROWTH SCENARIO

Traffic analysis has been carried out for 2046 background conditions in Synchro 11 using volume projections from the high-growth scenario. The 2046 future background analysis introduces a roundabout at Taylor-Kidd Boulevard / County Road intersection, and a southbound left turn lane at County Road 6 / Waldon Pond intersection, in line with the TMP as a basis for comparison to the future proposed development. A summary of the results of the traffic analysis is provided in Table 6-1 below and the full Synchro reports are provided in **Appendix A**.

Table 6-1: Traffic Operations Analysis - 2046 Future Background, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	E	0.92	36.7	195.8	B	0.57	12.6	37.5
WB	C	0.74	21.4	80.0	B	0.62	13.1	50.2
SB	C	0.71	20.5	55.8	C	0.69	17.3	59.0
EB	B	0.53	12.5	30.2	E	0.86	35.6	94.5
County Road 6 / Waldon Pond Drive (TWSC)								
WB	D	0.59	25.9	29.9	C	0.23	16.9	7
NB	A	0.39	0	0	A	0.25	0	0
SBL	A	0.04	9	1.1	A	0.13	8.6	3.7
SBTR	A	0.27	0	0	A	0.40	0	0
County Road 6 / Amherst Drive (TWSC)								
WB	C	0.67	19.1	41.7	D	0.77	34.5	53.2
NB	A	0.12	0	0	A	0.13	0	0
SBL	A	0.22	8.5	6.9	A	0.35	9.1	13
SBTR	A	0.08	0	0	A	0.13	0	0
County Road 6 / Kildare Avenue (TWSC)								
WB	B	0.20	10.8	5.8	B	0.09	10.7	2.3



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
NB	A	0.10	0.0	0.0	A	0.13	0.0	0.0
SB	A	0.02	1.4	0.5	A	0.07	2.8	1.8
Bath Road / County Road 6 (TWSC)								
EBL	A	0.07	8.7	1.8	A	0.07	9.5	1.9
EBT	A	0.28	0	0	A	0.32	0	0
WBT	A	0.23	0	0	A	0.36	0	0
WBR	A	0.07	0	0	A	0.08	0	0
SBLR	D	0.63	34.1	32.3	F	0.97	96	69.5
Bath Road / Coronation Boulevard (Signal)								
EBL	A	0.05	7.5	3.4	A	0.11	9.1	4.1
EBT	F	1.21	124	#339.3	B	0.68	13.3	134.6
WBT	B	0.57	11.7	88.2	C	0.85	20.6	#225.3
WBR	A	0.07	2.2	4.6	A	0.18	1.6	7.8
SBLR	D	0.68	36.6	52.3	C	0.55	31.8	38.4
Coronation Boulevard / Amherst Drive (TWSC)								
EBLR	F	0.97	59.9	105.3	F	1.21	138.1	177
NBLT	A	0.10	6.7	2.7	A	0.16	7.2	4.5
SBTR	A	0.18	0	0	A	0.19	0	0
Taylor-Kidd Boulevard / Coronation Boulevard (Roundabout)								
NB	B	0.37	10.1	13.9	A	0.16	5.8	5.3
WB	A	0.40	6.7	19.9	B	0.67	12.0	50.4
SB	A	0.05	7.8	1.5	A	0.12	7.2	3.7
EB	A	0.51	8.9	28.0	A	0.37	7.6	15.6
Amherst Drive / Pratt Drive (TWSC)								
EB	A	0.02	0.8	0.5	A	0.11	6	3
WB	A	0.00	0.1	0.0	A	0.01	0.4	0.2
NB	E	0.57	38.6	25.1	C	0.25	19.2	7.9
SB	C	0.43	19.3	17.3	C	0.31	17.5	10.5
Amherst Drive / Speers Boulevard (AWSC)								
EB	B	0.47	12.5	-	D	0.75	26.2	-
WB	B	0.45	12.4	-	C	0.69	23.7	-
NB	B	0.32	11.4	-	B	0.38	15	-
SB	A	0.07	9.4	-	C	0.59	19.7	-
Bath Road / Jim Snow Drive (Unsignalized)								
EBLT	A	0.09	2.4	2.3	A	0.06	1.7	1.7
WBT	A	0.23	0	0	A	0.33	0	0
WBR	A	0.01	0	0	A	0.00	0	0



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95*	LOS	V/C	Delay (s)	Q95*
SBLR	B	0.12	12.6	3.4	C	0.38	19	13.7
Taylor-Kidd Boulevard / Jim Snow Drive (TWSC)								
EB	A	0.01	0.3	0.2	A	0.00	0	0
WB	A	0.12	3	3.4	A	0.07	2.2	1.7
NB	D	0.71	33.2	42.8	C	0.31	17.9	10.4
SB	F	0.15	84.7	3.9	C	0.06	19.5	1.4
Bath Road / Bayview Drive (Unsignalized)								
EB	A	0.01	0.2	0.1	A	0	0.1	0
WB	A	0.24	0	0	A	0.35	0	0
SB	C	0.06	18.9	1.7	D	0.12	26.2	3.3
*95 th percentile queue in m, representing the maximum back of queue with 95 th percentile volumes.								

The results of the future background analysis indicate that traffic operations at several intersection locations will exceed capacity under the 2046 high-growth scenario. The unsignalized intersections will result in long delays, often over 60s and in the worst cases over 200s of average vehicle delay, resulting in LOS F and the need to implement mitigation measures to maintain traffic capacity. The intersections experiencing movements include:

- County Road 6 / Taylor-Kidd Boulevard: As a single lane roundabout, the AM northbound approach and PM eastbound approach capacity and operate at a LOS E. NB queues during the AM peak will approach 200m in length.
- Bath Road / County Road 6: The southbound approach will exceed capacity at LOS F during the PM peak hour.
- Bath Road / Coronation Boulevard: Eastbound through movements operate at LOS F and 224s delay with a 339m queue length during the AM peak hour.
- Coronation Boulevard / Amherst Drive: Eastbound movements will operate at LOS F during both peak hours with 60s delays and 105m queues during the AM peak hour, and 138s delays and 117m queues during the PM peak hour. Separate turn lanes added for EB left, NB left and SB right.
- Amherst Drive / Pratt Drive: the northbound approach will operate with delays corresponding with a LOS E during the AM peak hour, as a result of the AM peak hour traffic along Amherst Drive leaving few gaps to make northbound turning movements.
- Taylor-Kidd Boulevard / Jim Snow Drive: The SB approach will experience delays corresponding with LOS F during the AM peak hour, as a result of the additional industrial-generated traffic added to the Taylor-Kidd Boulevard corridor. Traffic on the access should be monitored over the 20-year period to determine the most appropriate control for this access.

6.2 TRAFFIC OPERATIONS ANALYSIS – OPTION 1 HIGH GROWTH

Traffic analysis has been carried out for AM and PM ultimate design conditions for Option 1 under the high-growth scenario. Traffic volumes for this scenario includes projected 2046 future background volumes and the additional traffic generated by the anticipated development in the Amherstview West Secondary Plan Area, as illustrated in **Figure 6-1**.

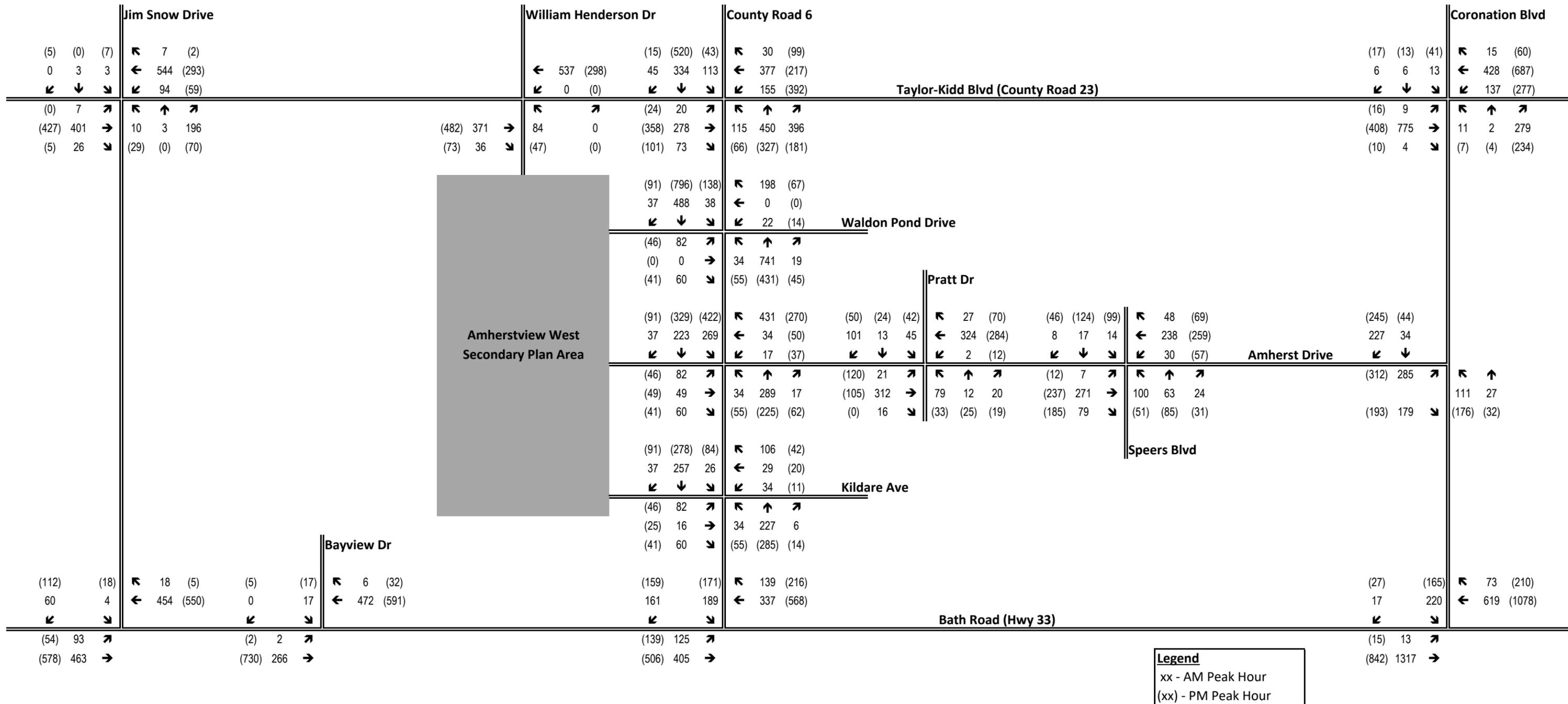


Figure 6-1: Future Total Traffic 2046 - Option 1, High Growth



With the future background scenario experiencing capacity constraints at some of the intersections, the following intersection modifications have been implemented in the Option 1 analysis to maintain an acceptable level of traffic operations:

- Taylor-Kidd Boulevard / Secondary Plan Collector Road: Intersection signalized with 60 second cycle length.
- County Road 6 / Waldon Pond Drive: County Road 6 widened to include NB and SB left turn lanes, EB approach from Secondary Plan Area configured with a dedicated left turn lane and shared through-right turn lane. Intersection signalized with 120 second cycle length, EB advanced green provided during AM peak hour.
- County Road 6 / Amherst Drive: County Road 6 widened to include NB and SB left turn lanes, EB approach from Secondary Plan Area configured with a dedicated left turn lane and shared through-right turn lane. Amherst Drive widened to add a dedicated WB right turn lane. Intersection signalized with a 120 second cycle, EB left advance green provided during AM peak and SB left provided during AM and PM peaks.
- County Road 6 / Kildare Avenue: EB approach from Secondary Plan Area configured with a dedicated left turn lane and shared through-right turn lane. Intersection signalized with a 60 second cycle.
- County Road 6 / Bath Road: County Road 6 widened to provide separate SB left and right turn lanes. Intersection signalized with a 120 second cycle.
- Coronation Boulevard / Bath Road: Existing AM signal cycle length extended to 90 seconds.
- Coronation Boulevard / Amherst Drive: Intersection signalized to accommodate additional traffic from Amherst Drive, 90 second cycle length.
- Coronation Boulevard / Taylor-Kidd Boulevard: Taylor-Kidd Boulevard widened to include a WB left turn lane. Intersection signalized with a 90 second cycle length.
- Taylor-Kidd Boulevard / Jim Snow Drive: Taylor-Kidd Boulevard widened to add a WB left turn lane. Intersection signalized with a 90 second cycle length.

A summary of the Synchro 11 analysis results under the future traffic volumes and above noted intersection modifications are presented in **Table 6-2** below and the full Synchro reports are provided in **Appendix A**.

Table 6-2: Traffic Operations Analysis – 2046 Total Traffic, Option 1, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	F	1.24	135.0	699.5	C	0.71	16.7	72.4
WB	D	0.82	27.1	103.9	D	0.90	32.8	175.7
SB	D	0.83	30.4	83.9	F	0.98	56.5	176.1
EB	C	0.60	16.2	36.8	F	1.16	122.4	279.6
County Road 6 / Waldon Pond Drive (Signal)								
EBL	D	0.44	46	31.4	D	0.34	41.8	18.3
EBTR	A	0.11	0.4	0	A	0.13	0.7	0
WBL	D	0.23	55	13.6	C	0.11	34.9	7.9
WBTR	B	0.65	14.1	18.7	A	0.13	0.5	0
NBL	A	0.07	5.5	m5.6	A	0.17	4.6	8.5



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
NBTR	B	0.62	11.8	212.5	A	0.35	3.9	50.8
SBL	A	0.12	7.2	8.9	A	0.22	4	17
SBTR	A	0.45	8.6	96.6	A	0.64	7.3	147.8
County Road 6 / Amherst Drive (Signal)								
EBL	C	0.42	26.9	19	D	0.52	45	16.5
EBTR	B	0.26	11.5	16.1	B	0.30	16.9	17.5
WBL	C	0.12	28.8	7.7	C	0.19	26	12.5
WBTR	B	0.83	16.5	34.3	B	0.68	12.3	26.2
NBL	B	0.08	19.5	12.1	C	0.16	20.7	17.6
NBTR	C	0.42	21.1	76.6	C	0.43	20.9	#74.8
SBL	B	0.51	11.7	45.3	B	0.65	10.2	50.3
SBTR	A	0.25	8	39.9	A	0.37	5.8	44.5
County Road 6 / Kildare Avenue (Signal)								
EBL	C	0.41	26.6	18	D	0.35	41.4	17.9
EBTR	A	0.24	9.4	9.8	B	0.32	20	15.3
WBL	C	0.16	20.8	9.2	C	0.07	33.3	6.8
WBTR	A	0.38	9.7	13.9	B	0.31	19	14.3
NBL	A	0.05	5	5.4	A	0.08	3.4	7
NBTR	A	0.19	4.9	24.4	A	0.23	3.3	29.2
SBL	A	0.04	5	4.4	A	0.11	3.3	9.7
SBTR	A	0.23	4.9	29.5	A	0.28	3.3	34.4
Bath Road / County Road 6 (Signal)								
EBL	A	0.22	6.6	18.4	A	0.28	6.4	19.6
EBT	A	0.35	6.8	52.2	A	0.40	6.1	59.6
WBT	A	0.30	6.4	42.4	A	0.44	6.5	69.2
WBR	A	0.14	1.3	5.8	A	0.19	1.1	6.7
SBL	D	0.69	44.5	53.5	D	0.64	44.5	51.7
SBR	A	0.43	7.6	13.8	B	0.43	10.2	18.7
Bath Road / Coronation Boulevard (Signal)								
EBL	A	0.04	4.9	2.9	A	0.08	5.9	3.3
EBT	E	1.10	76.1	#487.3	B	0.63	10.1	132.9
WBT	A	0.52	8.7	88.2	B	0.79	15.5	230.7
WBR	A	0.07	1.1	3.8	A	0.18	0.9	6.1
SB	F	0.97	97.3	#118.0	E	0.77	67.9	#76.2
Coronation Boulevard / Amherst Drive (Signal)								



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
EBL	C	0.69	21.6	36.6	C	0.70	21.5	39.7
EBR	A	0.35	3.6	6.7	A	0.36	3.5	6.8
NBL	A	0.21	9.4	15.6	B	0.33	10.6	23.7
NBT	A	0.04	8.2	5.1	A	0.05	8.4	5.8
SBT	A	0.06	8.3	6	A	0.06	8.2	7
SBR	A	0.32	2.6	7.2	A	0.33	2.6	7.4
Taylor-Kidd Boulevard / Coronation Boulevard (Roundabout)								
NB	C	0.50	15.1	23.0	A	0.22	6.8	7.2
WB	A	0.48	7.7	26.8	C	0.85	21.1	111.8
EB	A	0.06	8.7	1.7	A	0.16	9.6	4.6
SB	B	0.69	13.5	66.1	A	0.47	9.2	21.2
Amherst Drive / Pratt Drive (TWSC)								
EB	A	0.02	0.7	0.5	A	0.12	5	3.1
WB	A	0.00	0.1	0.1	A	0.01	0.3	0.2
NB	E	0.63	46.7	29.4	C	0.30	23	9.9
SB	C	0.46	20.9	19	C	0.36	20.8	13
Amherst Drive / Speers Boulevard (AWSC)								
EB	B	0.57	14.7	-	E	0.91	47.4	-
WB	B	0.52	14	-	E	0.86	40.2	-
NB	B	0.34	12	-	C	0.42	17.2	-
SB	B	0.07	9.8	-	C	0.64	23.9	-
Bath Road / Jim Snow Drive (TWSC)								
EBLT	A	0.10	2.5	2.6	A	0.07	1.8	1.8
WBT	A	0.28	0	0	A	0.39	0	0
WBR	A	0.01	0	0	A	0.00	0	0
SBLR	B	0.13	13.2	3.7	C	0.44	17.6	17.6
Taylor-Kidd Boulevard / Jim Snow Drive (TWSC)								
EB	A	0.01	0.3	0.3	A	0.00	0	0
WB	A	0.13	3.1	3.5	A	0.07	2.1	1.8
NB	E	0.81	47	55.4	C	0.37	22.2	13.5
SB	F	0.20	118.3	5.2	C	0.07	23.7	1.9
Bath Road / Bayview Drive (xx)								
EB	A	0.01	0.2	0.1	A	0.00	0.1	0.1
WB	A	0.30	0	0	A	0.40	0	0
SB	C	0.08	21.8	2	D	0.16	32.7	4.3



The results of the analysis indicate that traffic operations at most of the study area intersections can be accommodated with movements at a LOS E or better under the 2046 high growth scenario volumes. Mitigation measures and remaining issues under this scenario include the following:

- County Road 6 / Taylor-Kidd Boulevard – as a single lane intersection, the additional development volumes from the Amherstview Secondary Plan area will result in the AM NB movement and PM EB and SB movements reaching a LOS F. AM NB queues approaching the roundabout would approach 700m, which would extend through the intersection with Walden Pond Drive upstream.
- County Road 6 / Walden Pond Drive – under signalized operation, all movements at this intersection will operate at a LOS D or better, but it is noted that the peak hour NB and SB queues at this intersection may exceed 200m and 145m respectively. As much of this impact is related to NB and SB through volumes, potential mitigation of these queues through signal timing will be limited.
- County Road 6 / Bath Road – the upgrade to signalized operation and provision of a separate SB right turn auxiliary lane is anticipated to improve the southbound approach to operate at a LOS D during the PM peak hour; all other movements will continue to operate a LOS B or better.
- Bath Road / Coronation Boulevard – future volume increases under the high growth scenario will result in the AM peak hour EB through movement to exceed capacity and the SB approach to operate near capacity. As the widening of Bath Road is not considered feasible, it is likely that the excess traffic using this corridor would divert to use Taylor-Kidd Boulevard towards Kingston, particularly if this corridor was widened.

In general, the signalization of the intersections where capacity issues are expected on the existing unsignalized configurations is expected to result in the mitigation of most of the anticipated issues. While this will result in acceptable operations along the County Road 6 corridor, the long queues at some intersections suggest that the widening of County Road 6 by 2046 may be a consideration should the high growth volumes be realized. A significant area of congestion will be on Bath Road approaching Coronation Boulevard; as widening of the Bath Road corridor is not practical, it is anticipated that there will be some additional traffic redistribution to Taylor-Kidd Boulevard.

6.3 LAND USE CONCEPT OPTION 1 – ALTERNATIVE INTERSECTION CONFIGURATIONS, HIGH GROWTH SCENARIO

Similar to the low growth scenario, additional analysis using the software program SIDRA has been undertaken to assess the operations of the intersections along County Road 6 if configured as roundabouts rather than traffic signals. All roundabout configurations are based on the same single lane configured as assessed previously. The analysis results for the evaluation of the site accesses as roundabouts are summarized in **Table 6-3** and the full Synchro reports are provided in **Appendix C**.



Table 6-3: Traffic Operations Analysis - Roundabout Configurations, Land Use Option 1, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
County Road 6 / Waldon Pond Drive								
NB	B	0.73	14.4	60.9	A	0.52	9.2	27.5
WB	B	0.44	14.3	17.2	A	0.12	5.9	3.6
SB	A	0.49	8.1	27.8	C	0.87	22.4	142.9
EB	A	0.21	7.3	6.9	B	0.20	10.3	5.8
County Road 6 / Amherst Drive								
NB	A	0.43	9.6	19.9	B	0.48	11.4	24.9
WB	B	0.62	13.9	47.8	A	0.41	8.3	17.0
SB	A	0.48	8.2	25.7	C	0.78	16.6	123.4
EB	A	0.27	7.9	9.3	A	0.26	9.7	8.0
County Road 6 / Kildare Avenue								
NB	A	0.25	5.4	9.9	A	0.34	6.5	146
WB	A	0.19	5.7	6.5	A	0.09	5.0	2.9
SB	A	0.28	5.4	11.8	A	0.39	6.7	19.1
EB	A	0.18	5.4	6.1	A	0.13	5.2	4.4

*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.

The results of the roundabout analysis indicate that all intersections along County Road 6 and the north access to Taylor-Kidd Boulevard will operate with all movements at an acceptable LOS B or better under the Option 1 high-growth projected volumes. V/C ratios of up to 0.78 are anticipated for approaches along County Road 6, with queues of up to 125 m.

As the total traffic analysis indicates a single lane roundabout at County Road 6 / Taylor-Kidd will not be sufficient to accommodate the anticipated traffic volumes with the Amherstview West Secondary Plan Area developments, an additional analysis has been undertaken with this expanded to a two lane roundabout, with all approaches configured with left-through and through-right lanes. The results of this analysis are summarized in Table 6-4.

Table 6-4: Traffic Operations Analysis – County Road 6 / Taylor-Kidd Boulevard, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Amherst Drive / Speers Boulevard								
EB	B	0.58	12.2	38.8	A	0.35	7.9	12.0
WB	B	0.42	10.6	16.8	A	0.44	8.9	19.4
NB	B	0.38	10.1	13.8	B	0.44	11.3	18.3
SB	A	0.27	8.1	8.3	C	0.50	16.1	20.1

*95th percentile queue in m, representing the maximum back of queue with 95th percentile volumes.

The analysis indicates that the expansion to a two-lane roundabout would be sufficient to accommodate the high growth total traffic movements at the County Road 6 / Taylor-Kidd Boulevard intersection at an acceptable level of service and mitigate the substantial queues and delays anticipated at a single lane roundabout.



The signalization of Amherst Drive / Speers intersection has been considered as a mitigation measure for the failing eastbound and westbound movements in the high growth scenario PM peak hour, under an AWSC intersection. A signal timing plan has been designed for this intersection, with a cycle length of 50s for both AM and PM peak periods which helps improve traffic operations significantly. The results of the signalized intersection analysis are summarized in Table 6-5 below.

Table 6-5: Traffic Operations Analysis - Amherst Drive / Speers Boulevard Signalized Option, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Amherst Drive / Speers Boulevard								
EB	A	0.34	6.5	36.0	A	0.49	8.8	47.9
WB	A	0.33	6.7	33.2	B	0.51	10.7	51.0
NB	C	0.58	21.5	27.9	B	0.40	13.6	21.2
SB	B	0.11	11.8	7.4	C	0.67	21.6	36.8
*95th percentile queue in m, representing the maximum back of queue with 95 th percentile volumes.								

The results of the signalization alternative for Amherst Drive / Speers Boulevard intersection indicate that movements will operate at LOS C or better during both peak hours. The failing eastbound and westbound movements during the PM peak hour under AWSC conditions will improve to LOS A and LOS B respectively with minimal delays. All queues will be sufficiently accommodated without spilling over into adjacent intersections.

6.4 TRAFFIC OPERATIONS ANALYSIS – OPTION 2/3 HIGH GROWTH

Traffic analysis has been carried out for AM and PM ultimate design conditions for Options 2/3 under the high-growth scenario. Similar to Option 1, traffic volumes for these scenarios include projected 2046 future background volumes and development generated traffic, as illustrated in **Figure 6-2**. The same mitigation measures that were proposed for Option 1 have been applied for the Option 2/3 analysis as well.

It is noted that the development trip generation from the Amherstview West Secondary Plan Area consists of the same number of overall trips for all three development options; Options 2/3 only differ from Option 1 as the trips are distributed between the three available accesses compared with the four available in Option 1. Outside of the County Road 6 corridor, the future traffic operations will be the same as was reported in the Option 1 analysis. For this reason, the summary of the analysis results for Options 2/3 has been limited to the County Road 6 corridor as the operations at all other intersection will be identical to Option 1. A summary of the Synchro 11 analysis result for the County Road 6 corridor is presented in **Table 6-6** below and the full Synchro reports are provided in **Appendix A**.

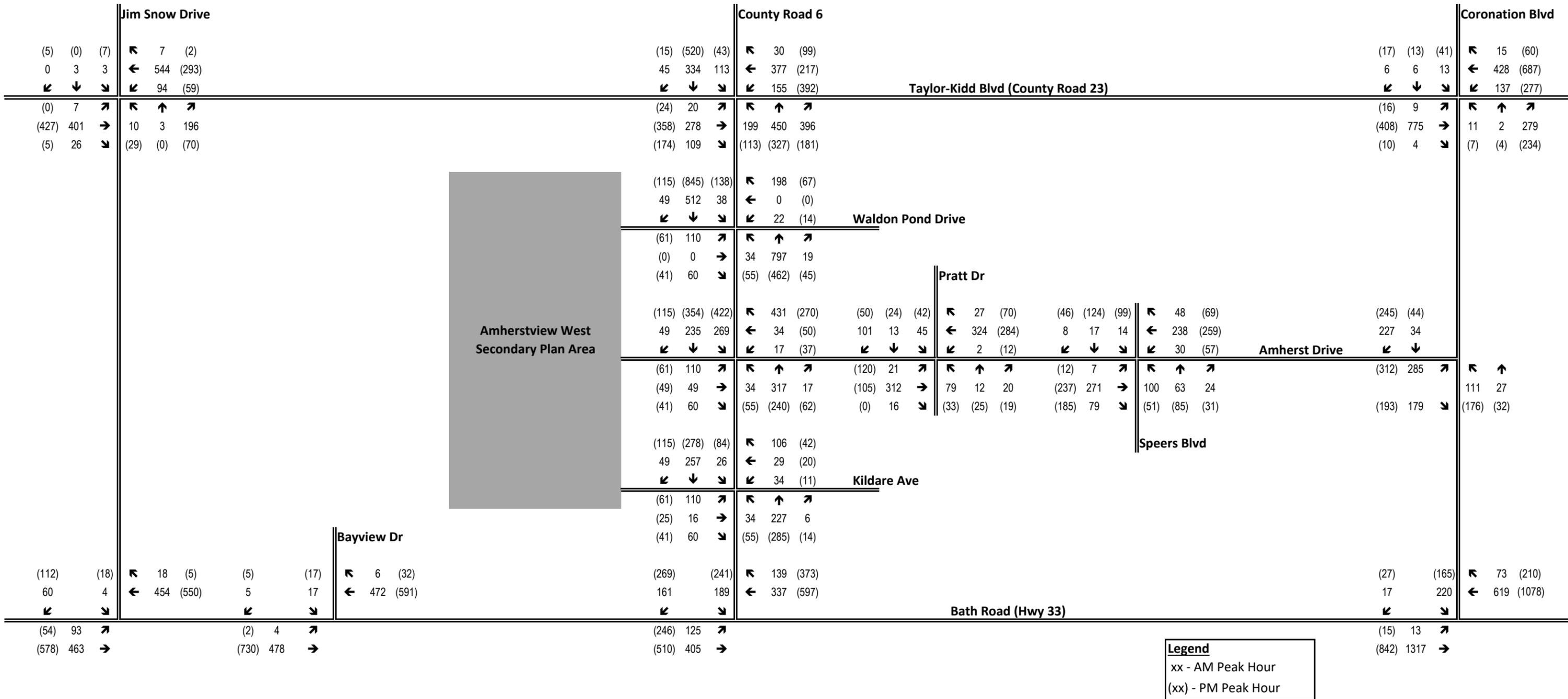


Figure 6-2: Future Total Traffic 2046 - Options 2/3, High Growth



Table 6-6: Traffic Operations Analysis – 2046 Total Traffic, Options 2/3, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
NB	F	1.25	136.6	793.2	C	0.73	17.1	85.5
WB	E	0.88	35.9	126.2	E	0.94	41.4	204.0
SB	E	0.90	41.5	106.1	F	1.04	71.8	215.0
EB	C	0.62	15.7	41.1	F	1.30	177.2	442.6
County Road 6 / Waldon Pond Drive (Signal)								
EBL	D	0.51	45.8	39.3	D	0.37	47.2	25.7
EBTR	A	0.11	0.4	0	A	0.12	0.6	0
WBL	D	0.22	54.1	13.6	D	0.16	52.8	10.4
WBTR	B	0.69	19.9	26.4	A	0.15	0.6	0
NBL	A	0.08	6.3	m5.4	A	0.23	8.3	13.5
NBTR	B	0.68	14.3	242.6	A	0.38	6.2	81.2
SBL	A	0.15	8.9	10	A	0.24	6.3	25.2
SBTR	A	0.47	9.8	109.2	B	0.72	12.6	260.2
County Road 6 / Amherst Drive (Signal)								
EBL	C	0.53	28.2	22.4	D	0.65	51.6	19.8
EBTR	B	0.25	10.4	14.9	B	0.28	15.1	16.1
WBL	C	0.12	26.4	7.3	C	0.19	24.1	11.5
WBTR	B	0.82	15.6	32.2	B	0.67	11.8	24.6
NBL	B	0.09	19.6	11.7	C	0.18	20.1	16.6
NBTR	C	0.48	23	#92.2	C	0.47	20.9	#69.4
SBL	B	0.53	12.3	44	B	0.67	10.9	49.5
SBTR	A	0.28	8.5	43.3	A	0.43	6.8	52.1
County Road 6 / Kildare Avenue (Signal)								
EBL	C	0.50	28.4	23.1	C	0.32	24.7	14.2
EBTR	A	0.23	8.9	9.8	B	0.24	11.9	10.1
WBL	B	0.15	19.9	9.2	B	0.06	19.2	4.5
WBTR	A	0.36	9.1	13.9	B	0.23	11.3	9.5
NBL	A	0.05	5.3	5.4	A	0.09	5	8
NBTR	A	0.19	5.2	24.4	A	0.25	4.9	32.3
SBL	A	0.04	5.3	4.4	A	0.12	5.1	11.1
SBTR	A	0.25	5.2	30.3	A	0.33	4.9	40.4
Bath Road / County Road 6 (Signal)								
EBL	A	0.25	7.5	16.8	C	0.69	22.7	#63.6



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
EBT	A	0.40	7.6	46.2	A	0.48	8.9	61.3
WBT	A	0.34	7.2	37.7	A	0.55	9.9	76.2
WBR	A	0.16	1.7	6	A	0.36	1.9	10.2
SBL	C	0.60	27.4	35.5	C	0.64	28	43.8
SBR	A	0.40	5.9	10.7	A	0.54	8.8	20.7

In general, the results of the high growth scenario Option 2/3 analysis are similar to the Option 1 analysis results, and the same mitigation measures have been applied. With only three accesses from the Secondary Plan area all to County Road 6 in the Option 2/3 configuration, operations at the intersections along County Road 6 will experience slightly more delay than Option 1, most notably at the EB approaches exiting the Secondary Plan area at Amherst Drive and Kildare Avenue; auxiliary EB left turn lanes at both intersections will be required to minimize the potential for queue impacts on this approach. Northbound queues in the morning and southbound queues in the evening along County Road 6 will also be more extensive than Option 1, with queues approaching the north Secondary Plan area access opposite Waldon Pond Drive extending to more than 200 m during the peak hours. These queues are primarily a result of through volumes along County Road 6 and limited mitigation would be possible for the existing single lane configuration. The provision of northbound and southbound left turn lanes at the intersections entering the Secondary Plan area would serve as a mitigation measure to reduce the potential for a left turning vehicle to delay the traffic behind it.

6.5 LAND USE CONCEPT OPTIONS 2/3 – ROUNDABOUT CONTROL, HIGH-GROWTH SCENARIO

Analysis of the intersections along County Road 6 have also been evaluated as roundabouts for lane use concept Options 2/3 under the high growth volumes. Similar to the Option 1 analysis, this analysis is based on single lane roundabouts at all intersection except for County Road 6 / Taylor-Kidd Boulevard, which includes the same mitigation measures as were assessed for Option 1. The analysis results for the evaluation of the site accesses as roundabouts are summarized in **Table 6-7** and the full Synchro reports are provided in **Appendix C**.

Table 6-7: Traffic Operations Analysis - Roundabout Configurations, Land Use Options 2/3, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
County Road 6 / Waldon Pond Drive								
NB	C	0.81	18.6	158.1	B	0.56	10.1	30.8
WB	C	0.50	17.4	20.7	A	0.12	6.3	3.8
SB	A	0.53	8.8	31.4	D	0.94	30.2	218.1
EB	A	0.26	8.2	8.7	A	0.25	11.6	7.2
County Road 6 / Amherst Drive								
NB	B	0.48	10.8	25.6	B	0.51	12.3	28.0
WB	C	0.66	16.0	53.4	A	0.42	8.8	17.8
SB	A	0.50	8.5	27.8	C	0.82	19.4	178.5
EB	A	0.32	8.6	11.1	B	0.29	10.5	9.4



Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
County Road 6 / Kildare Avenue								
NB	A	0.26	5.6	10.1	A	0.35	6.6	14.8
WB	A	0.20	6.0	7.0	A	0.09	5.1	2.9
SB	A	0.29	5.6	12.5	A	0.41	7.0	20.9
EB	A	0.21	5.7	7.4	A	0.15	5.4	5.0
*95th percentile queue in m, representing the maximum back of queue with 95 th percentile volumes.								

Similar to the low-growth analysis, the roundabout analysis of the Option 2/3 configurations indicates higher delays and queuing at the roundabouts along County Road 6 compared with Option 1 as all traffic from development within the Secondary Plan area will be concentrated on County Road 6. All individual turning movements will operate at an acceptable LOS C or better under this scenario with the exception of the southbound approach to the County Road 6 / Taylor-Kidd Boulevard roundabout which will operate at a LOS D and V/C ratios near capacity. Similar to the signalized analysis, the projected Option 2/3 high growth volumes will contribute to long queues on County Road 6, particularly at the intersection with Waldon Pond Drive. While long, these queues are not expected to extend long enough to impact upstream intersections.

Similar to Option 1, the County Road 6 / Taylor-Kidd Boulevard intersection has been assessed as a two-lane roundabout as the single lane configuration analyzed above will not provide sufficient capacity for the anticipated high growth traffic volumes. The analysis of the projected Option 2/3 volumes on a two-lane roundabout are summarized in Table 6-8.

Table 6-8: Traffic Operations Analysis – County Road 6 / Taylor-Kidd Boulevard, High Growth Scenario

Movement	AM Peak Hour				PM Peak Hour			
	LOS	V/C	Delay (s)	Q95	LOS	V/C	Delay (s)	Q95
Taylor-Kidd Boulevard / County Road 6 (Roundabout)								
EB	B	0.63	13.6	48.9	A	0.38	8.3	13.6
WB	B	0.46	12.1	13.1	A	0.46	9.6	21.5
NB	B	0.41	11.4	15.5	B	0.46	12.1	19.5
SB	A	0.30	8.5	9.3	C	0.58	18.6	25.9
*95th percentile queue in m, representing the maximum back of queue with 95 th percentile volumes.								

The analysis indicates that the expansion of the proposed County Road 6 / Taylor-Kidd Boulevard intersection would provide sufficient capacity for the high growth scenario volumes, mitigating the capacity constraints observed in the analysis of the single lane roundabout.

7 TRANSIT COVERAGE

As noted in the review of existing conditions, Kingston Transit operates Route 10 serving Amherstview. This route includes several loops to cover the local streets within Amherstview east of County Road 6 but follows an overall route using Amherst Drive to Pratt Drive, turns around using a loop via Kildare Avenue, Speers Avenue, and Kidd Drive before returning to Amherst Drive for the trip back into Kingston.

Transit coverage is generally based on a 4- to 5-minute walking distance around a stop, or a distance of approximately 400 m. With the western limit of the existing transit service at Pratt Drive approximately 240 m east of County Road 6, a 400 m catchment area around the existing westernmost stops would cover only the portions of the Secondary Plan area along County Road 6. The existing transit coverage in relation to the three land use concept options is illustrated in **Figure 7-1** to **Figure 7-3**.

Based on this, it is anticipated that transit service may ultimately be extended to the west to cover the new development in the Secondary Plan area. This extension could take the form of the extension of the routing westward to County Road 6, or could be extended further into the Secondary Plan area. While the latter extension would provide the flexibility to provide transit coverage for the entirety of the new development, longer route extensions would also contribute to increased travel times which may require the provision of additional buses to provide sufficient service frequency to meet demand.

Two potential transit routings to serve the Secondary Plan area have been conceptually illustrated in the figures below. Potential transit travel time increases have been estimated based on a transit operating speed of 18.88 km/h, taken from the average Kingston Transit operating speeds reported in the Canadian Urban Transit Association's (CUTA's) Canadian Conventional Transit Statistics (2019).

1. A shorter extension (Figure 7-4 to Figure 7-6) to bring transit service to County Road 6, with new stops at Amherst Drive and Kildare Avenue. This extension would add an additional transit travel distance of approximately 800 m to the existing routing, resulting in a travel time increase of the route of approximately 2.5 minutes in each direction.
2. A longer extension (Figure 7-7 to Figure 7-9) of transit service through the Secondary Plan area to include a stop at Waldon Pond Drive to serve the north end of the development. Additional travel distance would be approximately 2.3 km for Option 1, 2.7 km for Option 2, and 2.2 km for Option 3; these would result in travel time increases of approximately 7.3 min for Option 1, 8.6 min for Option 2, and 7.0 min for Option 3.

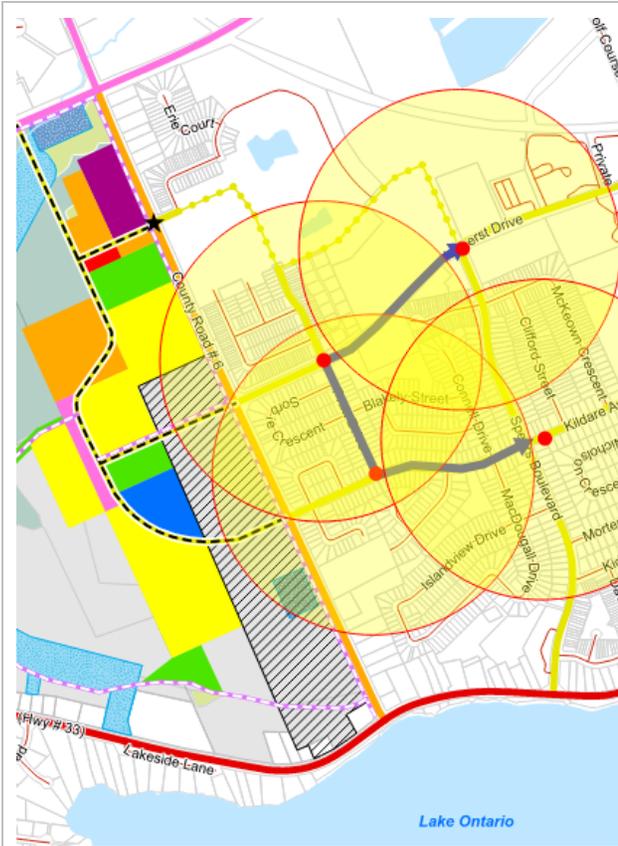


Figure 7-1: Option 1 with Existing Transit Coverage

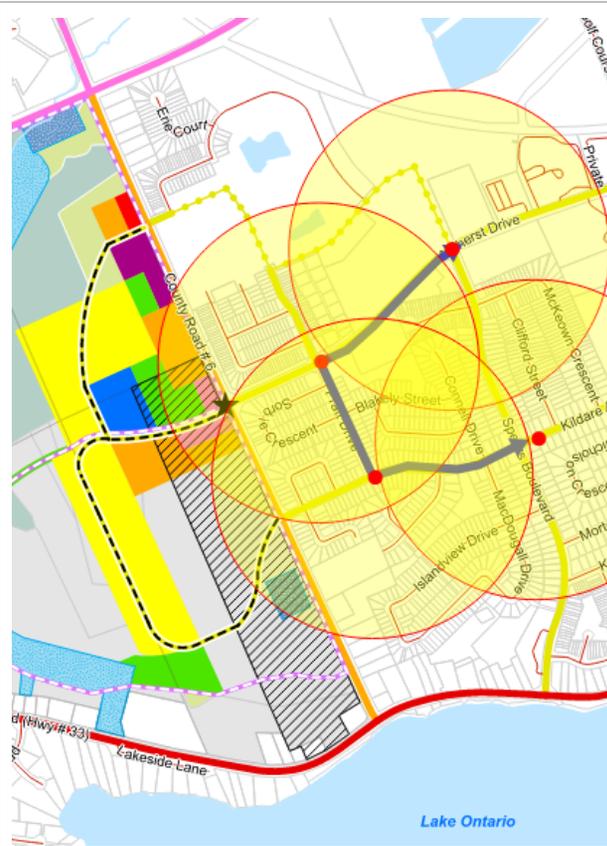


Figure 7-2: Option 2 with Existing Transit Coverage

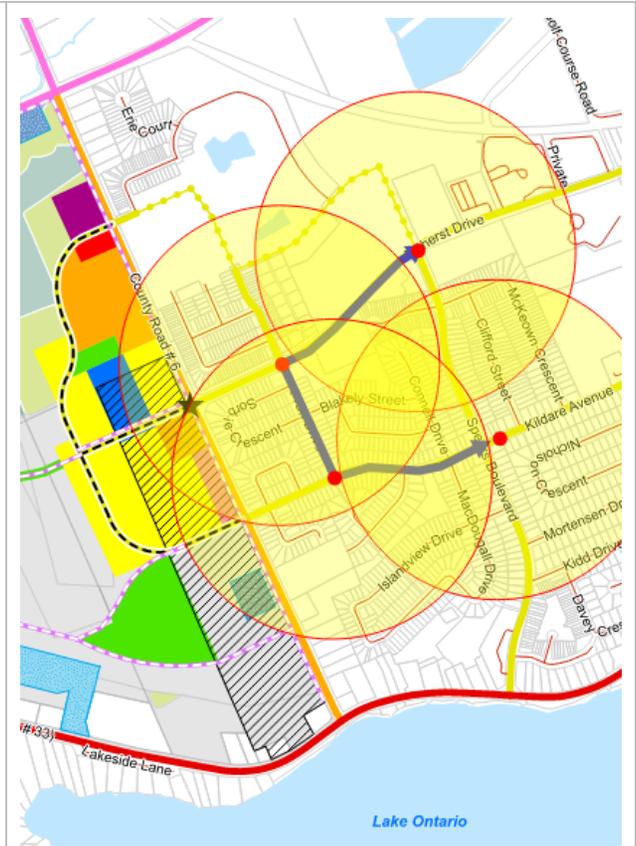


Figure 7-3: Option 3 with Existing Transit Coverage

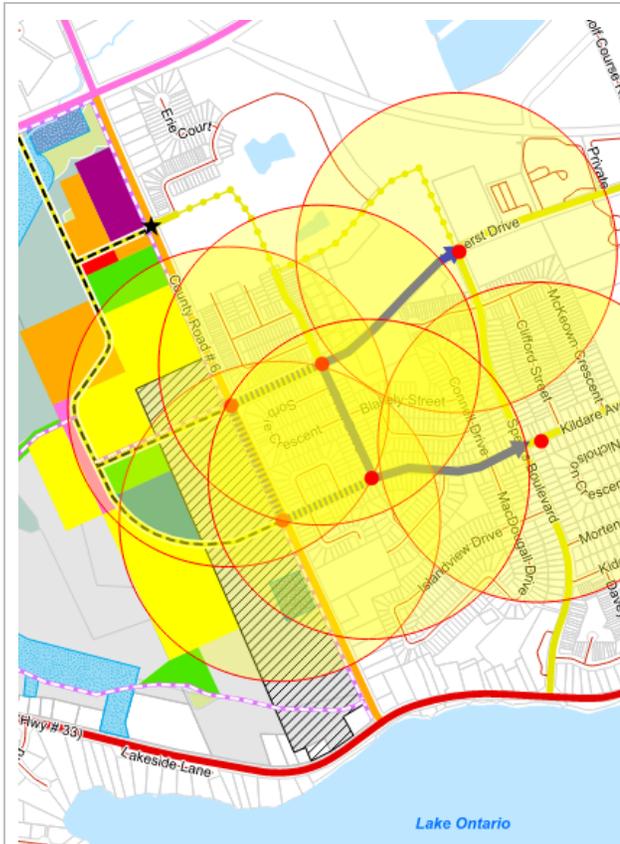


Figure 7-4: Short Transit Extension Coverage Area – Land Use Concept Option 1

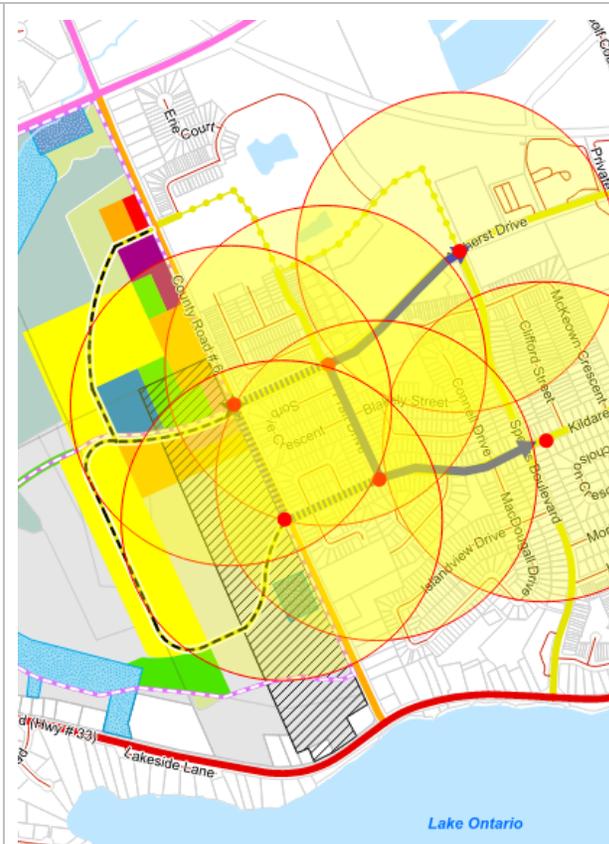


Figure 7-5: Short Transit Extension Coverage Area – Land Use Concept Option 2

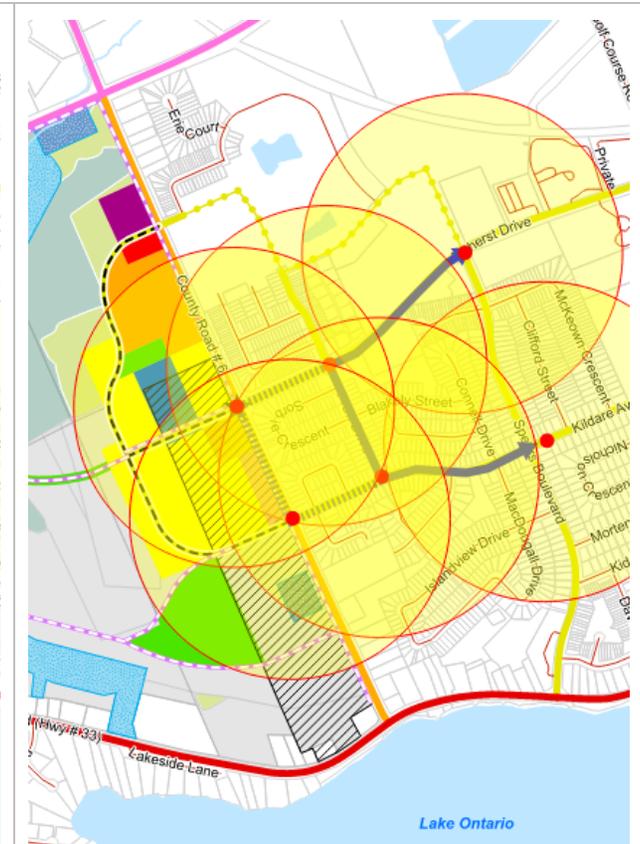


Figure 7-6: Short Transit Extension Coverage Area – Land Use Concept Option 3



The resulting coverage areas illustrated above indicate that the shorter transit extension to County Road 6 would result in much of the Secondary Plan area lying within 400 m of transit service, but the commercial uses at the north end and residential areas in the western end of the site would lie outside this distance. The extension of transit into the site in the longer extension would allow all of the anticipated development areas to lie within walking distance of transit, including the north commercial areas if a new stop is implemented in the vicinity of Waldon Pond Drive. New transit stops within the Secondary Plan area were generally assumed to be near collector road intersections, but it is noted that an additional stop midway along the southern collector road in Options 1 and 2 was added to provide transit coverage for the southernmost portions of the development area.

It is additionally noted that the 400 m transit coverage areas illustrated are a linear radius around each stop; in reality, walking distances will be subject to the configuration of the internal local road and active transportation network and thus may limit the coverage area. It will be a key consideration during the preparation of subdivision and site plan applications to consider parcel and road configurations that will minimize walking distances to transit in order to maximise the potential for transit coverage.

It is noted that while additional transit stops will be effective in placing more of the Amherstview Secondary Plan Area within walking distance to transit service, the additional distance will result in travel time impacts to the bus route. Loyalist Township is currently undertaking a transit service review in coordination with Kingston Transit; further review of the transit service to Amherstview will be required to confirm a routing to balance frequency and coverage for the Amherstview West Secondary Plan area.



8 ACTIVE TRANSPORTATION CONSIDERATIONS

The concept for active transportation connectivity in the Secondary Plan area includes a number of elements common to all three of the potential land use concept options:

- A new multi-use pathway along the west side of County Road 6 in a 10m wide trail block outside of the County Road 6 ROW between Taylor-Kidd Boulevard and Bath Road.
- A new multi-use pathway along the north side of the Amherst Drive extension into the Secondary Plan area, connecting to pathway to the west connecting to Parrott's Bay Conservation Area.
- New pathway connection along the north and south ends of the site also connecting to Parrott's Bay Conservation Area.

Local active transportation servicing the Secondary Plan area will be a function of the ultimate collector and local road network; considerations during the design of subdivisions in this area should include ensuring a connected sidewalk network for pedestrian circulation, cycling accommodation on roadways, and connections to the major pathway facilities. Sidewalks along both sides side of the collector roads within the Secondary Plan area would be required by Loyalist Township to maintain a continuous pedestrian network within the area and maintain consistency with the residential areas to the east; sidewalks along both sides of local roads will also be desirable for connectivity. While each of the three concept plans will provide effective connectivity through the Secondary Plan area, the diversion required between the Amherst Drive facility and pathway connection to the Parrott's Bay conservation area in the Option 2 configuration represents a slightly less attractive option that then Option 1 and 3 configurations where the connection between Amherst Drive and the pathway to Parrott's Bay is continuous.

Many sidewalk policies are based on roadway classifications and traffic volumes. Arterial roads typically require sidewalks on both sides of the road. Collectors often require sidewalks on one side of the road unless certain criteria identify when they can be implemented on both sides (e.g., daily traffic is more than 2,000 vehicles per day, there is sufficient road space or it is adjacent to a high pedestrian generator such as a school, park, or pedestrian link). The requirement for local roads is dependent on the municipality and several Ontario Municipalities, national and international guidelines specify contexts for where sidewalks are not required, for example: The National Association of City Transportation Officials (NACTO) Urban Street Design Guide (2013)

8.1 INFRASTRUCTURE MASTER PLAN

As part of Loyalist Township's Infrastructure Master Plan (IMP) project that is currently underway, a Technical Memorandum has been prepared for the Township's Active Transportation Initiative. The objective of the Active Transportation Initiative is to review existing active transportation infrastructure and develop a plan for active transportation infrastructure improvements in Loyalist Township over the next 25 years. The IMP will align with other Township documents, including but not limited to the Strategic Plan, Official Plan, ResiLienT Loyalist Township Climate Action Plan, Asset Management Plan, as well as the Amherstview West Secondary Plan.

The Active Transportation Initiative is divided into the following four components:



1. Route identification for trail development.
2. Identification of locations for new sidewalks to ensure continuity within the existing sidewalk system and increase safety.
3. Identification of locations and plan development for the replacement of sub-standard sidewalk sections, sections not in compliance with the Access for Ontarians with Disabilities Act (AODA) and addressing missing links.
4. Identification of policy areas to improve the facilitation of active transportation.

A review of active transportation within Loyalist Township included an online survey in the fall of 2021, in which 331 residents responded. Based on these responses, 75% of the respondents indicated that they would like to see increased investment in active transportation infrastructure. Only 7.6% of the respondents were already participating in active transportation for their commute to work. In addition, over 39% of the respondents noted that the second largest barrier to active transportation in the area, after distance to work, was the lack of physical separation from traffic. Notable concerns in Amherstview include the desire for improvements along Bath Road including a crossing to Fairfield Park, County Road 6, Coronation Boulevard, Amherst Drive, and linkages to existing trails in Parrott's Bay.

A list of potential projects under the IMP related to active transportation include the following:

- Rural Trail Development
- Urban linkages – trails and sidewalks
- Address sidewalk discontinuities

8.2 DESIGN RESOURCES

The principal source of design guidance for cycling facilities in Ontario is Ontario Traffic Manual (OTM) Book 18: Cycling Facilities. This document provides general guidance on facility types, selection, design considerations, intersection treatments, maintenance, and unique considerations such as bicycle parking. OTM Book 18 was most recently updated in October 2021.¹ For pedestrian facilities, design guidance is provided in OTM Book 15: Pedestrian Crossing Facilities.²

Additional sources of AT facility design guidance and evaluation that are available for use include the following documents:

- TAC Geometric Design Guide for Canadian Roads (2017) – Chapter 5: Bicycle Integrated Design and Chapter 6: Pedestrian Integrated Design³
- MTO Bikeways Design Manual (2014)⁴
- FHWA Small Town and Rural Design Guide: Facilities for Walking and Biking (2017)⁵
- OTC Multi-Modal Level of Service Guidelines (2022)⁶

¹ October 2021 Updated OTM Book 18 can be downloaded from the MTO library [here](#).

² June 2016 OTM Book 15 can be downloaded from the MTO library [here](#).

³ [PTM-GEODES5-E | tac-atc.ca](#)

⁴ March 2014 MTO Bikeways Design Manual can be downloaded from the MTO library [here](#).

⁵ <https://ruraldesignguide.com/>

⁶ The new Provincial MMLOS Guidelines can be downloaded from the Research and Resources section on the Ontario Traffic Council's website [here](#).

8.3 PROPOSED FACILITY TYPES

Active transportation facilities can generally be categorized as on-road or off-road facilities, with various subcategories based on users, level of separation, street context and land use context. On-road cycling facility types are often classified by their separation from motorized traffic. Users are generally more comfortable with increasing separation between the cycling facility and motorized traffic. **Table 8-1** provides a description of the available facility types that may be implemented as part of the Secondary Plan.

Table 8-1: Proposed Active Transportation Facility Types

Facility Type	Cross Section	Description
In-boulevard Multi-use Path		<p>In-boulevard multi-use paths are physically separated from motor vehicle traffic by a boulevard between the path and motor vehicle traffic lane. The multi-use path is constructed adjacent to the roadway but within the road right-of-way. They are shared amongst pedestrians, cyclists, and other active transportation users. In-boulevard facilities provide the highest level of separation for cyclists and are typically used when motor vehicle operating speed and volumes are very high. The increased separation can improve the comfort level for all users of the facility.</p> <p>The path is typically 3.0 to 4.0 metres wide. If there are significant constraints such as utilities or major natural features, a two-way shared path may be narrowed down to 2.4 metres such that costly construction activities can be avoided.</p>
Off-road Trail		<p>Off-road trails are located outside of a road right-of-way and are typically found within hydro corridors, forest tracts and parks. These connections function as recreational facilities or convenient connections between core cycling routes. Similar to an in-boulevard multi-use path, an off-road trail is intended to be shared between cyclists, pedestrians and other non-motorized users.</p> <p>Off-road trails could consist of a variety of surface types depending on the location, context, and surrounding land uses. Natural surfaces or crushed limestone are appropriate surface types. If the demand for trail usage is high or if the trail forms part of a larger trail system, consideration could be given to pave the trail. In the planning and design of off-road trails, due diligence should be completed to ensure</p>

Facility Type	Cross Section	Description
		AODA compliance and environmental impacts are analyzed and mitigated.
<p>Bike Lane</p>		<p>A bike lane is a portion of a roadway which has been designated for the exclusive use of cyclists with the provision of pavement markings and signage. Typical applications for bike lanes are on arterial or collector roadway where there are higher traffic volumes and/or travel speeds and should typically be applied to both sides of the street.</p>
<p>Buffered Bike Lane</p>		<p>A buffered bike lane has the same general application as a bike lane. The difference is that where a bike lane is typically placed adjacent to the curb, their location may shift if adjacent to a parking lane and additional buffer space may be provided to have a clear 'door zone' or for additional separation where motor traffic volumes are very high.</p>
<p>Cycle Track</p>		<p>A cycle track combines the user experience of a separated trail or multi-use path with the on-street infrastructure. It is physically separated from motor traffic with either a vertical or horizontal separation and is also distinct from the sidewalk space. Cycle tracks can be at either the road level or sidewalk level. The space is to exclusively be used by cyclists and can be one-way or two-way in terms of travel direction. Cycle tracks offer a high level of security for cyclists and demonstrate that bicycles are part of the road network by dedicating a space to them. Cycle tracks are used in an urban setting where motor traffic volumes and speeds are high as well as areas where high cycling volumes are anticipated.</p>

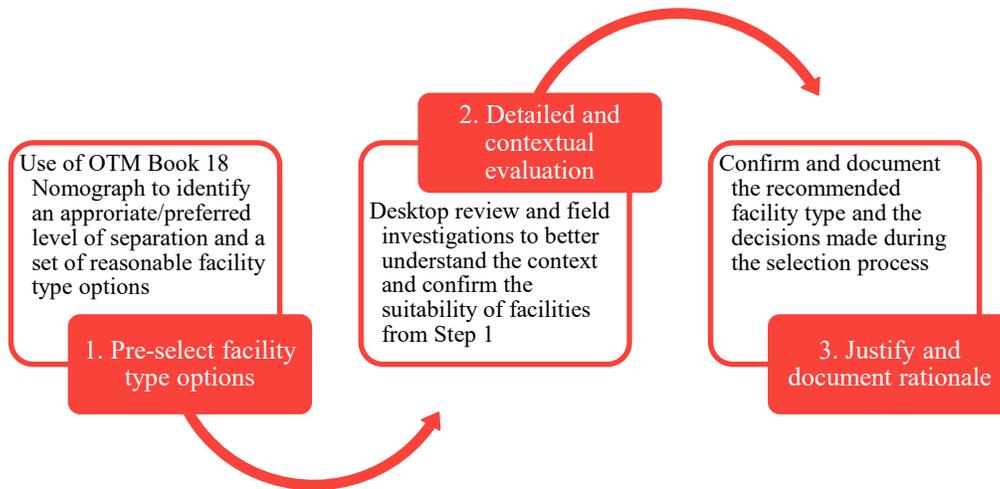
Facility Type	Cross Section	Description
<p>Paved Shoulder</p>		<p>Paved shoulders provide a designated space along the edge of the road. The shoulder is intended to be a priority space for cyclists and other active transportation users. The route should be signed as a bike route with supplementary markings and signage to denote that other users such as pedestrians may use the paved shoulder.</p>
<p>Buffered Paved Shoulder</p>		<p>Buffered paved shoulders provide horizontal separation between the shoulder and adjacent motor vehicle traffic. Buffered paved shoulders are suited to roadways with medium to high motor vehicle operating speeds and traffic volumes. It is recommended that buffer zones be implemented if there are more than 30 trucks operating on the route per hour.</p>

As related to the Land Use Concept Options, a multi-use path would be suitable adjacent and parallel to County Road 6 and an off-road trail can be used to connect County Road 23 to the trails within Parrott’s Bay Conservation Area.

Note that design guidance for multi-use trails is not included in OTM Book 18. The MTO Bikeways Design Manual or local municipal trail design guidelines (if available) should be referred to for guidance. The TAC Geometric Design Guide for Canadian Roads can be used for guidance on the alignment of in-boulevard multi-use paths.

8.4 CYCLING FACILITY SELECTION

A facility type for a proposed cycling route is identified based on the pre-selection nomographs in OTM Book 18. Prior to having a better understanding of the surrounding context, facility types are determined from the Annual Average Daily Traffic (AADT) volumes and posted speed limit on a proposed cycling route for safety and comfort purposes. In other words, roadways with higher traffic volumes and higher posted speed limits would constitute the implementation of cycling facilities that have an increased level of separation from traffic. A review of the surrounding context is then carried out to identify at a planning level whether the recommended facility type would be feasible for implementation based on a multitude of factors, such as existing road right-of-way, presence of vegetation and driveways, utility pole locations, etc. Relevant planning policies, as discussed in Section 3, are to also be taken into consideration when selecting cycling facilities. A summary of the 3-step facility selection process is provided below.



There are two types of pre-selection nomographs that are to be used depending on location and context and provide guidance as to the extent of separation/types of facilities that should be considered. Amherstview has an urban/suburban context based on Schedule C of the Loyalist Township Official Plan. The urban/suburban context can also be indicated by mixed uses, closely spaced driveways, on-street parking, and pedestrian activity. The use of the rural context nomograph can apply in areas that have no concrete curb or have gravel shoulders. The facility selection nomograph tools from OTM Book 18 are shown in **Figure 8-1**.

Based on the current configuration and classification of County Road 6 between Taylor-Kidd Boulevard and Bath Road, as well as the posted speed limit of 60 km/h and 2019 AADT of 5,922, the OTM pre-selection separation level for a cycling facility would be a paved shoulder with buffer or separate multi-use path as indicated in the Land Use Concepts for the Secondary Plan Area. The presence of paved and gravel shoulders within the road right-of-way (approximately 3 m wide) suggests that no road widening would be required to implement buffered paved shoulders or a multi-use path. In general, it is recommended that the implementation of new active transportation facilities be done in conjunction with any planned road reconstruction / resurfacing projects indicated in Loyalist Township’s Asset Management Plan and capital budget for cost efficiencies. MTO and the County of Lennox and Addington should be consulted for roads such as County Road 6 that are not directly within Loyalist Township’s jurisdiction.

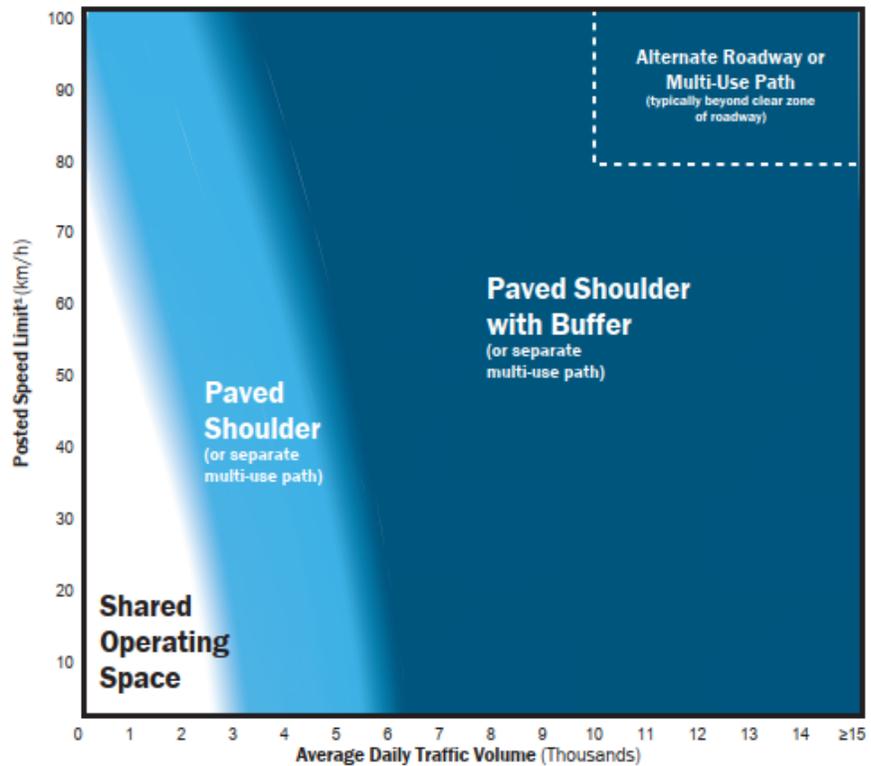
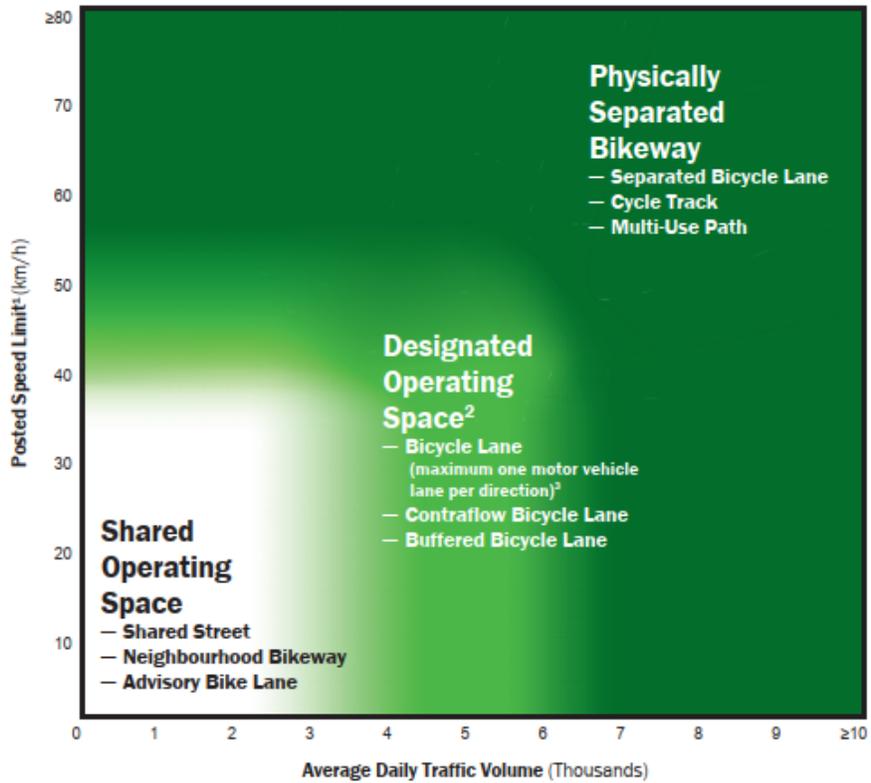


Figure 8-1: OTM Book 18 Desirable Cycling Facility Pre-Selection Nomograph - Urban / Suburban & Rural Contexts

8.5 CYCLING AND PEDESTRIAN CROSSING TREATMENTS

Cycling and pedestrian crossing treatments are intended to allow cyclists and pedestrians to reach a destination on an opposing side of a roadway or to continue their trip along intersecting roadways by clearly delineating areas on a portion of roadway for cycling and pedestrian use through the provision of signage, surface lines or markings, etc. Crossings should be provided where there are destinations or connecting active transportation facilities along both sides of the corridor, and where the distance between signalized intersections is greater than 200 m. A bicycle or pedestrian crossing treatment can also be implemented on roundabout approaches and at right-turn channels. Crossing treatment selection is dependent on the complexity of the crossing environment and exposure to motor vehicle traffic, in which the principles used are similar between selecting cycling crossing treatments and selecting pedestrian crossing treatments. Crossing treatments have the following classifications:

- **Controlled** – locations where motor vehicle movements are controlled by stop or yield signs, traffic signals, etc.
- **Uncontrolled** – cyclists and pedestrians do not have the right-of-way to cross the roadway and are required to wait until it is safe to do so once there is a gap in traffic.

In general, crossing treatments should be considered along and across County Road 6 to correspond with development in the Secondary Plan area.

Cyclists are legally required under the Highway Traffic Act to dismount and walk their bicycle at crosswalks at signalized intersections and at pedestrian crossovers. As such, a crossride provides a designated space where cyclists are permitted to ride across an intersection or crossing.

A green thermoplastic pavement treatment may be applied to highlight conflict areas where bicycles and motor vehicles will cross paths. This is intended to raise awareness to each user group such that they are more aware of the potential for conflict between one another. Typical locations are at high volume entrances, through intersections (e.g., crossrides) or where right-turning vehicles cross a bike lane on the approach to an intersection. A mixed crossride, as shown in **Figure 8-2**, is intended for use at low volume unsignalized crossings and driveways, where pedestrians and cyclists are approaching the crossing on a shared facility, such as a multi-use path.



Figure 8-2: Multi-Use Path Driveway Crossing, Richmond Hill (Source: WSP)

Pedestrian crossovers were introduced in the updated OTM Book 15 and provide a crossing of a roadway where the pedestrian has the right-of-way in any stretch of roadway, not just at an intersection. There are four different types of pedestrian crossovers and the type selected is based on the volume, speed, and number of lanes of the road, with Type A being a typical traffic signal. **Figure 8-3** shows the other three types of crossings.



Figure 8-3: Pedestrian Crossing Types (Source: City of Oakville)

Pedestrian crossovers (PXOs) provide the opportunity to connect trails or defined routes that cross roadways without users needing to travel out of their way to a signalized intersection to have a defined crossing. In addition, a pedestrian crossover can be used to adjoin any existing infrastructure on the opposite side of the road as an alternative to installing a second sidewalk on a road that would front a key destination. Pedestrian crossovers can be beneficial in instances where there is a limited road right-of-way or capital budget to provide a second sidewalk.

Traffic circulation patterns and volumes will depend on the ultimate collector and arterial road configuration but based on the existing and future traffic volumes and road configurations, this would warrant a PXO Type D and C on the internal collector roads and on County Road 6, respectively. PXOs may also be feasible to accommodate pedestrian crossings if roundabout control is selected for the study area intersections.

8.6 TRAIL DESIGN STANDARDS

The nature of trail design and the various considerations/components that need to be addressed require context specific consideration and design. The overall design of trail infrastructure should be founded on best practices. There are no overarching trail design guidelines for the province of Ontario and consideration should be given to the physical, aesthetic, and environmental requirements of each trail type.

8.6.1 ACCESSIBILITY

The Ontario Government is committed to building a more accessible province. The goal of the Accessibility for Ontarians with Disabilities Act (AODA, 2005) is ‘to make Ontario accessible for people with disabilities by 2025’.

As part of the AODA, a set of Accessibility Standards for the Design of Public Spaces are developed to inform pathway and trail design. The intent is that these standards will help remove barriers in outdoor spaces for people with disabilities. The standards are to be applied for new construction and/or extensive renovation of trails and exterior paths of travel and do not apply to on-road cycling facilities. Ontario Regulation 413/12 groups outdoor pedestrian routes into one of the three categories:

1. **Paths of Exterior Travel** - Includes sidewalks and exterior walkways that connect directly to buildings and facilities. Examples include walkways that connect parking lots to buildings, main walkways in parks that connect to park pavilions, playgrounds, and washroom buildings, etc.



2. **Beach Access Routes** - Defined as the main connecting walkway(s) to beaches intended for public use.
3. **Recreational Trails** – Encompass facility types ranging from hard surface multi-use trails in major urban parks to natural surface walking trails in more remote areas.

Sections 80.8 and 80.10 in O.Reg. 413/12 include guidelines and standards that apply to new construction and extensive renovation of exterior pedestrian facilities.

8.6.2 SURFACE TREATMENT

The surface type of a trail linkage can have a strong impact on how the trail is experienced by its users. There are three typical surface types used when designing trail infrastructure:

1. Natural or woodchip
2. Granular surfaces such as stone-dust
3. Asphalt

There are many factors that influence the type of surface that is implemented. A 3.0 m asphalt multi-use pathway provides an accessible and functional trail that caters to the largest range of trail users.



9 TRAFFIC CALMING

The ongoing development of the Loyalist Township Infrastructure Master Plan identifies the need to update the Township's previous Traffic Calming policy, developed in 2009. The Infrastructure Master Plan update included a survey issued to residents, which generated 375 responses on questions related to the perceived safety of the Township Road network. Of the responses, approximately 17% of respondents felt the Township Streets were safe, 59% felt they were moderately safe with a few areas of concern, and 24% felt there were unsafe with many locations of concern. Specific concerns included traffic speeds, safety at residential intersections, pedestrian safety and driver adherence with traffic signage. The survey findings and policy directions for the consideration of traffic calming measures being prepared as part of the Infrastructure Master Plan update are being updated in a supplementary Traffic Analysis Memo. A draft version of this memo was provided for review for the Amherstview West Secondary Plan project.

Many of the road corridors identified as primary concerns in the survey are classified as collector roads, including the Amherst Drive, Speers Boulevard and Kildare Boulevard Corridors in the vicinity of the Secondary Plan area. The review of the survey feedback indicates concerns with the safety on collector roads that provide direct access to residential properties; this concern is supported by the historical collision data along collector roads. The memo includes a recommendation that "the Township's design standards need to consider modifications such that future development proposals that include direct collector road access by low-density housing properties (single family or duplex) not be permitted within Loyalist Township" (IMP Technical Memorandum: Loyalist Township Traffic Calming Initiative). It is anticipated and recommended that this approach be applied to the alignment of future residential land use with the proposed collector roads in the Amherstview West Secondary Plan area.

The planning of the collector and local road network in the Amherstview West Secondary Plan area may include the consideration of traffic calming measures to manage vehicle speeds through the new development to increase resident safety. Measures that may be considered during the roadway planning and design include the following:

- Orientation of low-density residential land use to access local roadways only and prevent direct access onto collector roads.
- Orientation of the collector road alignment to discourage the use of neighbourhood streets as a cut-through route between County Road 6, Bath Road and Taylor-Kidd Boulevard.
- Well marked active transportation facilities and crossings on roadways within the Secondary Plan area. Following the design guidance outline in the preceding section of this report, active transportation facilities will service to provide separation between vehicle traffic and vulnerable road users and clearly identify the portions of the right of way allocated for each mode and who has the right of way where vehicle traffic intersects with active transportation routes and desire lines.
 - Design of these facilities could include additional traffic calming measures such as curb bulb outs and vehicle lane narrowing to further encourage lower traffic speeds and reduce road crossing distances and exposure to traffic for crossings by active modes. The potential for these measures should be considered during design during the plan of subdivision phase and may look to the TAC Traffic Calming Guidelines and NACTO Urban Street Design Guide.
- A monitoring strategy to identify issues and assess the need for additional measures once the development is in place. This may include additional public surveys and speed monitoring by radar speed display boards.

Based on the survey results, additional traffic calming measures would be desirable on the Amherst Drive, Speers Boulevard and Kildare Boulevard Corridors as development in the area progresses. It is noted that the roundabout control evaluated for the new Secondary Plan Area accesses at County Road 6 may provide an element of traffic calming if implemented by slowing all approaching traffic. It is



anticipated that since these corridors have been identified as traffic calming priority corridors in the Infrastructure Master Plan, the methodology being developed as part of the plan will guide the implementation of additional traffic calming measures on these roads.



10 CONCLUSIONS

The Amherstview West Secondary Plan study area includes the area bounded by County Road 23 to the north, County Road 6 to the east, Bath Road (Highway 33) to the south, and the Parrott's Bay Conservation Area to the west. The following points were concluded from the review of existing local policies as a basis for the development of land use concepts for the Secondary Plan area:

- The projections in the Hemson Report project a growth in the population of Amherstview from 9,760 in 2021 to 12,400 by 2046, equivalent to an annual growth rate of 0.96% per year. The majority of this growth will be a result of development within the Amherstview West Secondary Plan area.
- Amherstview is currently served by a single transit service, Route 10, provided by the Kingston Transit Service. A need to improve service to the area has been identified to encourage transit usage in the growing area. Future transit improvements in the area should be in the form of both service and facility improvement (additional stops and amenities such as shelters and benches) to attract ridership growth.
- The Secondary Plan should require sidewalks on both sides of collector roads and recommend sidewalks on both sides of local streets as well as multi-use paths and/or separated bike trails where possible. These will serve the Loyalist Township's transportation goal of encouraging active transportation as an alternative to automotive travel and transit. If any modifications of County roads are required as a result of the Amherstview West development, they will include paved shoulders for cycling and walking, in accordance with the County's Policy for establishing a multi-use on-road facility network for County Roads.
- The Secondary Plan should consider the orientation of low-density residential development to prohibit frontage onto the new collector roads, as local historical collision records have shown a correlation between collector road collisions and residential driveways.
- In accordance with the Lennox and Addington Official Plan, sidewalks, cycling routes/facilities and multi-use pathways must be considered for new roadways in the development area.
- Pedestrian safety issues have been noted at intersections on bordering roadways because of a lack of dedicated crossings. Safe pedestrian connections to destinations in the area will be a key consideration of the Secondary Plan.
- The County of Lennox and Addington 2014 TMP update proposed a roundabout to replace the existing AWSC at CR 6 and CR 23 intersection to address future capacity deficiencies expected following the completion of the Lakeview Ponds Division development southeast of the intersection.
- Planned roadway capacity expansions for the area include an extension of County Road 23 from Highway 4 west of the study area to Highway 7 and later to County Road 21 (2029 to 2034).

Through the Secondary Plan development process, three land use concepts have been developed. From these land use concepts and projected residential and commercial growth targets, an analysis of anticipated traffic operations to the 2046 planning horizon has been undertaken. Key assumptions informing this analysis and key conclusions include the following:

- Updated traffic volumes at the study area intersections were collected by WSP in January 2022. These counts represented a period where schools were open to in-person attendance, but some restrictions resulting from the COVID-19 pandemic were still in effect.
- A comparison of the collected traffic counts to 2022 projected volumes from the previous Lakeview Ponds Traffic Impact Study prepared by McIntosh Perry indicates that the 2022 counted volumes represent a reduction from the 2022 background volumes projected as part of that study. This reduction can be attributed to the COVID-19 pandemic in 2022 and the widespread adoption of remote work. It is noted that as of 2022 only part of the Lakeview Ponds Development has been completed.
- Traffic analysis was prepared for two growth scenarios:
 - A low-growth scenario based on the 2022 counted volumes, plus trip generation from the remaining Lakeview Ponds development still to be constructed and traffic generation from the proposed Umicore Battery plant and other proposed industrial development to the west.



- A high-growth scenario projected from the Lakeview Ponds TIS 2022 background volume projections, plus full buildout of the Lakeview Ponds development and traffic generation from the proposed industrial development to the west. This scenario is based on the assumption that traffic will eventually recover to pre-COVID levels and continue to grow to 2046.
- A background traffic growth rate of 1.0% has been applied to project background volumes to the 2046 planning horizon, based on the population growth in the area projected in the Hemson Projections. While it is acknowledged that Lennox and Addington Counties have reported recent historical growth rates on County Roads 6 and 23 (Taylor-Kidd Boulevard) in the range of 3-4%, it is noted that the combination of the 1.0% background growth and the additional traffic from the remainder of Lakeview Ponds, industrial developments and Amherstview West Secondary Plan area will result in growth to 2046 corresponding to annual growth rates of between 4% and 8% for the low growth scenario and between 11% and 14% for the high growth scenario. For this reason, the 1.0% background growth rate has been maintained for the analysis as the use of higher growth rates is likely to result in double counting of the development generated traffic that has been added to the projections separately.
- Trip distribution of development generated traffic in the Amherstview West Secondary Plan area is based on 2022 traffic volumes on the study area roadways. It is noted however that due to the existing and expected congestion on Bath Road that this corridor will have a limited capacity to accommodate future traffic growth. As a result, it is likely the Taylor-Kidd Boulevard will be the preferred east-west corridor between Amherstview West and Kingston. Distribution between the Taylor-Kidd Boulevard and Bath Road corridors should be refined through future traffic studies supporting plan of subdivision and site plan approvals in the Amherstview West Secondary Plan area, with reference to future traffic counts that will establish post-COVID-19 trends in traffic growth.
- Proposed development in the Amherstview Secondary Plan Area includes a proposed school site; the configuration and student population at this future school is yet to be determined, but the Limestone District School Board has estimated a student population of approximately 400-600 students at the new school. Trip generation for the proposed school has been based on the use of Southview Public School in Napanee as a proxy site; this school has a population of approximately 600 students which would represent a similar size school to what is expected for the Amherstview West Secondary Plan area.
- Analysis of future background volumes without the traffic generated by development in the Secondary Plan area indicates that the low-growth scenario volumes will generally operate at an acceptable level of service under the 2046 projected volumes. The high-growth scenario volumes will also operate at an acceptable level of service at most intersection locations, although some currently congested movements along Bath Road and Coronation Boulevard will operate at or near capacity with the future traffic growth expected.
- Ultimate 2046 traffic volumes with the projected development in the Secondary Plan Area have been analyzed based on both signalization and roundabout control at all intersections along County Road 6. Both approaches would allow all traffic movements at these new accesses to the Amherstview West Secondary Plan area to operate at an acceptable level of service under projected 2046 volumes in both the low- and high-growth scenarios; but it is noted that weekday queues along County Road 6 will begin to extend to exceed 100m-200m in some instances under the high growth scenario volumes, most notably if roundabouts are implemented.
- The intersection of County Road 6 and County Road 23 (Taylor-Kidd Boulevard) was analysed as a single lane roundabout as proposed in the County Transportation Master Plan. The traffic analysis indicated that this configuration would be sufficient to accommodate the 2046 total low growth volumes, but the realization of the high growth volumes would exceed the capacity of several approaches by 2046 and expansion to a two lane roundabout would be required. It is anticipated that traffic monitoring would be required to determine the need for future expansion of the roundabout, either in the form of new auxiliary lanes as proposed by the Counties or by the expansion to a two lane roundabout.
- The intersection of County Roads 23 (Taylor-Kidd Boulevard) and 24 (Coronation Boulevard) was also analyzed as a single lane roundabout per the County TMP recommendation; the analysis indicates that the roundabout implementation will be required to accommodate future traffic volumes. The single lane roundabout configuration is expected to accommodate both the high and low growth projected volumes with all approaches at an acceptable level of service.



- The intersections along Amherst Drive east of County Road 6 were assumed to maintain their existing unsignalized configurations in the 2046 low and high growth analysis. The existing configurations are sufficient to maintain acceptable levels of service at both the Pratt Drive and Speers Boulevard intersections under the low growth scenario. Under the high growth scenario, the Amherst Drive / Pratt Drive intersection will operate at an acceptable level of service, but the eastbound and westbound approaches to the intersection with Speers Boulevard will approach capacity and result in growing delays for traffic along Amherst Drive. A sensitivity analysis of this intersection indicates that additional traffic control in the form of signalization or a roundabout would result in a significant improvement to the level of service of this location under the high growth projected volumes; the Township would prefer a roundabout due to the additional traffic calming benefits.
- All traffic analysis was based on the existing single-lane configurations of County Road 6, Taylor-Kidd Boulevard and Bath Road and did not reflect the potential widenings as suggested in the County's Transportation Master Plan. The analysis indicates that with the implementation of signals or roundabouts, the 2046 volumes at most locations can be accommodated at an acceptable level of service, but the high growth scenario volumes on Bath Road will exceed the capacity of the road approaching the intersection with Coronation Boulevard; this would be a result of background growth, and is likely to occur even with a greater proportion of new development traffic using Taylor-Kidd Boulevard for access to and from Kingston. It is noted that the proposed widening of Taylor-Kidd Boulevard would be beneficial in improving the anticipated queuing and delay impacts at the busier intersections in the analysis and would be able to offset some of the projected traffic on Bath Road which is constrained from being widened. The design of these potential roadway improvements should include an updated review and analysis of projected traffic volumes as more information becomes available about continuing changes in traffic patterns after the COVID-19 pandemic.
- The extension of transit service to County Road 6 will put much of the Secondary Plan area within walking distance of transit, but transit coverage will likely exclude the northernmost commercial areas and residential areas in the far west of the Secondary Plan area. Each of the collector road configurations on the Secondary Plan land use concepts will provide options for transit circulation through this area to expand the transit coverage area to include all of the new development. However, this transit route extension would require additional transit travel time which would need to be reviewed in coordination with Kingston Transit. Walking distance to the nearest transit stops from the Secondary Plan area will be influenced by the local road and active transportation network within the development sites; the layout of pedestrian connections to transit should be a consideration as plans of subdivision are developed.
- All three land use concept options will provide good active transportation connectivity through the Secondary Plan area and connecting to the pathway connections towards the Parrott's Bay conservation area. While much of the active transportation connectivity will be defined by the development patterns and local road networks, it is noted that the direct continuity between the Amherst Drive facility and pathway connection to Parrott's Bay in Options 1 and 3 is preferable to the slight diversion required in Option 2. While pedestrian and cycling connectivity can be accommodate on both signalized and roundabout configurations at the intersections along County Road 6, the signalized operations may provide additional options for the pedestrian and bicycle signal phasing to provide protected movements.
- Township Roads in the study area including Amherst Drive, Speers Boulevard and Kildare Boulevard have been identified as traffic priority corridors in the Infrastructure Master Plan and should be considered for traffic calming measures to manage vehicle speeds as the Amherstview West Secondary Plan Area generates additional traffic in the future. Notably, roundabout control where appropriate would provide an additional measure of traffic calming as well as operational benefits; specific needs for traffic control at the study area intersections and traffic calming measures along study area corridors should be reviewed and refined through future traffic studies supporting subdivision and site plan concepts.
- Regardless of the development option selected, the land use concepts for the secondary plan area should include the provision of a continuous and connected network of pedestrian and cycling facilities through the Secondary Plan area to provide connections to adjacent recreational facilities, potential future transit service and promoting the use of active transportation as an alternative to motorized modes. All collector roads within the new development area will be required be designed with sidewalks along both sides of the road to maximize connectivity and reduce the potential for midblock road crossings by pedestrians; sidewalks along both sides of local roads should be recommended to support this purpose. Loyalist Township should work closely with the



developers and Limestone District School Board to ensure that the design and operation of the Amherstview West Secondary Plan Area can support a shift to sustainable modes of transportation.

It is noted that the scope of the Amherstview West Secondary Plan development was expanded in the summer of 2022 to provide additional consideration for the lands to the west of the development area in the land use Concepts 1-3 assessed in this report. This issue and the potential impacts to traffic generation will be addressed in subsequent work.

APPENDIX

A TRAFFIC ANALYSIS OUTPUT (SYNCHRO)

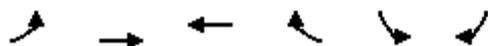


EXISTING CONDITIONS
SYNCHRO ANALYSIS

Timings

38: Bath Rd & Coronation Blvd

2022 Existing AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	504	245	25	86	8
Future Volume (vph)	6	504	245	25	86	8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	2%	0%	3%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	573	278	28	107	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	54.2	54.2	54.2	54.2	12.2	
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.16	
v/c Ratio	0.01	0.43	0.21	0.02	0.37	
Control Delay	5.8	7.6	5.8	2.6	29.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.8	7.6	5.8	2.6	29.3	
LOS	A	A	A	A	C	
Approach Delay		7.6	5.5		29.3	
Approach LOS		A	A		C	
Queue Length 50th (m)	0.3	32.0	12.7	0.0	14.0	
Queue Length 95th (m)	2.0	72.2	30.8	3.0	24.0	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	608	1347	1347	1175	442	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.43	0.21	0.02	0.24	

Intersection Summary

Timings

38: Bath Rd & Coronation Blvd

2022 Existing AM

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 24.9 (33%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 9.3

Intersection LOS: A

Intersection Capacity Utilization 45.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 38: Bath Rd & Coronation Blvd



HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

2022 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	88	15	62	87	22	28	96	94	18	90	19
Future Volume (vph)	5	88	15	62	87	22	28	96	94	18	90	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	98	17	69	97	24	31	107	104	20	100	21
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	104	17	166	24	138	104	120	21				
Volume Left (vph)	6	0	69	0	31	0	20	0				
Volume Right (vph)	0	17	0	24	0	104	0	21				
Hadj (s)	0.08	-0.58	0.33	-0.70	0.17	-0.67	0.11	-0.61				
Departure Headway (s)	5.8	5.1	5.9	4.9	5.7	4.9	5.7	5.0				
Degree Utilization, x	0.17	0.02	0.27	0.03	0.22	0.14	0.19	0.03				
Capacity (veh/h)	582	653	573	685	604	699	591	671				
Control Delay (s)	8.7	7.0	10.0	6.9	9.1	7.4	8.9	7.0				
Approach Delay (s)	8.5		9.6		8.4		8.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.8									
Level of Service			A									
Intersection Capacity Utilization			34.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: County Road 6 & Waldon Pond

2022 Existing AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	57	208	3	5	162
Future Volume (Veh/h)	6	57	208	3	5	162
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	62	226	3	5	176
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	414	228			229	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	414	228			229	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	92			100	
cM capacity (veh/h)	593	812			1339	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	69	229	181			
Volume Left	7	0	5			
Volume Right	62	3	0			
cSH	782	1700	1339			
Volume to Capacity	0.09	0.13	0.00			
Queue Length 95th (m)	2.3	0.0	0.1			
Control Delay (s)	10.0	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	10.0	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			23.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Jim Snow Dr & Taylor Kidd

2022 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	97	8	28	126	2	3	1	58	1	1	0
Future Volume (Veh/h)	2	97	8	28	126	2	3	1	58	1	1	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	3	131	11	38	170	3	4	1	78	1	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			142			390	392	136	468	396	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			142			390	392	136	468	396	172
tC, single (s)	4.1			4.1			7.8	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.1	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			97			99	100	91	100	100	100
cM capacity (veh/h)	1416			1429			457	532	899	453	529	877
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	145	211	83	2								
Volume Left	3	38	4	1								
Volume Right	11	3	78	0								
cSH	1416	1429	852	488								
Volume to Capacity	0.00	0.03	0.10	0.00								
Queue Length 95th (m)	0.1	0.7	2.6	0.1								
Control Delay (s)	0.2	1.6	9.7	12.4								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.2	1.6	9.7	12.4								
Approach LOS			A	B								
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			25.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: County Road 6 & Amherst Dr

2022 Existing AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	91	120	3	75	75
Future Volume (Veh/h)	11	91	120	3	75	75
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	101	133	3	83	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	384	134			136	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	384	134			136	
tC, single (s)	6.5	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.3	
p0 queue free %	98	89			94	
cM capacity (veh/h)	570	912			1418	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	113	136	166			
Volume Left	12	0	83			
Volume Right	101	3	0			
cSH	857	1700	1418			
Volume to Capacity	0.13	0.08	0.06			
Queue Length 95th (m)	3.6	0.0	1.5			
Control Delay (s)	9.8	0.0	4.1			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	4.1			
Approach LOS	A					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

10: Pratt Dr & Amherst Dr

2022 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	84	8	2	128	11	15	7	7	8	6	20
Future Volume (Veh/h)	9	84	8	2	128	11	15	7	7	8	6	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	11	101	10	2	154	13	18	8	8	10	7	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	167			111			320	299	106	304	298	160
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	167			111			320	299	106	304	298	160
tC, single (s)	4.1			4.6			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	99			100			97	99	99	98	99	97
cM capacity (veh/h)	1423			1228			610	611	880	635	612	890
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	122	169	34	41								
Volume Left	11	2	18	10								
Volume Right	10	13	8	24								
cSH	1423	1228	657	757								
Volume to Capacity	0.01	0.00	0.05	0.05								
Queue Length 95th (m)	0.2	0.0	1.3	1.4								
Control Delay (s)	0.7	0.1	10.8	10.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.7	0.1	10.8	10.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			20.3%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

11: County Road 6 & Kildare Ave

2022 Existing AM

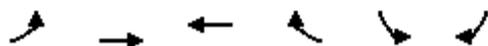


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	75	50	5	21	65
Future Volume (Veh/h)	10	75	50	5	21	65
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	81	54	5	23	70
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	172	56			59	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	56			59	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	92			99	
cM capacity (veh/h)	810	1013			1558	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	92	59	93			
Volume Left	11	0	23			
Volume Right	81	5	0			
cSH	983	1700	1558			
Volume to Capacity	0.09	0.03	0.01			
Queue Length 95th (m)	2.5	0.0	0.4			
Control Delay (s)	9.0	0.0	1.9			
Lane LOS	A		A			
Approach Delay (s)	9.0	0.0	1.9			
Approach LOS	A					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			23.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Bath Rd & County Road 6

2022 Existing AM

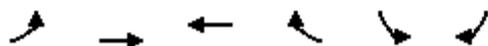


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	162	120	30	50	27
Future Volume (Veh/h)	25	162	120	30	50	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	29	188	140	35	58	31
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	175				386	140
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	175				386	140
tC, single (s)	4.1				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	98				90	97
cM capacity (veh/h)	1389				597	895
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	29	188	140	35	89	
Volume Left	29	0	0	0	58	
Volume Right	0	0	0	35	31	
cSH	1389	1700	1700	1700	675	
Volume to Capacity	0.02	0.11	0.08	0.02	0.13	
Queue Length 95th (m)	0.5	0.0	0.0	0.0	3.6	
Control Delay (s)	7.6	0.0	0.0	0.0	11.1	
Lane LOS	A			B		
Approach Delay (s)	1.0		0.0		11.1	
Approach LOS					B	
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			19.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

26: Bath Rd & Bayview Dr

2022 Existing AM

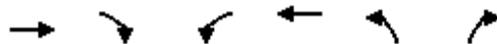


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	168	128	3	8	0
Future Volume (Veh/h)	2	168	128	3	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	181	138	3	9	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	141				324	140
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141				324	140
tC, single (s)	5.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.7	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1010				624	914
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total	183	141	9			
Volume Left	2	0	9			
Volume Right	0	3	0			
cSH	1010	1700	624			
Volume to Capacity	0.00	0.08	0.01			
Queue Length 95th (m)	0.0	0.0	0.4			
Control Delay (s)	0.1	0.0	10.9			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	10.9			
Approach LOS			B			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			20.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

31: Speers Blvd & Amherst Dr

2022 Existing AM

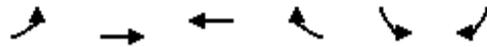


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	89	18	8	59	29	15
Future Volume (Veh/h)	89	18	8	59	29	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	98	20	9	65	32	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			118		191	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			118		191	108
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			99		96	98
cM capacity (veh/h)			1483		798	917
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	118	74	48			
Volume Left	0	9	32			
Volume Right	20	0	16			
cSH	1700	1483	834			
Volume to Capacity	0.07	0.01	0.06			
Queue Length 95th (m)	0.0	0.1	1.5			
Control Delay (s)	0.0	0.9	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.9	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			19.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

35: Bath Rd & Jim Snow Dr

2022 Existing AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↗	↘	↘
Traffic Volume (veh/h)	41	162	121	8	2	27
Future Volume (Veh/h)	41	162	121	8	2	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	44	172	129	9	2	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	138			389	129	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138			389	129	
tC, single (s)	4.2			6.4	6.3	
tC, 2 stage (s)						
tF (s)	2.3			3.5	3.4	
p0 queue free %	97			100	97	
cM capacity (veh/h)	1398			599	897	
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	216	129	9	31		
Volume Left	44	0	0	2		
Volume Right	0	0	9	29		
cSH	1398	1700	1700	869		
Volume to Capacity	0.03	0.08	0.01	0.04		
Queue Length 95th (m)	0.8	0.0	0.0	0.9		
Control Delay (s)	1.8	0.0	0.0	9.3		
Lane LOS	A			A		
Approach Delay (s)	1.8	0.0			9.3	
Approach LOS				A		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			30.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

39: Coronation Blvd & Taylor Kidd Blvd

2022 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	274	2	51	175	8	6	1	118	7	3	3
Future Volume (Veh/h)	5	274	2	51	175	8	6	1	118	7	3	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	6	326	2	61	208	10	7	1	140	8	4	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	218			328			680	679	327	814	675	213
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			328			680	679	327	814	675	213
tC, single (s)	4.5			4.2			7.1	6.5	6.3	7.8	7.2	6.5
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.4	4.1	4.6	3.6
p0 queue free %	99			95			98	100	80	95	99	99
cM capacity (veh/h)	1156			1199			346	355	705	175	287	755
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	334	279	148	16								
Volume Left	6	61	7	8								
Volume Right	2	10	140	4								
cSH	1156	1199	668	247								
Volume to Capacity	0.01	0.05	0.22	0.06								
Queue Length 95th (m)	0.1	1.3	6.7	1.7								
Control Delay (s)	0.2	2.2	11.9	20.6								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.2	2.2	11.9	20.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			45.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

42: Coronation Blvd & Amherst Dr

2022 Existing AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	107	67	43	13	16	88
Future Volume (Veh/h)	107	67	43	13	16	88
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	135	85	54	16	20	111
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	357					
pX, platoon unblocked						
vC, conflicting volume	200	76	131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	200	76	131			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	82	91	96			
cM capacity (veh/h)	749	980	1436			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	220	70	131			
Volume Left	135	54	0			
Volume Right	85	0	111			
cSH	824	1436	1700			
Volume to Capacity	0.27	0.04	0.08			
Queue Length 95th (m)	8.6	0.9	0.0			
Control Delay (s)	11.0	5.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.0	5.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.7			
Intersection Capacity Utilization			26.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Timings

38: Bath Rd & Coronation Blvd

2022 Existing PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Volume (vph)	9	398	605	91	58	17
Future Volume (vph)	9	398	605	91	58	17
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	2%	1%	3%	0%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	410	624	94	78	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	54.6	54.6	54.6	54.6	11.8	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.16	
v/c Ratio	0.02	0.30	0.46	0.08	0.27	
Control Delay	5.8	6.3	7.8	1.7	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.8	6.3	7.8	1.7	23.9	
LOS	A	A	A	A	C	
Approach Delay		6.3	7.0		23.9	
Approach LOS		A	A		C	
Queue Length 50th (m)	0.4	20.1	35.8	0.0	8.2	
Queue Length 95th (m)	2.4	48.7	84.3	5.6	17.3	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	478	1357	1370	1168	456	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.30	0.46	0.08	0.17	

Intersection Summary

Timings

38: Bath Rd & Coronation Blvd

2022 Existing PM

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 23.5 (31%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 7.8

Intersection LOS: A

Intersection Capacity Utilization 51.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 38: Bath Rd & Coronation Blvd



HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

2022 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	97	32	123	108	51	24	123	74	21	123	11
Future Volume (vph)	15	97	32	123	108	51	24	123	74	21	123	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	105	35	134	117	55	26	134	80	23	134	12
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	121	35	251	55	160	80	157	12				
Volume Left (vph)	16	0	134	0	26	0	23	0				
Volume Right (vph)	0	35	0	55	0	80	0	12				
Hadj (s)	0.17	-0.65	0.31	-0.70	0.11	-0.70	0.09	-0.39				
Departure Headway (s)	6.2	5.4	6.2	5.2	6.1	5.3	6.2	5.7				
Degree Utilization, x	0.21	0.05	0.43	0.08	0.27	0.12	0.27	0.02				
Capacity (veh/h)	540	616	560	659	554	629	544	583				
Control Delay (s)	9.7	7.5	12.5	7.4	10.2	7.9	10.3	7.6				
Approach Delay (s)	9.2		11.6		9.4		10.1					
Approach LOS	A		B		A		B					
Intersection Summary												
Delay			10.3									
Level of Service			B									
Intersection Capacity Utilization			44.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: County Road 6 & Waldon Pond

2022 Existing PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	2	180	8	25	253
Future Volume (Veh/h)	8	2	180	8	25	253
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	2	200	9	28	281
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	542	204			209	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	542	204			209	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			98	
cM capacity (veh/h)	491	836			1362	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	11	209	309			
Volume Left	9	0	28			
Volume Right	2	9	0			
cSH	531	1700	1362			
Volume to Capacity	0.02	0.12	0.02			
Queue Length 95th (m)	0.5	0.0	0.5			
Control Delay (s)	11.9	0.0	0.9			
Lane LOS	B		A			
Approach Delay (s)	11.9	0.0	0.9			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			38.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Jim Snow Dr & Taylor Kidd

2022 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	132	2	22	87	1	12	0	29	3	0	2
Future Volume (Veh/h)	0	132	2	22	87	1	12	0	29	3	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	165	2	28	109	1	15	0	36	4	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	110			167			334	332	166	368	332	110
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			167			334	332	166	368	332	110
tC, single (s)	4.1			4.1			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			97	100	96	99	100	100
cM capacity (veh/h)	1493			1423			569	579	865	559	579	950
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	167	138	51	6								
Volume Left	0	28	15	4								
Volume Right	2	1	36	2								
cSH	1493	1423	750	648								
Volume to Capacity	0.00	0.02	0.07	0.01								
Queue Length 95th (m)	0.0	0.5	1.7	0.2								
Control Delay (s)	0.0	1.7	10.1	10.6								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.7	10.1	10.6								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			26.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: County Road 6 & Amherst Dr

2022 Existing PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	90	98	13	136	133
Future Volume (Veh/h)	8	90	98	13	136	133
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	9	103	113	15	156	153
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	586	120			128	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	586	120			128	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	89			89	
cM capacity (veh/h)	426	936			1470	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	112	128	309			
Volume Left	9	0	156			
Volume Right	103	15	0			
cSH	854	1700	1470			
Volume to Capacity	0.13	0.08	0.11			
Queue Length 95th (m)	3.6	0.0	2.8			
Control Delay (s)	9.9	0.0	4.4			
Lane LOS	A		A			
Approach Delay (s)	9.9	0.0	4.4			
Approach LOS	A					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			33.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

10: Pratt Dr & Amherst Dr

2022 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	116	15	10	109	17	14	7	5	12	9	9
Future Volume (Veh/h)	11	116	15	10	109	17	14	7	5	12	9	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	12	130	17	11	122	19	16	8	6	13	10	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	141			147			331	326	138	326	324	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			147			331	326	138	326	324	132
tC, single (s)	4.1			4.2			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	99			99			97	99	99	98	98	99
cM capacity (veh/h)	1455			1387			579	586	864	612	587	923
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	159	152	30	33								
Volume Left	12	11	16	13								
Volume Right	17	19	6	10								
cSH	1455	1387	622	672								
Volume to Capacity	0.01	0.01	0.05	0.05								
Queue Length 95th (m)	0.2	0.2	1.2	1.2								
Control Delay (s)	0.6	0.6	11.1	10.6								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.6	0.6	11.1	10.6								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			20.1%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

11: County Road 6 & Kildare Ave

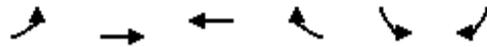
2022 Existing PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	34	79	8	68	73
Future Volume (Veh/h)	6	34	79	8	68	73
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	7	39	90	9	77	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	332	94			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	94			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	96			95	
cM capacity (veh/h)	633	960			1500	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	46	99	160			
Volume Left	7	0	77			
Volume Right	39	9	0			
cSH	890	1700	1500			
Volume to Capacity	0.05	0.06	0.05			
Queue Length 95th (m)	1.3	0.0	1.3			
Control Delay (s)	9.3	0.0	3.8			
Lane LOS	A		A			
Approach Delay (s)	9.3	0.0	3.8			
Approach LOS	A					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			24.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Bath Rd & County Road 6

2022 Existing PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	134	196	62	45	34
Future Volume (Veh/h)	22	134	196	62	45	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	1.00	0.93	0.93
Hourly flow rate (vph)	24	144	211	62	48	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	273				403	211
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273				403	211
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	96
cM capacity (veh/h)	1302				592	829
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	24	144	211	62	85	
Volume Left	24	0	0	0	48	
Volume Right	0	0	0	62	37	
cSH	1302	1700	1700	1700	676	
Volume to Capacity	0.02	0.08	0.12	0.04	0.13	
Queue Length 95th (m)	0.5	0.0	0.0	0.0	3.4	
Control Delay (s)	7.8	0.0	0.0	0.0	11.1	
Lane LOS	A				B	
Approach Delay (s)	1.1		0.0		11.1	
Approach LOS					B	
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			28.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

26: Bath Rd & Bayview Dr

2022 Existing PM

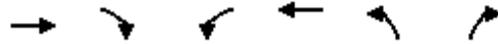


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	1	216	185	13	7	2
Future Volume (Veh/h)	1	216	185	13	7	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	237	203	14	8	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	217				449	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217				449	210
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1365				546	835
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	238	217	10			
Volume Left	1	0	8			
Volume Right	0	14	2			
cSH	1365	1700	586			
Volume to Capacity	0.00	0.13	0.02			
Queue Length 95th (m)	0.0	0.0	0.4			
Control Delay (s)	0.0	0.0	11.2			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.0	11.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			22.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

31: Speers Blvd & Amherst Dr

2022 Existing PM

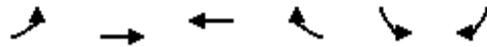


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	←	↘
Traffic Volume (veh/h)	107	42	21	100	19	14
Future Volume (Veh/h)	107	42	21	100	19	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	118	46	23	110	21	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			164		297	141
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			164		297	141
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			98		97	98
cM capacity (veh/h)			1427		687	894
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	164	133	36			
Volume Left	0	23	21			
Volume Right	46	0	15			
cSH	1700	1427	760			
Volume to Capacity	0.10	0.02	0.05			
Queue Length 95th (m)	0.0	0.4	1.2			
Control Delay (s)	0.0	1.4	10.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.4	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			27.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

35: Bath Rd & Jim Snow Dr

2022 Existing PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↶	↶	↶	↶
Traffic Volume (veh/h)	22	161	170	2	7	44
Future Volume (Veh/h)	22	161	170	2	7	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	26	192	202	2	8	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	204				446	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204				446	202
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	94
cM capacity (veh/h)	1350				563	839
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	218	202	2	60		
Volume Left	26	0	0	8		
Volume Right	0	0	2	52		
cSH	1350	1700	1700	787		
Volume to Capacity	0.02	0.12	0.00	0.08		
Queue Length 95th (m)	0.5	0.0	0.0	2.0		
Control Delay (s)	1.1	0.0	0.0	9.9		
Lane LOS	A			A		
Approach Delay (s)	1.1	0.0		9.9		
Approach LOS				A		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			32.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

39: Coronation Blvd & Taylor Kidd Blvd

2022 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	11	203	7	133	305	42	5	3	82	29	9	12
Future Volume (Veh/h)	11	203	7	133	305	42	5	3	82	29	9	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	216	7	141	324	45	5	3	87	31	10	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	369			223			890	894	220	960	876	346
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	369			223			890	894	220	960	876	346
tC, single (s)	5.0			4.1			7.1	7.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	3.0			2.2			3.5	4.9	3.3	3.5	4.0	3.3
p0 queue free %	99			90			98	98	89	84	96	98
cM capacity (veh/h)	830			1358			230	174	825	190	254	697
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	235	510	95	54								
Volume Left	12	141	5	31								
Volume Right	7	45	87	13								
cSH	830	1358	658	244								
Volume to Capacity	0.01	0.10	0.14	0.22								
Queue Length 95th (m)	0.4	2.8	4.0	6.6								
Control Delay (s)	0.6	3.0	11.4	23.9								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.6	3.0	11.4	23.9								
Approach LOS			B	C								
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			57.2%	ICU Level of Service		B						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

42: Coronation Blvd & Amherst Dr

2022 Existing PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	75	70	20	27	98
Future Volume (Veh/h)	121	75	70	20	27	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	157	97	91	26	35	127
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	357					
pX, platoon unblocked						
vC, conflicting volume	306	98	162			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	306	98	162			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	90	94			
cM capacity (veh/h)	642	960	1423			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	254	117	162			
Volume Left	157	91	0			
Volume Right	97	0	127			
cSH	735	1423	1700			
Volume to Capacity	0.35	0.06	0.10			
Queue Length 95th (m)	12.4	1.6	0.0			
Control Delay (s)	12.5	6.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.5	6.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	7.3					
Intersection Capacity Utilization	33.7%			ICU Level of Service	A	
Analysis Period (min)	15					



SYNCHRO ANALYSIS – FUTURE BACKGROUND
LOW GROWTH SCENARIO

Timings
38: Bath Rd & Coronation Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	731	406	40	123	10
Future Volume (vph)	7	731	406	40	123	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	33%	2%	2%	0%	3%	13%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	831	461	45	151	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	48.8	48.8	48.8	48.8	13.0	
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.17	
v/c Ratio	0.02	0.69	0.38	0.04	0.50	
Control Delay	6.3	13.1	7.9	2.4	32.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.3	13.1	7.9	2.4	32.0	
LOS	A	B	A	A	C	
Approach Delay		13.1	7.4		32.0	
Approach LOS		B	A		C	
Queue Length 50th (m)	0.4	64.4	26.3	0.0	20.2	
Queue Length 95th (m)	2.2	131.7	54.3	3.7	32.7	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	442	1211	1211	1066	443	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.69	0.38	0.04	0.34	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 24.9 (33%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69

Timings
 38: Bath Rd & Coronation Blvd

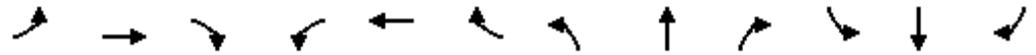
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Bath Rd & Coronation Blvd



HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

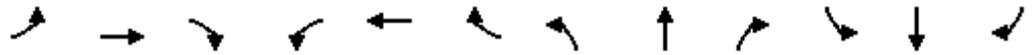
Amherstview Secondary Plan
 2046 Background AM - LGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Right Turn Channelized													
Traffic Volume (veh/h)	8	133	35	85	132	27	64	198	165	22	161	29	
Future Volume (veh/h)	8	133	35	85	132	27	64	198	165	22	161	29	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	9	148	39	94	147	30	71	220	183	24	179	32	
Approach Volume (veh/h)	196		271		474		235						
Crossing Volume (veh/h)	297		300		181		312						
High Capacity (veh/h)	1097		1094		1202		1084						
High v/c (veh/h)	0.18		0.25		0.39		0.22						
Low Capacity (veh/h)	900		898		995		889						
Low v/c (veh/h)	0.22		0.30		0.48		0.26						
Intersection Summary													
Maximum v/c High			0.39										
Maximum v/c Low			0.48										
Intersection Capacity Utilization			56.1%		ICU Level of Service						B		

HCM Unsignalized Intersection Capacity Analysis
2: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
2046 Background AM - LGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	2	120	10	35	156	2	4	1	72	1	1	0
Future Volume (Veh/h)	2	120	10	35	156	2	4	1	72	1	1	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	3	162	14	47	211	3	5	1	97	1	1	0
Pedestrians		2			2			2			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	216			178			486	487	173	583	492	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216			178			486	487	173	583	492	216
tC, single (s)	4.1			4.1			7.8	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.1	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			97			99	100	89	100	100	100
cM capacity (veh/h)	1364			1384			386	465	855	365	461	826
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	179	261	103	2								
Volume Left	3	47	5	1								
Volume Right	14	3	97	0								
cSH	1364	1384	801	408								
Volume to Capacity	0.00	0.03	0.13	0.00								
Queue Length 95th (m)	0.1	0.8	3.5	0.1								
Control Delay (s)	0.1	1.6	10.2	13.9								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	1.6	10.2	13.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			32.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
6: County Road 6 & Waldon Pond Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	141	345	16	33	247
Future Volume (Veh/h)	16	141	345	16	33	247
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	157	383	18	37	274
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	740	392			401	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	740	392			401	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	76			97	
cM capacity (veh/h)	375	661			1169	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	175	401	37	274		
Volume Left	18	0	37	0		
Volume Right	157	18	0	0		
cSH	613	1700	1169	1700		
Volume to Capacity	0.29	0.24	0.03	0.16		
Queue Length 95th (m)	9.4	0.0	0.8	0.0		
Control Delay (s)	13.2	0.0	8.2	0.0		
Lane LOS	B		A			
Approach Delay (s)	13.2	0.0	1.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			42.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 9: County Road 6 & Amherst Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	195	167	4	135	105
Future Volume (Veh/h)	16	195	167	4	135	105
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	217	186	4	150	117
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	605	188			190	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	605	188			190	
tC, single (s)	6.5	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.3	
p0 queue free %	95	75			89	
cM capacity (veh/h)	400	851			1354	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	235	190	150	117		
Volume Left	18	0	150	0		
Volume Right	217	4	0	0		
cSH	784	1700	1354	1700		
Volume to Capacity	0.30	0.11	0.11	0.07		
Queue Length 95th (m)	10.1	0.0	3.0	0.0		
Control Delay (s)	11.6	0.0	8.0	0.0		
Lane LOS	B		A			
Approach Delay (s)	11.6	0.0	4.5			
Approach LOS	B					
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			39.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

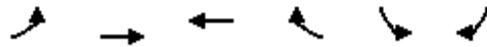
Amherstview Secondary Plan
 2046 Background AM - LGS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	130	16	2	186	27	19	12	9	37	7	81
Future Volume (Veh/h)	21	130	16	2	186	27	19	12	9	37	7	81
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	25	157	19	2	224	33	23	14	11	45	8	98
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	257			176			563	478	166	479	470	240
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257			176			563	478	166	479	470	240
tC, single (s)	4.1			4.6			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			94	97	99	91	98	88
cM capacity (veh/h)	1320			1157			375	480	812	475	484	803
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	201	259	48	151								
Volume Left	25	2	23	45								
Volume Right	19	33	11	98								
cSH	1320	1157	462	647								
Volume to Capacity	0.02	0.00	0.10	0.23								
Queue Length 95th (m)	0.5	0.0	2.8	7.2								
Control Delay (s)	1.1	0.1	13.7	12.2								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.1	0.1	13.7	12.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay			4.2									
Intersection Capacity Utilization			37.1%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 11: County Road 6 & Kildare Ave

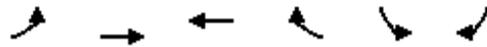
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	103	70	6	26	95
Future Volume (Veh/h)	26	103	70	6	26	95
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	28	111	75	6	28	102
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	236	78			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	78			81	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	96	89			98	
cM capacity (veh/h)	742	985			1462	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	139	81	130			
Volume Left	28	0	28			
Volume Right	111	6	0			
cSH	924	1700	1462			
Volume to Capacity	0.15	0.05	0.02			
Queue Length 95th (m)	4.2	0.0	0.5			
Control Delay (s)	9.6	0.0	1.7			
Lane LOS	A		A			
Approach Delay (s)	9.6	0.0	1.7			
Approach LOS	A					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			27.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Bath Rd & County Road 6



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	232	223	45	80	43
Future Volume (Veh/h)	31	232	223	45	80	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	36	270	259	52	93	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	311				601	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311				601	259
tC, single (s)	4.1				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	97				79	93
cM capacity (veh/h)	1238				443	768
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	36	270	259	52	143	
Volume Left	36	0	0	0	93	
Volume Right	0	0	0	52	50	
cSH	1238	1700	1700	1700	520	
Volume to Capacity	0.03	0.16	0.15	0.03	0.27	
Queue Length 95th (m)	0.7	0.0	0.0	0.0	8.9	
Control Delay (s)	8.0	0.0	0.0	0.0	14.5	
Lane LOS	A				B	
Approach Delay (s)	0.9		0.0		14.5	
Approach LOS					B	
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			32.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Bath Rd & Bayview Dr



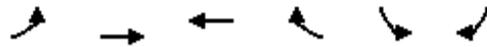
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘↙	
Traffic Volume (veh/h)	2	240	244	4	10	0
Future Volume (Veh/h)	2	240	244	4	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	258	262	4	11	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	266				526	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	266				526	264
tC, single (s)	5.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.7	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	891				473	780
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	260	266	11			
Volume Left	2	0	11			
Volume Right	0	4	0			
cSH	891	1700	473			
Volume to Capacity	0.00	0.16	0.02			
Queue Length 95th (m)	0.1	0.0	0.6			
Control Delay (s)	0.1	0.0	12.8			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	12.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			24.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Background AM - LGS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	137	32	10	114	48	36	63	19	14	17	8
Future Volume (vph)	7	137	32	10	114	48	36	63	19	14	17	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	151	35	11	125	53	40	69	21	15	19	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	194	189	130	43								
Volume Left (vph)	8	11	40	15								
Volume Right (vph)	35	53	21	9								
Hadj (s)	-0.01	0.00	0.00	-0.06								
Departure Headway (s)	4.6	4.6	4.9	4.9								
Degree Utilization, x	0.25	0.24	0.18	0.06								
Capacity (veh/h)	755	746	687	658								
Control Delay (s)	9.0	9.0	8.9	8.2								
Approach Delay (s)	9.0	9.0	8.9	8.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.9									
Level of Service			A									
Intersection Capacity Utilization			27.6%	ICU Level of Service	A							
Analysis Period (min)			15									

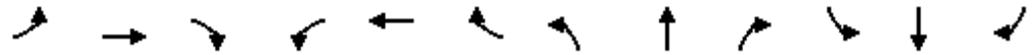
HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑	↗	↘	
Traffic Volume (veh/h)	56	232	233	11	3	35
Future Volume (Veh/h)	56	232	233	11	3	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	60	247	248	12	3	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	260				615	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	260				615	248
tC, single (s)	4.2				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	95				99	95
cM capacity (veh/h)	1259				436	769
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	307	248	12	40		
Volume Left	60	0	0	3		
Volume Right	0	0	12	37		
cSH	1259	1700	1700	727		
Volume to Capacity	0.05	0.15	0.01	0.05		
Queue Length 95th (m)	1.2	0.0	0.0	1.4		
Control Delay (s)	1.9	0.0	0.0	10.2		
Lane LOS	A			B		
Approach Delay (s)	1.9	0.0		10.2		
Approach LOS				B		
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			40.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Background AM - LGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	6	411	2	82	249	10	7	1	171	9	4	4
Future Volume (veh/h)	6	411	2	82	249	10	7	1	171	9	4	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	489	2	98	296	12	8	1	204	11	5	5
Approach Volume (veh/h)	498		406				213			21		
Crossing Volume (veh/h)	114		16				507			402		
High Capacity (veh/h)	1267		1367				928			1009		
High v/c (veh/h)	0.39		0.30				0.23			0.02		
Low Capacity (veh/h)	1054		1146				750			822		
Low v/c (veh/h)	0.47		0.35				0.28			0.03		
Intersection Summary												
Maximum v/c High			0.39									
Maximum v/c Low			0.47									
Intersection Capacity Utilization			61.3%				ICU Level of Service			B		

HCM Unsignalized Intersection Capacity Analysis
42: Coronation Blvd & Amherst Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	158	99	63	16	20	128
Future Volume (Veh/h)	158	99	63	16	20	128
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	200	125	80	20	25	162
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	357					
pX, platoon unblocked						
vC, conflicting volume	286	106	187			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	286	106	187			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	69	87	94			
cM capacity (veh/h)	653	943	1369			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	325	100	187			
Volume Left	200	80	0			
Volume Right	125	0	162			
cSH	741	1369	1700			
Volume to Capacity	0.44	0.06	0.11			
Queue Length 95th (m)	18.0	1.5	0.0			
Control Delay (s)	13.6	6.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.6	6.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			8.3			
Intersection Capacity Utilization			38.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Timings
38: Bath Rd & Coronation Blvd

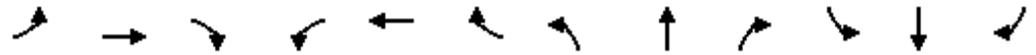


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	626	868	155	125	21
Future Volume (vph)	11	626	868	155	125	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	11%	2%	1%	3%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	645	895	160	151	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	48.9	48.9	48.9	48.9	12.9	
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.17	
v/c Ratio	0.05	0.53	0.73	0.15	0.48	
Control Delay	6.8	9.7	14.6	1.6	30.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.8	9.7	14.6	1.6	30.5	
LOS	A	A	B	A	C	
Approach Delay		9.7	12.6		30.5	
Approach LOS		A	B		C	
Queue Length 50th (m)	0.5	41.5	71.9	0.0	19.4	
Queue Length 95th (m)	2.9	89.4	#181.7	7.2	32.6	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	228	1215	1227	1078	456	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.53	0.73	0.15	0.33	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 23.5 (31%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73

HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	23	149	70	193	147	63	42	189	103	26	255	15
Future Volume (veh/h)	23	149	70	193	147	63	42	189	103	26	255	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	162	76	210	160	68	46	205	112	28	277	16
Approach Volume (veh/h)		263			438			363			321	
Crossing Volume (veh/h)		515			276			215			416	
High Capacity (veh/h)		922			1115			1170			998	
High v/c (veh/h)		0.29			0.39			0.31			0.32	
Low Capacity (veh/h)		745			917			967			812	
Low v/c (veh/h)		0.35			0.48			0.38			0.40	
Intersection Summary												
Maximum v/c High					0.39							
Maximum v/c Low					0.48							
Intersection Capacity Utilization			68.0%			ICU Level of Service					C	

HCM Unsignalized Intersection Capacity Analysis
2: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
2046 Background PM - LGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	164	2	27	108	1	15	0	36	4	0	2
Future Volume (Veh/h)	0	164	2	27	108	1	15	0	36	4	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	205	2	34	135	1	19	0	45	5	0	2
Pedestrians		2			2			2			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	138			209			416	414	210	458	414	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	138			209			416	414	210	458	414	140
tC, single (s)	4.1			4.1			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			96	100	94	99	100	100
cM capacity (veh/h)	1456			1372			495	517	815	476	516	911
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	207	170	64	7								
Volume Left	0	34	19	5								
Volume Right	2	1	45	2								
cSH	1456	1372	684	551								
Volume to Capacity	0.00	0.02	0.09	0.01								
Queue Length 95th (m)	0.0	0.6	2.5	0.3								
Control Delay (s)	0.0	1.7	10.8	11.6								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.7	10.8	11.6								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			29.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
6: County Road 6 & Waldon Pond Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	59	232	36	112	405
Future Volume (Veh/h)	12	59	232	36	112	405
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	66	258	40	124	450
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	976	278			298	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	976	278			298	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	91			90	
cM capacity (veh/h)	254	766			1275	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	79	298	124	450		
Volume Left	13	0	124	0		
Volume Right	66	40	0	0		
cSH	575	1700	1275	1700		
Volume to Capacity	0.14	0.18	0.10	0.26		
Queue Length 95th (m)	3.8	0.0	2.6	0.0		
Control Delay (s)	12.3	0.0	8.1	0.0		
Lane LOS	B		A			
Approach Delay (s)	12.3	0.0	1.8			
Approach LOS	B					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			34.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 9: County Road 6 & Amherst Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	145	124	30	262	174
Future Volume (Veh/h)	16	145	124	30	262	174
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	18	167	143	34	301	200
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	962	160			177	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	962	160			177	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	81			79	
cM capacity (veh/h)	225	890			1411	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	185	177	301	200		
Volume Left	18	0	301	0		
Volume Right	167	34	0	0		
cSH	692	1700	1411	1700		
Volume to Capacity	0.27	0.10	0.21	0.12		
Queue Length 95th (m)	8.6	0.0	6.5	0.0		
Control Delay (s)	12.1	0.0	8.2	0.0		
Lane LOS	B		A			
Approach Delay (s)	12.1	0.0	5.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization			42.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

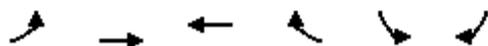
Amherstview Secondary Plan
 2046 Background PM - LGS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	200	19	12	144	70	17	25	6	30	15	41
Future Volume (Veh/h)	67	200	19	12	144	70	17	25	6	30	15	41
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	75	225	21	13	162	79	19	28	7	34	17	46
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	241			246			668	652	236	634	624	202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	241			246			668	652	236	634	624	202
tC, single (s)	4.1			4.2			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	94			99			94	92	99	90	96	95
cM capacity (veh/h)	1337			1275			309	364	761	350	378	844
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	321	254	54	97								
Volume Left	75	13	19	34								
Volume Right	21	79	7	46								
cSH	1337	1275	366	493								
Volume to Capacity	0.06	0.01	0.15	0.20								
Queue Length 95th (m)	1.4	0.2	4.1	5.8								
Control Delay (s)	2.2	0.5	16.5	14.1								
Lane LOS	A	A	C	B								
Approach Delay (s)	2.2	0.5	16.5	14.1								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			44.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 11: County Road 6 & Kildare Ave

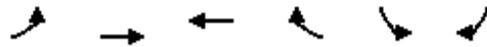
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	42	115	10	84	106
Future Volume (Veh/h)	7	42	115	10	84	106
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	8	48	131	11	95	120
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	446	136			142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	446	136			142	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	95			93	
cM capacity (veh/h)	536	909			1447	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	56	142	215			
Volume Left	8	0	95			
Volume Right	48	11	0			
cSH	827	1700	1447			
Volume to Capacity	0.07	0.08	0.07			
Queue Length 95th (m)	1.7	0.0	1.7			
Control Delay (s)	9.7	0.0	3.7			
Lane LOS	A		A			
Approach Delay (s)	9.7	0.0	3.7			
Approach LOS	A					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			30.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Bath Rd & County Road 6



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	242	280	90	69	45
Future Volume (Veh/h)	31	242	280	90	69	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	33	260	301	97	74	48
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	398				627	301
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398				627	301
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				83	94
cM capacity (veh/h)	1172				435	739
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	33	260	301	97	122	
Volume Left	33	0	0	0	74	
Volume Right	0	0	0	97	48	
cSH	1172	1700	1700	1700	519	
Volume to Capacity	0.03	0.15	0.18	0.06	0.24	
Queue Length 95th (m)	0.7	0.0	0.0	0.0	7.2	
Control Delay (s)	8.2	0.0	0.0	0.0	14.1	
Lane LOS	A				B	
Approach Delay (s)	0.9		0.0		14.1	
Approach LOS					B	
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			34.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



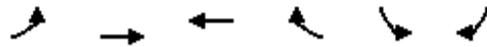
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (veh/h)	1	361	267	16	9	2
Future Volume (Veh/h)	1	361	267	16	9	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	397	293	18	10	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	311				701	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311				701	302
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1261				387	742
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	398	311	12			
Volume Left	1	0	10			
Volume Right	0	18	2			
cSH	1261	1700	421			
Volume to Capacity	0.00	0.18	0.03			
Queue Length 95th (m)	0.0	0.0	0.7			
Control Delay (s)	0.0	0.0	13.8			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.0	13.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			29.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Background PM - LGS

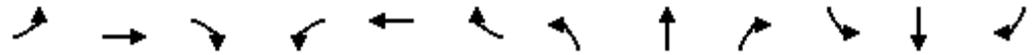
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	143	76	26	152	69	35	85	17	99	124	46
Future Volume (vph)	12	143	76	26	152	69	35	85	17	99	124	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	13	157	84	29	167	76	38	93	19	109	136	51
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	254	272	150	296								
Volume Left (vph)	13	29	38	109								
Volume Right (vph)	84	76	19	51								
Hadj (s)	-0.11	0.00	0.00	0.04								
Departure Headway (s)	5.6	5.7	6.0	5.7								
Degree Utilization, x	0.40	0.43	0.25	0.47								
Capacity (veh/h)	584	581	521	580								
Control Delay (s)	12.3	12.9	11.0	13.8								
Approach Delay (s)	12.3	12.9	11.0	13.8								
Approach LOS	B	B	B	B								
Intersection Summary												
Delay			12.7									
Level of Service			B									
Intersection Capacity Utilization			49.7%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↗	↘	↘
Traffic Volume (veh/h)	28	283	246	3	10	60
Future Volume (Veh/h)	28	283	246	3	10	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	33	337	293	4	12	71
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	297				696	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297				696	293
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	90
cM capacity (veh/h)	1247				400	746
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	370	293	4	83		
Volume Left	33	0	0	12		
Volume Right	0	0	4	71		
cSH	1247	1700	1700	663		
Volume to Capacity	0.03	0.17	0.00	0.13		
Queue Length 95th (m)	0.7	0.0	0.0	3.4		
Control Delay (s)	0.9	0.0	0.0	11.2		
Lane LOS	A			B		
Approach Delay (s)	0.9	0.0		11.2		
Approach LOS				B		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			43.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	14	292	9	224	431	52	6	4	188	36	11	15
Future Volume (veh/h)	14	292	9	224	431	52	6	4	188	36	11	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	311	10	238	459	55	6	4	200	38	12	16
Approach Volume (veh/h)	336				752		210				66	
Crossing Volume (veh/h)	288				25		364				703	
High Capacity (veh/h)	1105				1358		1040				793	
High v/c (veh/h)	0.30				0.55		0.20				0.08	
Low Capacity (veh/h)	908				1137		850				630	
Low v/c (veh/h)	0.37				0.66		0.25				0.10	
Intersection Summary												
Maximum v/c High					0.55							
Maximum v/c Low					0.66							
Intersection Capacity Utilization			83.9%		ICU Level of Service						E	

HCM Unsignalized Intersection Capacity Analysis
42: Coronation Blvd & Amherst Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	237	146	129	25	33	180
Future Volume (Veh/h)	237	146	129	25	33	180
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	300	185	163	32	42	228
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	357					
pX, platoon unblocked						
vC, conflicting volume	514	156	270			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	514	156	270			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	34	79	87			
cM capacity (veh/h)	455	892	1299			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	485	195	270			
Volume Left	300	163	0			
Volume Right	185	0	228			
cSH	560	1299	1700			
Volume to Capacity	0.87	0.13	0.16			
Queue Length 95th (m)	76.8	3.4	0.0			
Control Delay (s)	39.8	7.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	39.8	7.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			21.7			
Intersection Capacity Utilization			53.4%	ICU Level of Service	A	
Analysis Period (min)			15			



SYNCHRO ANALYSIS – ULTIMATE CONDITIONS
LOW GROWTH SCENARIO
LAND USE CONCEPT 1

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	0	60	16	0	141	34	510	16	33	321	37
Future Volume (vph)	82	0	60	16	0	141	34	510	16	33	321	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	6%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	67	0	18	157	0	38	585	0	37	398	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0		37.0	37.0	
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%		61.7%	61.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	10.5	10.5		10.5	10.5		43.2	43.2		43.2	43.2	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
v/c Ratio	0.43	0.10		0.08	0.31		0.05	0.44		0.07	0.31	
Control Delay	26.8	0.3		18.4	1.6		5.0	7.7		5.4	5.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.8	0.3		18.4	1.6		5.0	7.7		5.4	5.6	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		15.6			3.4			7.5			5.6	
Approach LOS		B			A			A			A	
Queue Length 50th (m)	9.7	0.0		1.8	0.0		1.9	35.3		1.1	14.0	
Queue Length 95th (m)	18.3	0.0		5.5	0.7		m5.0	74.0		5.7	40.0	
Internal Link Dist (m)		102.5			98.8			385.7			417.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	371	819		417	689		712	1337		544	1284	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.08		0.04	0.23		0.05	0.44		0.07	0.31	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44

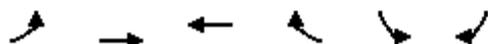
Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 52.9%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



Timings
8: Bath Rd & Speers Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶	↷	↶	↷
Traffic Volume (vph)	50	464	329	0	30	60
Future Volume (vph)	50	464	329	0	30	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	464	329	0	90	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	34.4	34.4	34.4	34.4	29.5	
Total Split (s)	40.5	40.5	40.5	40.5	29.5	
Total Split (%)	57.9%	57.9%	57.9%	57.9%	42.1%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.1	
All-Red Time (s)	1.4	1.4	1.4	1.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	49.1	49.1	49.1		12.6	
Actuated g/C Ratio	0.70	0.70	0.70		0.18	
v/c Ratio	0.07	0.36	0.25		0.26	
Control Delay	4.3	5.1	7.0		11.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	4.3	5.1	7.0		11.9	
LOS	A	A	A		B	
Approach Delay		5.0	7.0		11.9	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.2	13.0	15.0		3.7	
Queue Length 95th (m)	4.9	59.7	44.1		12.0	
Internal Link Dist (m)		411.7	317.3		129.8	
Turn Bay Length (m)	140.0					
Base Capacity (vph)	734	1306	1306		588	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.07	0.36	0.25		0.15	

Intersection Summary

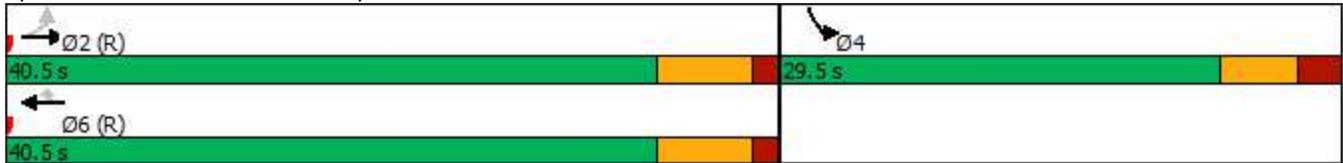
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 29 (41%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 6.4
Intersection LOS: A

Timings
8: Bath Rd & Speers Blvd

Intersection Capacity Utilization 58.4%
Analysis Period (min) 15

ICU Level of Service B

Splits and Phases: 8: Bath Rd & Speers Blvd



Timings
9: County Road 6 & Amherst Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	49	60	16	34	195	34	283	4	135	202	37
Future Volume (vph)	82	49	60	16	34	195	34	283	4	135	202	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	9%	0%	3%	0%	2%	0%	7%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	121	0	18	255	0	38	318	0	150	265	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	9.5	32.0		22.5	22.5		28.0	28.0		28.0	28.0	
Total Split (%)	15.8%	53.3%		37.5%	37.5%		46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	16.7	16.7		9.1	9.1		34.1	34.1		34.1	34.1	
Actuated g/C Ratio	0.28	0.28		0.15	0.15		0.57	0.57		0.57	0.57	
v/c Ratio	0.35	0.23		0.10	0.59		0.06	0.30		0.27	0.26	
Control Delay	17.2	7.7		19.9	11.1		6.3	7.1		7.2	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.2	7.7		19.9	11.1		6.3	7.1		7.2	5.5	
LOS	B	A		B	B		A	A		A	A	
Approach Delay		11.8			11.7			7.0			6.1	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	8.0	4.7		1.9	4.1		1.2	10.9		4.7	7.3	
Queue Length 95th (m)	12.7	11.0		5.5	17.8		6.4	43.5		9.9	13.6	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	259	834		355	636		642	1055		554	1035	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.15		0.05	0.40		0.06	0.30		0.27	0.26	

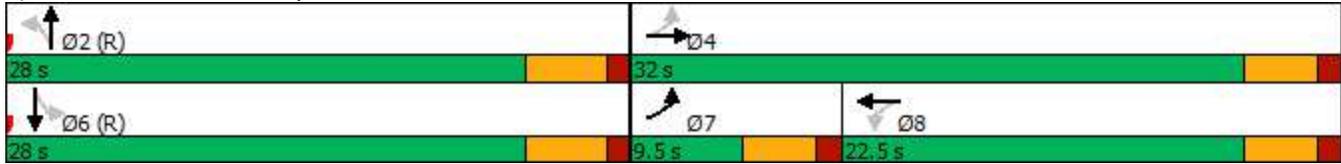
Intersection Summary

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: 0.59

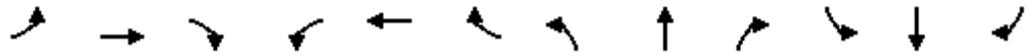
Timings
 9: County Road 6 & Amherst Dr

Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: County Road 6 & Amherst Dr



Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	16	60	26	29	103	34	139	6	26	214	37
Future Volume (vph)	82	16	60	26	29	103	34	139	6	26	214	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	0%	11%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	82	0	28	142	0	37	155	0	28	270	0
Turn Type	Perm	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases		4!		8!	8			2				6
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0		5.0
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7		22.7
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0		35.0
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%		58.3%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7		3.7
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7		4.7
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max		C-Max
Act Effct Green (s)	10.4	10.4		10.4	10.4		43.4	43.4		43.4		43.4
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.72	0.72		0.72		0.72
v/c Ratio	0.40	0.24		0.09	0.37		0.05	0.12		0.03		0.20
Control Delay	25.8	9.2		18.8	9.5		5.0	4.7		4.0		3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	25.8	9.2		18.8	9.5		5.0	4.7		4.0		3.5
LOS	C	A		B	A		A	A		A		A
Approach Delay		17.8			11.0			4.7				3.6
Approach LOS		B			B			A				A
Queue Length 50th (m)	9.4	1.7		2.8	3.1		1.1	4.6		0.6		5.3
Queue Length 95th (m)	17.6	9.6		7.2	13.6		5.4	15.5		3.3		16.1
Internal Link Dist (m)		246.5			224.0			540.0				282.6
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	432	614		616	641		814	1316		815		1348
Starvation Cap Reductn	0	0		0	0		0	0		0		0
Spillback Cap Reductn	0	0		0	0		0	0		0		0
Storage Cap Reductn	0	0		0	0		0	0		0		0
Reduced v/c Ratio	0.20	0.13		0.05	0.22		0.05	0.12		0.03		0.20

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: 0.40

Timings
 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 45.4%	ICU Level of Service A
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	232	223	85	166	136
Future Volume (vph)	94	232	223	85	166	136
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	0%	3%	3%	6%	7%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	270	259	99	193	158
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	7	7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	26.9	26.9	33.9	33.9	22.7	22.7
Total Split (s)	36.0	36.0	36.0	36.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	47.4	47.4	47.4	47.4	13.2	13.2
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.19	0.19
v/c Ratio	0.15	0.21	0.21	0.09	0.60	0.38
Control Delay	5.6	5.4	7.6	3.8	33.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	5.4	7.6	3.8	33.3	7.1
LOS	A	A	A	A	C	A
Approach Delay		5.5	6.5		21.5	
Approach LOS		A	A		C	
Queue Length 50th (m)	4.5	11.7	10.6	0.0	24.5	0.0
Queue Length 95th (m)	11.7	24.2	38.0	11.3	38.2	11.5
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	740	1285	1248	1093	712	723
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.21	0.09	0.27	0.22

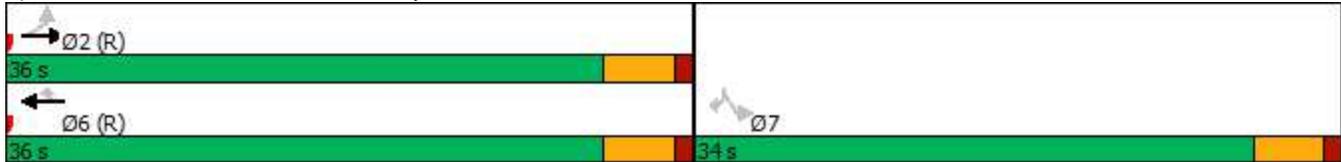
Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 29 (41%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60

Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
38: Bath Rd & Coronation Blvd



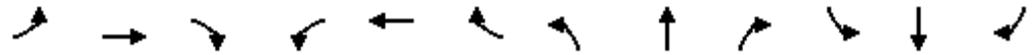
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	817	446	52	142	10
Future Volume (vph)	7	817	446	52	142	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	33%	2%	2%	0%	3%	13%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	928	507	59	172	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	48.2	48.2	48.2	48.2	13.6	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.18	
v/c Ratio	0.02	0.78	0.42	0.06	0.54	
Control Delay	6.4	16.9	8.6	2.2	33.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.4	16.9	8.6	2.2	33.0	
LOS	A	B	A	A	C	
Approach Delay		16.8	8.0		33.0	
Approach LOS		B	A		C	
Queue Length 50th (m)	0.4	83.2	31.3	0.0	23.2	
Queue Length 95th (m)	2.2	#186.5	61.3	4.3	36.8	
Internal Link Dist (m)		189.7	190.1		331.8	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	404	1197	1197	1058	442	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.78	0.42	0.06	0.39	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78

HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate AM LGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	8	133	35	154	132	27	64	275	334	22	203	29
Future Volume (veh/h)	8	133	35	154	132	27	64	275	334	22	203	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	148	39	171	147	30	71	306	371	24	226	32
Approach Volume (veh/h)	196		348				748			282		
Crossing Volume (veh/h)	421				386			181		389		
High Capacity (veh/h)	994				1022			1202		1020		
High v/c (veh/h)	0.20				0.34			0.62		0.28		
Low Capacity (veh/h)	808				834			995		831		
Low v/c (veh/h)	0.24				0.42			0.75		0.34		
Intersection Summary												
Maximum v/c High	0.62											
Maximum v/c Low	0.75											
Intersection Capacity Utilization	66.2%				ICU Level of Service				C			

HCM Unsignalized Intersection Capacity Analysis

10: Pratt Dr & Amherst Dr

Amherstview Secondary Plan
2046 Ultimate AM LGS_Option 1 Concept

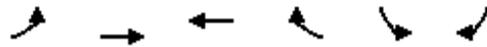
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	179	16	2	220	27	19	12	9	37	7	81
Future Volume (Veh/h)	21	179	16	2	220	27	19	12	9	37	7	81
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	25	216	19	2	265	33	23	14	11	45	8	98
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246										
pX, platoon unblocked												
vC, conflicting volume	298			235			663	578	226	579	570	282
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	298			235			663	578	226	579	570	282
tC, single (s)	4.1			4.6			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			93	97	99	89	98	87
cM capacity (veh/h)	1275			1096			319	421	751	406	425	762
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	260	300	48	151								
Volume Left	25	2	23	45								
Volume Right	19	33	11	98								
cSH	1275	1096	400	584								
Volume to Capacity	0.02	0.00	0.12	0.26								
Queue Length 95th (m)	0.5	0.0	3.2	8.2								
Control Delay (s)	0.9	0.1	15.2	13.3								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.9	0.1	15.2	13.3								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			39.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 12: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
 2046 Ultimate AM LGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	334	10	37	442	2	4	1	78	1	1	0
Future Volume (Veh/h)	2	334	10	37	442	2	4	1	78	1	1	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	3	451	14	50	597	3	5	1	105	1	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	600			465			1163	1164	458	1268	1170	598
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	600			465			1163	1164	458	1268	1170	598
tC, single (s)	4.1			4.1			7.8	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.1	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			95			96	99	82	99	99	100
cM capacity (veh/h)	987			1086			123	187	593	116	185	506
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	468	650	111	2								
Volume Left	3	50	5	1								
Volume Right	14	3	105	0								
cSH	987	1086	498	142								
Volume to Capacity	0.00	0.05	0.22	0.01								
Queue Length 95th (m)	0.1	1.2	6.8	0.3								
Control Delay (s)	0.1	1.2	14.3	30.6								
Lane LOS	A	A	B	D								
Approach Delay (s)	0.1	1.2	14.3	30.6								
Approach LOS			B	D								
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			58.8%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



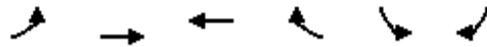
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (veh/h)	2	303	336	4	10	0
Future Volume (Veh/h)	2	303	336	4	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	326	361	4	11	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	365				693	363
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	365				693	363
tC, single (s)	5.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.7	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	807				375	686
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	328	365	11			
Volume Left	2	0	11			
Volume Right	0	4	0			
cSH	807	1700	375			
Volume to Capacity	0.00	0.21	0.03			
Queue Length 95th (m)	0.1	0.0	0.7			
Control Delay (s)	0.1	0.0	14.9			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	14.9			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			27.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate AM LGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	186	32	10	148	48	36	63	19	14	17	8
Future Volume (vph)	7	186	32	10	148	48	36	63	19	14	17	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	204	35	11	163	53	40	69	21	15	19	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	247	227	130	43								
Volume Left (vph)	8	11	40	15								
Volume Right (vph)	35	53	21	9								
Hadj (s)	0.02	0.04	0.00	-0.06								
Departure Headway (s)	4.7	4.7	5.1	5.2								
Degree Utilization, x	0.32	0.30	0.18	0.06								
Capacity (veh/h)	731	727	646	615								
Control Delay (s)	9.8	9.7	9.2	8.5								
Approach Delay (s)	9.8	9.7	9.2	8.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.6									
Level of Service			A									
Intersection Capacity Utilization			29.8%	ICU Level of Service	A							
Analysis Period (min)			15									

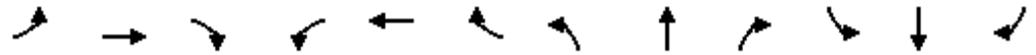
HCM Unsignalized Intersection Capacity Analysis
35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↗	↘	↘
Traffic Volume (veh/h)	56	295	325	11	3	35
Future Volume (Veh/h)	56	295	325	11	3	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	60	314	346	12	3	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	358				780	346
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	358				780	346
tC, single (s)	4.2				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	95				99	95
cM capacity (veh/h)	1158				348	677
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	374	346	12	40		
Volume Left	60	0	0	3		
Volume Right	0	0	12	37		
cSH	1158	1700	1700	632		
Volume to Capacity	0.05	0.20	0.01	0.06		
Queue Length 95th (m)	1.3	0.0	0.0	1.6		
Control Delay (s)	1.8	0.0	0.0	11.1		
Lane LOS	A			B		
Approach Delay (s)	1.8	0.0		11.1		
Approach LOS				B		
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			49.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate AM LGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	6	581	2	105	318	10	7	1	201	9	4	4
Future Volume (veh/h)	6	581	2	105	318	10	7	1	201	9	4	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	692	2	125	379	12	8	1	239	11	5	5
Approach Volume (veh/h)	701		516				248			21		
Crossing Volume (veh/h)	141		16				710			512		
High Capacity (veh/h)	1240		1367				788			925		
High v/c (veh/h)	0.57		0.38				0.31			0.02		
Low Capacity (veh/h)	1030		1146				627			747		
Low v/c (veh/h)	0.68		0.45				0.40			0.03		
Intersection Summary												
Maximum v/c High			0.57									
Maximum v/c Low			0.68									
Intersection Capacity Utilization			77.0%				ICU Level of Service					D

HCM Unsignalized Intersection Capacity Analysis
42: Coronation Blvd & Amherst Dr

Amherstview Secondary Plan
2046 Ultimate AM LGS_Option 1 Concept



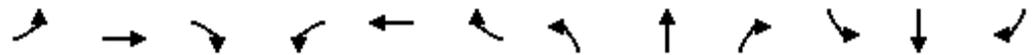
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	188	118	74	16	20	151
Future Volume (Veh/h)	188	118	74	16	20	151
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	238	149	94	20	25	191
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	8					
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	356					
pX, platoon unblocked						
vC, conflicting volume	328	120	216			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	328	120	216			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	61	84	93			
cM capacity (veh/h)	610	926	1336			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	387	114	216			
Volume Left	238	94	0			
Volume Right	149	0	191			
cSH	991	1336	1700			
Volume to Capacity	0.39	0.07	0.13			
Queue Length 95th (m)	15.0	1.8	0.0			
Control Delay (s)	12.7	6.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.7	6.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	7.9					
Intersection Capacity Utilization	35.7%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
46: Taylor Kidd Blvd & William Henderson Dr

Amherstview Secondary Plan
2046 Ultimate AM LGS_Option 1 Concept

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	0	173	36	0	227	0	84	0	0	0	0	0						
Future Volume (Veh/h)	0	173	36	0	227	0	84	0	0	0	0	0						
Sign Control		Free			Free			Stop			Stop							
Grade		0%			0%			0%			0%							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90						
Hourly flow rate (vph)	0	192	40	0	252	0	93	0	0	0	0	0						
Pedestrians																		
Lane Width (m)																		
Walking Speed (m/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type	None					None												
Median storage (veh)																		
Upstream signal (m)																		
pX, platoon unblocked																		
vC, conflicting volume	252			232			464		464		212		464		484		252	
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	252			232			464		464		212		464		484		252	
tC, single (s)	4.1			4.1			7.1		6.5		6.2		7.1		6.5		6.2	
tC, 2 stage (s)																		
tF (s)	2.2			2.2			3.5		4.0		3.3		3.5		4.0		3.3	
p0 queue free %	100			100			82		100		100		100		100		100	
cM capacity (veh/h)	1325			1348			512		498		833		512		486		792	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1													
Volume Total	232	252	0	93	0													
Volume Left	0	0	0	93	0													
Volume Right	40	0	0	0	0													
cSH	1325	1348	1700	512	1700													
Volume to Capacity	0.00	0.00	0.00	0.18	0.00													
Queue Length 95th (m)	0.0	0.0	0.0	5.3	0.0													
Control Delay (s)	0.0	0.0	0.0	13.6	0.0													
Lane LOS				B	A													
Approach Delay (s)	0.0	0.0		13.6	0.0													
Approach LOS				B	A													
Intersection Summary																		
Average Delay				2.2														
Intersection Capacity Utilization				23.3%	ICU Level of Service	A												
Analysis Period (min)				15														

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	0	41	12	0	59	55	323	36	112	586	91
Future Volume (vph)	46	0	41	12	0	59	55	323	36	112	586	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	46	0	13	66	0	61	399	0	124	752	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	27.0	27.0		27.0	27.0		33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	9.3	9.3		9.1	9.1		47.6	47.6		47.6	47.6	
Actuated g/C Ratio	0.16	0.16		0.15	0.15		0.79	0.79		0.79	0.79	
v/c Ratio	0.24	0.12		0.06	0.11		0.13	0.27		0.16	0.51	
Control Delay	23.0	0.6		19.1	0.4		8.1	7.2		4.9	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.0	0.6		19.1	0.4		8.1	7.2		4.9	6.8	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		12.4			3.5			7.3			6.5	
Approach LOS		B			A			A			A	
Queue Length 50th (m)	5.5	0.0		1.4	0.0		2.1	26.1		3.4	29.3	
Queue Length 95th (m)	11.3	0.0		4.4	0.0		13.2	59.0		14.8	97.5	
Internal Link Dist (m)		102.5			98.8			385.7			417.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	508	716		517	860		483	1473		794	1480	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.06		0.03	0.08		0.13	0.27		0.16	0.51	

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: 0.51

Timings

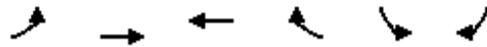
6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



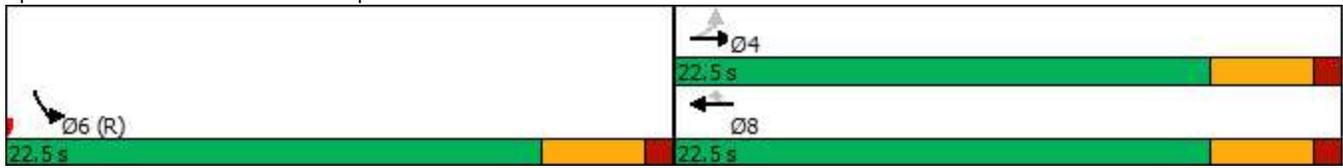
Timings
8: Bath Rd & Speers Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑	↗	↖	↗
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type	Perm			Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (m)						
Queue Length 95th (m)						
Internal Link Dist (m)		411.7	317.3		129.8	
Turn Bay Length (m)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						
Intersection Summary						
Cycle Length: 45						
Actuated Cycle Length: 45						
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green						
Natural Cycle: 45						
Control Type: Pretimed						
Maximum v/c Ratio: 0.00						
Intersection Signal Delay: 0.0				Intersection LOS: A		
Intersection Capacity Utilization 0.0%				ICU Level of Service A		
Analysis Period (min) 15						

Timings
8: Bath Rd & Speers Blvd

Splits and Phases: 8: Bath Rd & Speers Blvd



Timings
9: County Road 6 & Amherst Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	49	41	16	50	145	55	225	30	262	306	91
Future Volume (vph)	46	49	41	16	50	145	55	225	30	262	306	91
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	103	0	18	224	0	63	293	0	301	457	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	9.7	9.7		9.7	9.7		41.1	41.1		41.1	41.1	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.68	0.68		0.68	0.68	
v/c Ratio	0.39	0.32		0.09	0.55		0.10	0.23		0.40	0.36	
Control Delay	28.7	14.9		19.2	11.8		4.7	4.7		4.6	3.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	14.9		19.2	11.8		4.7	4.7		4.6	3.0	
LOS	C	B		B	B		A	A		A	A	
Approach Delay		19.6			12.3			4.7			3.6	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	5.8	5.9		1.9	6.0		2.6	12.2		6.9	6.9	
Queue Length 95th (m)	12.0	13.6		5.3	17.6		9.5	31.1		13.1	8.9	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	292	636		447	686		624	1263		756	1269	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.16		0.04	0.33		0.10	0.23		0.40	0.36	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 29 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55

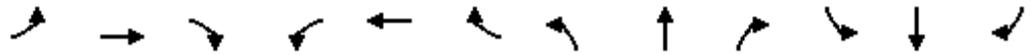
Timings
 9: County Road 6 & Amherst Dr

Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: County Road 6 & Amherst Dr



Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	25	41	7	20	42	55	224	10	84	187	91
Future Volume (vph)	46	25	41	7	20	42	55	224	10	84	187	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	75	0	8	71	0	63	266	0	95	316	0
Turn Type	Perm	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases		4!		8!	8			2				6
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0		5.0
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7		22.7
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0		35.0
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%		58.3%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7		3.7
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7		4.7
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max		C-Max
Act Effct Green (s)	9.3	9.3		9.3	9.3		44.4	44.4		44.4		44.4
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.74	0.74		0.74		0.74
v/c Ratio	0.25	0.25		0.03	0.24		0.08	0.20		0.11		0.23
Control Delay	23.1	11.9		18.3	11.4		4.8	4.6		5.2		4.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	23.1	11.9		18.3	11.4		4.8	4.6		5.2		4.9
LOS	C	B		B	B		A	A		A		A
Approach Delay		16.5			12.1			4.6				5.0
Approach LOS		B			B			A				A
Queue Length 50th (m)	5.6	2.9		0.8	2.4		1.6	7.4		5.4		17.7
Queue Length 95th (m)	11.2	10.0		3.2	9.4		7.8	25.1		12.9		33.0
Internal Link Dist (m)		246.5			224.0			540.0				282.6
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	461	618		616	603		800	1361		828		1353
Starvation Cap Reductn	0	0		0	0		0	0		0		0
Spillback Cap Reductn	0	0		0	0		0	0		0		0
Storage Cap Reductn	0	0		0	0		0	0		0		0
Reduced v/c Ratio	0.11	0.12		0.01	0.12		0.08	0.20		0.11		0.23

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: 0.25

Timings
11: County Road 6 & Kildare Ave

Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 40.4%	ICU Level of Service A
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	242	280	175	116	120
Future Volume (vph)	110	242	280	175	116	120
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	3%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	260	301	188	125	129
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	7	7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	26.9	26.9	33.9	33.9	22.7	22.7
Total Split (s)	36.0	36.0	36.0	36.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	49.6	49.6	49.6	49.6	11.0	11.0
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.16	0.16
v/c Ratio	0.15	0.20	0.22	0.16	0.45	0.36
Control Delay	4.9	4.7	4.8	1.3	30.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	4.7	4.8	1.3	30.6	7.8
LOS	A	A	A	A	C	A
Approach Delay		4.7	3.4		19.0	
Approach LOS		A	A		B	
Queue Length 50th (m)	4.0	9.2	10.9	0.0	16.1	0.0
Queue Length 95th (m)	13.2	24.7	28.5	6.6	27.2	11.9
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	775	1318	1345	1165	740	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.22	0.16	0.17	0.18

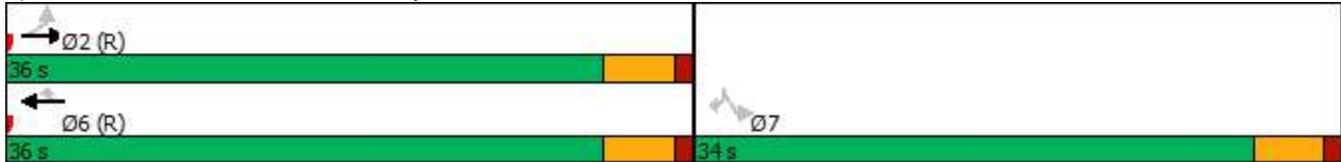
Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 29 (41%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45

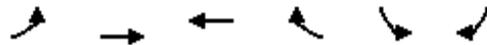
Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 51.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
38: Bath Rd & Coronation Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	673	953	176	144	21
Future Volume (vph)	11	673	953	176	144	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	11%	2%	1%	3%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	694	982	181	170	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	64.7	64.7	64.7	64.7	25.3	
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	62.7	62.7	62.7	62.7	14.1	
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.16	
v/c Ratio	0.05	0.54	0.75	0.16	0.60	
Control Delay	6.2	9.1	14.4	1.3	41.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.2	9.1	14.4	1.3	41.8	
LOS	A	A	B	A	D	
Approach Delay		9.1	12.3		41.8	
Approach LOS		A	B		D	
Queue Length 50th (m)	0.6	51.9	96.6	0.0	27.8	
Queue Length 95th (m)	2.8	95.3	183.5	6.8	45.5	
Internal Link Dist (m)		189.7	190.1		331.8	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	214	1297	1309	1146	381	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.54	0.75	0.16	0.45	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75

Timings
 38: Bath Rd & Coronation Blvd

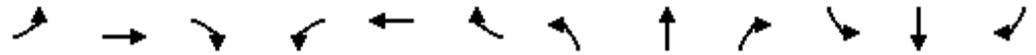
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Bath Rd & Coronation Blvd



HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate PM LGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	23	149	70	386	147	63	42	250	178	26	333	15
Future Volume (veh/h)	23	149	70	386	147	63	42	250	178	26	333	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	162	76	420	160	68	46	272	193	28	362	16
Approach Volume (veh/h)	263		648				511			406		
Crossing Volume (veh/h)	810				343			215		626		
High Capacity (veh/h)	727				1058			1170			844	
High v/c (veh/h)	0.36				0.61			0.44			0.48	
Low Capacity (veh/h)	573				865			967			675	
Low v/c (veh/h)	0.46				0.75			0.53			0.60	
Intersection Summary												
Maximum v/c High			0.61									
Maximum v/c Low			0.75									
Intersection Capacity Utilization			86.0%		ICU Level of Service						E	

HCM Unsignalized Intersection Capacity Analysis
10: Pratt Dr & Amherst Dr

Amherstview Secondary Plan
2046 Ultimate PM LGS_Option 1 Concept

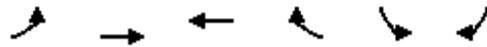
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	249	19	12	194	70	17	25	6	30	15	41
Future Volume (Veh/h)	67	249	19	12	194	70	17	25	6	30	15	41
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	75	280	21	13	218	79	19	28	7	34	17	46
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246										
pX, platoon unblocked												
vC, conflicting volume	297			301			778	764	290	745	734	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	297			301			778	764	290	745	734	258
tC, single (s)	4.1			4.2			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	94			99			93	91	99	88	95	94
cM capacity (veh/h)	1276			1216			256	313	708	291	325	786
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	376	310	54	97								
Volume Left	75	13	19	34								
Volume Right	21	79	7	46								
cSH	1276	1216	311	426								
Volume to Capacity	0.06	0.01	0.17	0.23								
Queue Length 95th (m)	1.5	0.3	4.9	6.9								
Control Delay (s)	2.1	0.4	19.0	15.9								
Lane LOS	A	A	C	C								
Approach Delay (s)	2.1	0.4	19.0	15.9								
Approach LOS			C	C								
Intersection Summary												
Average Delay			4.2									
Intersection Capacity Utilization			49.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 12: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
 2046 Ultimate PM LGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	452	2	33	370	1	15	0	37	4	0	2
Future Volume (Veh/h)	0	452	2	33	370	1	15	0	37	4	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	565	2	41	462	1	19	0	46	5	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	463			567			1112	1111	566	1156	1112	462
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			567			1112	1111	566	1156	1112	462
tC, single (s)	4.1			4.1			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			96			88	100	91	97	100	100
cM capacity (veh/h)	1109			1015			162	202	514	154	202	603
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	567	504	65	7								
Volume Left	0	41	19	5								
Volume Right	2	1	46	2								
cSH	1109	1015	315	196								
Volume to Capacity	0.00	0.04	0.21	0.04								
Queue Length 95th (m)	0.0	1.0	6.1	0.9								
Control Delay (s)	0.0	1.2	19.4	24.0								
Lane LOS		A	C	C								
Approach Delay (s)	0.0	1.2	19.4	24.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			56.9%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



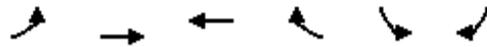
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (veh/h)	1	440	342	16	9	2
Future Volume (Veh/h)	1	440	342	16	9	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	484	376	18	10	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	394				871	385
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	394				871	385
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1176				306	667
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	485	394	12			
Volume Left	1	0	10			
Volume Right	0	18	2			
cSH	1176	1700	337			
Volume to Capacity	0.00	0.23	0.04			
Queue Length 95th (m)	0.0	0.0	0.9			
Control Delay (s)	0.0	0.0	16.1			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.0	16.1			
Approach LOS			C			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			34.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate PM LGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	191	76	26	202	69	35	85	17	99	124	46
Future Volume (vph)	12	191	76	26	202	69	35	85	17	99	124	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	13	210	84	29	222	76	38	93	19	109	136	51
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	307	327	150	296								
Volume Left (vph)	13	29	38	109								
Volume Right (vph)	84	76	19	51								
Hadj (s)	-0.07	0.04	0.00	0.04								
Departure Headway (s)	6.0	6.0	6.5	6.2								
Degree Utilization, x	0.51	0.55	0.27	0.51								
Capacity (veh/h)	560	550	468	533								
Control Delay (s)	14.9	16.0	12.0	15.5								
Approach Delay (s)	14.9	16.0	12.0	15.5								
Approach LOS	B	C	B	C								
Intersection Summary												
Delay			15.0									
Level of Service			C									
Intersection Capacity Utilization			53.2%	ICU Level of Service	A							
Analysis Period (min)			15									

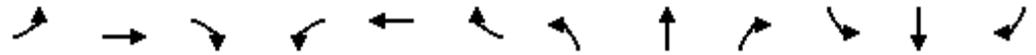
HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	
Traffic Volume (veh/h)	28	362	321	3	10	60
Future Volume (Veh/h)	28	362	321	3	10	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	33	431	382	4	12	71
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	386				879	382
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	386				879	382
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				96	89
cM capacity (veh/h)	1156				311	665
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	464	382	4	83		
Volume Left	33	0	0	12		
Volume Right	0	0	4	71		
cSH	1156	1700	1700	571		
Volume to Capacity	0.03	0.22	0.00	0.15		
Queue Length 95th (m)	0.7	0.0	0.0	4.0		
Control Delay (s)	0.9	0.0	0.0	12.4		
Lane LOS	A			B		
Approach Delay (s)	0.9	0.0		12.4		
Approach LOS				B		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			51.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate PM LGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	14	367	9	252	624	52	6	4	219	36	11	15
Future Volume (veh/h)	14	367	9	252	624	52	6	4	219	36	11	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	390	10	268	664	55	6	4	233	38	12	16
Approach Volume (veh/h)	415		987				243		66			
Crossing Volume (veh/h)	318		25				443		938			
High Capacity (veh/h)	1079		1358				977		655			
High v/c (veh/h)	0.38		0.73				0.25		0.10			
Low Capacity (veh/h)	884		1137				793		511			
Low v/c (veh/h)	0.47		0.87				0.31		0.13			
Intersection Summary												
Maximum v/c High			0.73									
Maximum v/c Low			0.87									
Intersection Capacity Utilization			101.5%		ICU Level of Service			G				

HCM Unsignalized Intersection Capacity Analysis

42: Coronation Blvd & Amherst Dr

Amherstview Secondary Plan
2046 Ultimate PM LGS_Option 1 Concept



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	267	165	150	25	33	209
Future Volume (Veh/h)	267	165	150	25	33	209
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	338	209	190	32	42	265
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	8					
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	356					
pX, platoon unblocked						
vC, conflicting volume	586	174	307			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	586	174	307			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	16	76	85			
cM capacity (veh/h)	401	871	1259			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	547	222	307			
Volume Left	338	190	0			
Volume Right	209	0	265			
cSH	649	1259	1700			
Volume to Capacity	0.84	0.15	0.18			
Queue Length 95th (m)	74.4	4.2	0.0			
Control Delay (s)	32.9	7.3	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.9	7.3	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			18.2			
Intersection Capacity Utilization			49.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
46: Taylor Kidd Blvd & William Henderson Dr

Amherstview Secondary Plan
2046 Ultimate PM LGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	244	73	0	205	0	47	0	0	0	0	0
Future Volume (Veh/h)	0	244	73	0	205	0	47	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	271	81	0	228	0	52	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	228			352			540	540	312	540	580	228
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	228			352			540	540	312	540	580	228
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			89	100	100	100	100	100
cM capacity (veh/h)	1352			1218			456	452	733	456	428	816
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	352	228	0	52	0							
Volume Left	0	0	0	52	0							
Volume Right	81	0	0	0	0							
cSH	1352	1218	1700	456	1700							
Volume to Capacity	0.00	0.00	0.00	0.11	0.00							
Queue Length 95th (m)	0.0	0.0	0.0	3.1	0.0							
Control Delay (s)	0.0	0.0	0.0	13.9	0.0							
Lane LOS				B	A							
Approach Delay (s)	0.0	0.0		13.9	0.0							
Approach LOS				B	A							
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			27.3%		ICU Level of Service				A			
Analysis Period (min)			15									



SYNCHRO ANALYSIS – ULTIMATE CONDITIONS
LOW GROWTH SCENARIO
LAND USE CONCEPT 2&3

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	0	60	16	0	141	34	566	16	33	345	49
Future Volume (vph)	110	0	60	16	0	141	34	566	16	33	345	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	67	0	18	157	0	38	647	0	37	437	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0		37.0	37.0	
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%		61.7%	61.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	11.5	11.5		11.4	11.4		42.4	42.4		42.4	42.4	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.71	0.71		0.71	0.71	
v/c Ratio	0.52	0.10		0.07	0.32		0.06	0.48		0.08	0.33	
Control Delay	28.7	0.3		17.8	2.5		5.5	7.8		5.8	6.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	0.3		17.8	2.5		5.5	7.8		5.8	6.0	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		18.6			4.1			7.6			6.0	
Approach LOS		B			A			A			A	
Queue Length 50th (m)	12.9	0.0		1.8	0.0		1.3	31.1		1.2	17.2	
Queue Length 95th (m)	23.6	0.0		5.5	4.0		5.6	76.2		5.8	43.6	
Internal Link Dist (m)		98.7			98.8			468.8			334.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	376	799		417	661		656	1337		475	1322	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.08		0.04	0.24		0.06	0.48		0.08	0.33	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52

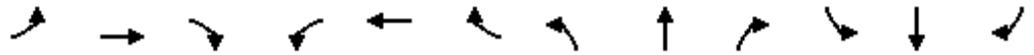
Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



Timings
9: County Road 6 & Amherst Dr

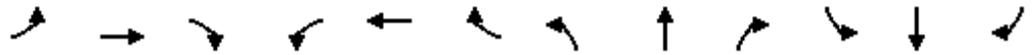


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	49	60	16	34	195	34	311	4	135	214	49
Future Volume (vph)	110	49	60	16	34	195	34	311	4	135	214	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	9%	0%	3%	0%	2%	0%	7%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	121	0	18	255	0	38	350	0	150	292	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	9.5	32.0		22.5	22.5		38.0	38.0		38.0	38.0	
Total Split (%)	13.6%	45.7%		32.1%	32.1%		54.3%	54.3%		54.3%	54.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	16.9	16.9		9.3	9.3		43.9	43.9		43.9	43.9	
Actuated g/C Ratio	0.24	0.24		0.13	0.13		0.63	0.63		0.63	0.63	
v/c Ratio	0.55	0.26		0.11	0.63		0.06	0.30		0.26	0.26	
Control Delay	28.5	10.3		25.1	13.6		8.0	8.6		9.6	7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.5	10.3		25.1	13.6		8.0	8.6		9.6	7.8	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		19.4			14.4			8.6			8.4	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	13.7	5.9		2.3	4.9		1.8	19.1		8.0	14.1	
Queue Length 95th (m)	21.1	14.2		6.6	21.0		7.5	48.4		25.2	38.0	
Internal Link Dist (m)		105.8			221.8			294.2			468.8	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	222	725		304	576		683	1165		588	1138	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.17		0.06	0.44		0.06	0.30		0.26	0.26	

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 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: 0.63

Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	16	60	26	29	103	34	139	6	26	214	49
Future Volume (vph)	110	16	60	26	29	103	34	139	6	26	214	49
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	0%	11%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	82	0	28	142	0	37	155	0	28	283	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	24.0	24.0		24.0	24.0		36.0	36.0		36.0	36.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%		60.0%	60.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	11.3	11.3		11.2	11.2		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.71	0.71		0.71	0.71	
v/c Ratio	0.50	0.22		0.11	0.35		0.05	0.12		0.04	0.21	
Control Delay	27.7	8.7		18.7	8.9		5.3	5.0		5.3	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.7	8.7		18.7	8.9		5.3	5.0		5.3	5.0	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		19.9			10.5			5.1			5.0	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	12.5	1.7		2.8	3.0		1.2	5.2		0.9	9.2	
Queue Length 95th (m)	22.5	9.6		7.4	13.6		5.4	15.5		4.4	25.5	
Internal Link Dist (m)		247.5			222.4			528.4			294.2	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	411	587		434	616		789	1290		799	1317	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.14		0.06	0.23		0.05	0.12		0.04	0.21	

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: 0.50

Timings
 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	232	223	85	166	136
Future Volume (vph)	94	232	223	85	166	136
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	0%	3%	3%	6%	7%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	270	259	99	193	158
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	7	7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	26.9	26.9	33.9	33.9	22.7	22.7
Total Split (s)	39.0	39.0	39.0	39.0	31.0	31.0
Total Split (%)	55.7%	55.7%	55.7%	55.7%	44.3%	44.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	47.4	47.4	47.4	47.4	13.2	13.2
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.19	0.19
v/c Ratio	0.15	0.21	0.21	0.09	0.60	0.38
Control Delay	5.6	5.4	6.5	2.9	33.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	5.4	6.5	2.9	33.4	7.1
LOS	A	A	A	A	C	A
Approach Delay		5.5	5.5		21.5	
Approach LOS		A	A		C	
Queue Length 50th (m)	4.5	11.7	10.6	0.0	24.5	0.0
Queue Length 95th (m)	11.7	24.2	29.7	8.0	38.2	11.5
Internal Link Dist (m)		125.6	411.7		528.4	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	741	1286	1249	1093	639	665
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.21	0.09	0.30	0.24

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 29 (41%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60

Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	41	19	0	105	55	350	41	100	647	115
Future Volume (vph)	61	0	41	19	0	105	55	350	41	100	647	115
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	46	0	21	117	0	61	435	0	111	847	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	27.0	27.0		27.0	27.0		33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	9.8	9.8		9.8	9.8		43.9	43.9		43.9	43.9	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.73	0.73		0.73	0.73	
v/c Ratio	0.32	0.12		0.09	0.20		0.17	0.32		0.16	0.62	
Control Delay	24.3	0.6		19.4	0.8		7.3	6.2		5.5	9.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.3	0.6		19.4	0.8		7.3	6.2		5.5	9.9	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		14.8			3.6			6.3			9.4	
Approach LOS		B			A			A			A	
Queue Length 50th (m)	7.3	0.0		2.2	0.0		2.3	16.5		3.3	39.2	
Queue Length 95th (m)	14.2	0.0		6.0	0.0		8.8	48.0		13.6	#145.0	
Internal Link Dist (m)		98.7			98.8			468.8			334.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	486	697		517	840		354	1373		692	1364	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.07		0.04	0.14		0.17	0.32		0.16	0.62	

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: 0.62

Timings
9: County Road 6 & Amherst Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	49	41	16	50	145	55	240	30	262	330	115
Future Volume (vph)	61	49	41	16	50	145	55	240	30	262	330	115
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	103	0	18	224	0	63	310	0	301	511	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	10.2	10.2		10.2	10.2		40.6	40.6		40.6	40.6	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.68	0.68		0.68	0.68	
v/c Ratio	0.47	0.30		0.08	0.53		0.11	0.25		0.41	0.41	
Control Delay	31.3	14.3		18.8	11.2		4.6	4.6		2.8	1.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.3	14.3		18.8	11.2		4.6	4.6		2.8	1.7	
LOS	C	B		B	B		A	A		A	A	
Approach Delay		21.2			11.8			4.6			2.1	
Approach LOS		C			B			A			A	
Queue Length 50th (m)	7.6	5.8		1.8	5.9		2.5	12.8		2.1	2.2	
Queue Length 95th (m)	15.0	13.6		5.3	17.6		9.2	31.4		4.1	3.9	
Internal Link Dist (m)		105.8			221.8			294.2			468.8	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	299	636		447	686		566	1249		736	1250	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.16		0.04	0.33		0.11	0.25		0.41	0.41	

Intersection Summary
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 29 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53

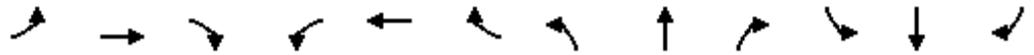
Timings
 9: County Road 6 & Amherst Dr

Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 60.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: County Road 6 & Amherst Dr



Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	25	41	7	20	42	55	224	10	84	187	115
Future Volume (vph)	61	25	41	7	20	42	55	224	10	84	187	115
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	75	0	8	71	0	63	266	0	95	344	0
Turn Type	Perm	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases		4!		8!	8			2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	9.7	9.7		9.7	9.7		44.0	44.0		44.0	44.0	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.73	0.73		0.73	0.73	
v/c Ratio	0.32	0.24		0.03	0.23		0.08	0.20		0.12	0.26	
Control Delay	24.1	11.6		18.0	11.0		4.9	4.7		4.0	3.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.1	11.6		18.0	11.0		4.9	4.7		4.0	3.8	
LOS	C	B		B	B		A	A		A	A	
Approach Delay		17.6			11.7			4.8			3.8	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	7.4	2.9		0.8	2.4		1.7	7.9		3.8	14.4	
Queue Length 95th (m)	13.9	10.0		3.2	9.4		7.9	25.1		9.0	22.5	
Internal Link Dist (m)		247.5			222.4			528.4			294.2	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	461	618		616	603		772	1347		820	1334	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.12		0.01	0.12		0.08	0.20		0.12	0.26	

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: 0.32

Timings

11: County Road 6 & Kildare Ave

Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 42.7%	ICU Level of Service A
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	242	280	175	116	120
Future Volume (vph)	110	242	280	175	116	120
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	3%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	260	301	188	125	129
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		7	
Permitted Phases	2			6		7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	26.9	26.9	33.9	33.9	22.7	22.7
Total Split (s)	36.0	36.0	36.0	36.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	49.6	49.6	49.6	49.6	11.0	11.0
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.16	0.16
v/c Ratio	0.15	0.20	0.22	0.16	0.45	0.36
Control Delay	4.9	4.7	4.8	1.3	30.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	4.7	4.8	1.3	30.6	7.8
LOS	A	A	A	A	C	A
Approach Delay		4.7	3.4		19.0	
Approach LOS		A	A		B	
Queue Length 50th (m)	4.0	9.2	10.9	0.0	16.1	0.0
Queue Length 95th (m)	13.2	24.7	28.5	6.6	27.2	11.9
Internal Link Dist (m)		125.6	411.7		528.4	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	775	1318	1345	1165	740	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.22	0.16	0.17	0.18

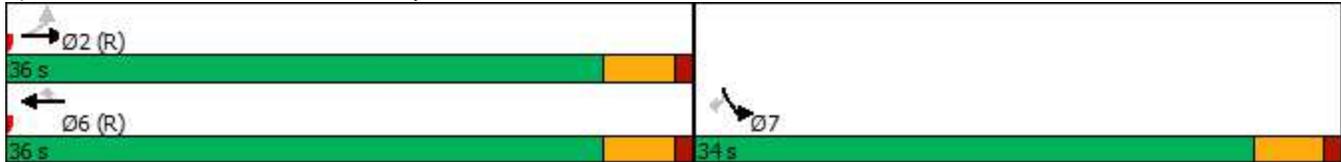
Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 29 (41%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45

Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 51.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6





SYNCHRO ANALYSIS – FUTURE BACKGROUND
HIGH GROWTH SCENARIO

Timings
38: Bath Rd & Coronation Blvd



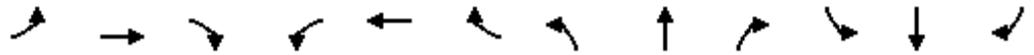
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	1231	578	62	200	17
Future Volume (vph)	13	1231	578	62	200	17
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	33%	2%	2%	0%	3%	13%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	1399	657	70	246	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	46.4	46.4	46.4	46.4	15.4	
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.21	
v/c Ratio	0.05	1.21	0.57	0.07	0.68	
Control Delay	7.5	124.0	11.7	2.2	36.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.5	124.0	11.7	2.2	36.6	
LOS	A	F	B	A	D	
Approach Delay		122.8	10.8		36.6	
Approach LOS		F	B		D	
Queue Length 50th (m)	0.8	~262.2	52.5	0.0	33.0	
Queue Length 95th (m)	3.4	#339.3	88.2	4.6	52.3	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	291	1152	1152	1025	442	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.05	1.21	0.57	0.07	0.56	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 24.9 (33%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21

HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Background AM - HGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	20	278	73	86	377	30	115	373	227	113	291	45
Future Volume (veh/h)	20	278	73	86	377	30	115	373	227	113	291	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	309	81	96	419	33	128	414	252	126	323	50
Approach Volume (veh/h)		412			548			794			499	
Crossing Volume (veh/h)		545			564			457			643	
High Capacity (veh/h)		900			887			966			832	
High v/c (veh/h)		0.46			0.62			0.82			0.60	
Low Capacity (veh/h)		725			713			783			665	
Low v/c (veh/h)		0.57			0.77			1.01			0.75	
Intersection Summary												
Maximum v/c High											0.82	
Maximum v/c Low											1.01	
Intersection Capacity Utilization				101.2%			ICU Level of Service				G	

HCM Unsignalized Intersection Capacity Analysis
2: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
2046 Background AM - HGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	7	365	26	94	460	7	10	3	196	3	3	0
Future Volume (Veh/h)	7	365	26	94	460	7	10	3	196	3	3	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	9	493	35	127	622	9	14	4	265	4	4	0
Pedestrians		2			2			2			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	633			530			1415	1418	514	1680	1430	630
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	633			530			1415	1418	514	1680	1430	630
tC, single (s)	4.1			4.1			7.8	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.1	4.0	3.4	3.5	4.0	3.3
p0 queue free %	99			88			81	97	52	88	97	100
cM capacity (veh/h)	958			1025			73	120	548	34	117	483
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	537	758	283	8								
Volume Left	9	127	14	4								
Volume Right	35	9	265	0								
cSH	958	1025	399	53								
Volume to Capacity	0.01	0.12	0.71	0.15								
Queue Length 95th (m)	0.2	3.4	42.8	3.9								
Control Delay (s)	0.3	3.0	33.2	84.7								
Lane LOS	A	A	D	F								
Approach Delay (s)	0.3	3.0	33.2	84.7								
Approach LOS			D	F								
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Utilization			73.8%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
6: County Road 6 & Waldon Pond Dr

Amherstview Secondary Plan
2046 Background AM - HGS

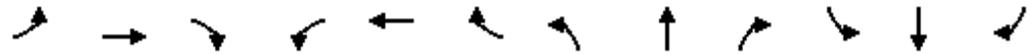
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	198	577	19	38	413
Future Volume (Veh/h)	22	198	577	19	38	413
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	220	641	21	42	459
Pedestrians			6			6
Lane Width (m)			3.6			3.6
Walking Speed (m/s)			1.2			1.2
Percent Blockage			1			1
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1200	658			662	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1200	658			662	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	53			96	
cM capacity (veh/h)	196	466			936	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	244	662	42	459		
Volume Left	24	0	42	0		
Volume Right	220	21	0	0		
cSH	410	1700	936	1700		
Volume to Capacity	0.59	0.39	0.04	0.27		
Queue Length 95th (m)	29.9	0.0	1.1	0.0		
Control Delay (s)	25.9	0.0	9.0	0.0		
Lane LOS	D		A			
Approach Delay (s)	25.9	0.0	0.8			
Approach LOS	D					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			51.7%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 9: County Road 6 & Amherst Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	431	172	17	269	126
Future Volume (Veh/h)	17	431	172	17	269	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	479	191	19	299	140
Pedestrians			9			9
Lane Width (m)			3.6			3.6
Walking Speed (m/s)			1.2			1.2
Percent Blockage			1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	948	210			210	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	948	210			210	
tC, single (s)	6.5	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.3	
p0 queue free %	91	42			78	
cM capacity (veh/h)	216	822			1331	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	498	210	299	140		
Volume Left	19	0	299	0		
Volume Right	479	19	0	0		
cSH	743	1700	1331	1700		
Volume to Capacity	0.67	0.12	0.22	0.08		
Queue Length 95th (m)	41.7	0.0	6.9	0.0		
Control Delay (s)	19.1	0.0	8.5	0.0		
Lane LOS	C		A			
Approach Delay (s)	19.1	0.0	5.8			
Approach LOS	C					
Intersection Summary						
Average Delay			10.5			
Intersection Capacity Utilization			62.6%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

Amherstview Secondary Plan
 2046 Background AM - HGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	21	263	16	2	290	27	79	12	20	45	13	101
Future Volume (Veh/h)	21	263	16	2	290	27	79	12	20	45	13	101
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	25	317	19	2	349	33	95	14	24	54	16	122
Pedestrians		10			10			10			10	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	392			346			896	782	346	797	776	386
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392			346			896	782	346	797	776	386
tC, single (s)	4.1			4.6			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			52	96	96	80	95	81
cM capacity (veh/h)	1168			981			196	315	629	272	318	656
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	361	384	133	192								
Volume Left	25	2	95	54								
Volume Right	19	33	24	122								
cSH	1168	981	235	441								
Volume to Capacity	0.02	0.00	0.57	0.43								
Queue Length 95th (m)	0.5	0.0	25.1	17.3								
Control Delay (s)	0.8	0.1	38.6	19.3								
Lane LOS	A	A	E	C								
Approach Delay (s)	0.8	0.1	38.6	19.3								
Approach LOS			E	C								
Intersection Summary												
Average Delay			8.5									
Intersection Capacity Utilization			49.2%		ICU Level of Service				A			
Analysis Period (min)			15									

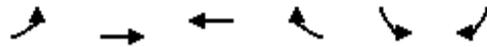
HCM Unsignalized Intersection Capacity Analysis
 11: County Road 6 & Kildare Ave

Amherstview Secondary Plan
 2046 Background AM - HGS



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	34	106	158	6	26	138
Future Volume (Veh/h)	34	106	158	6	26	138
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	37	114	170	6	28	148
Pedestrians			11		11	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	388	184			176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	184			176	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	94	87			98	
cM capacity (veh/h)	601	853			1348	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	151	176	176			
Volume Left	37	0	28			
Volume Right	114	6	0			
cSH	774	1700	1348			
Volume to Capacity	0.20	0.10	0.02			
Queue Length 95th (m)	5.8	0.0	0.5			
Control Delay (s)	10.8	0.0	1.4			
Lane LOS	B		A			
Approach Delay (s)	10.8	0.0	1.4			
Approach LOS	B					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			35.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Bath Rd & County Road 6

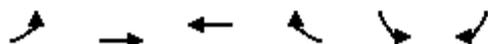


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶	↷	↶	↷
Traffic Volume (veh/h)	62	405	337	98	103	69
Future Volume (Veh/h)	62	405	337	98	103	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	72	471	392	114	120	80
Pedestrians		13	13			
Lane Width (m)		3.6	3.6			
Walking Speed (m/s)		1.2	1.2			
Percent Blockage		1	1			
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	506				1020	405
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	506				1020	405
tC, single (s)	4.1				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	93				49	87
cM capacity (veh/h)	1049				237	628
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	72	471	392	114	200	
Volume Left	72	0	0	0	120	
Volume Right	0	0	0	114	80	
cSH	1049	1700	1700	1700	316	
Volume to Capacity	0.07	0.28	0.23	0.07	0.63	
Queue Length 95th (m)	1.8	0.0	0.0	0.0	32.3	
Control Delay (s)	8.7	0.0	0.0	0.0	34.1	
Lane LOS	A				D	
Approach Delay (s)	1.2		0.0		34.1	
Approach LOS					D	
Intersection Summary						
Average Delay			6.0			
Intersection Capacity Utilization			41.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

26: Bath Rd & Bayview Dr

Amherstview Secondary Plan
2046 Background AM - HGS



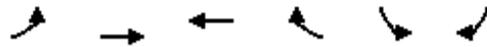
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (veh/h)	4	415	380	6	17	0
Future Volume (Veh/h)	4	415	380	6	17	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	446	409	6	18	0
Pedestrians		26	26			
Lane Width (m)		3.6	3.6			
Walking Speed (m/s)		1.2	1.2			
Percent Blockage		2	2			
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	415				892	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415				892	438
tC, single (s)	5.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.7	3.3
p0 queue free %	99				94	100
cM capacity (veh/h)	767				277	609
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	450	415	18			
Volume Left	4	0	18			
Volume Right	0	6	0			
cSH	767	1700	277			
Volume to Capacity	0.01	0.24	0.06			
Queue Length 95th (m)	0.1	0.0	1.7			
Control Delay (s)	0.2	0.0	18.9			
Lane LOS	A		C			
Approach Delay (s)	0.2	0.0	18.9			
Approach LOS			C			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			35.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Background AM - HGS

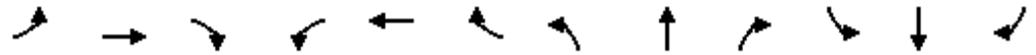
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	222	79	30	203	48	100	63	24	14	17	8
Future Volume (vph)	7	222	79	30	203	48	100	63	24	14	17	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	244	87	33	223	53	110	69	26	15	19	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	339	309	205	43								
Volume Left (vph)	8	33	110	15								
Volume Right (vph)	87	53	26	9								
Hadj (s)	-0.06	0.09	0.06	-0.06								
Departure Headway (s)	5.0	5.2	5.7	5.9								
Degree Utilization, x	0.47	0.45	0.32	0.07								
Capacity (veh/h)	676	655	571	497								
Control Delay (s)	12.5	12.4	11.4	9.4								
Approach Delay (s)	12.5	12.4	11.4	9.4								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay			12.1									
Level of Service			B									
Intersection Capacity Utilization			52.3%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↶	↷	↷	
Traffic Volume (veh/h)	93	400	362	18	4	60
Future Volume (Veh/h)	93	400	362	18	4	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	99	426	385	19	4	64
Pedestrians		35	35			
Lane Width (m)		3.6	3.6			
Walking Speed (m/s)		1.2	1.2			
Percent Blockage		3	3			
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	404				1044	420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404				1044	420
tC, single (s)	4.2				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	91				98	89
cM capacity (veh/h)	1113				226	597
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	525	385	19	68		
Volume Left	99	0	0	4		
Volume Right	0	0	19	64		
cSH	1113	1700	1700	544		
Volume to Capacity	0.09	0.23	0.01	0.12		
Queue Length 95th (m)	2.3	0.0	0.0	3.4		
Control Delay (s)	2.4	0.0	0.0	12.6		
Lane LOS	A			B		
Approach Delay (s)	2.4	0.0		12.6		
Approach LOS				B		
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			59.2%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd



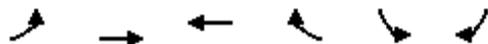
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	9	605	4	114	359	15	11	2	249	13	6	6
Future Volume (veh/h)	9	605	4	114	359	15	11	2	249	13	6	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	11	720	5	136	427	18	13	2	296	15	7	7
Approach Volume (veh/h)	736		581				311			29		
Crossing Volume (veh/h)	158		26				746			576		
High Capacity (veh/h)	1224		1357				766			878		
High v/c (veh/h)	0.60		0.43				0.41			0.03		
Low Capacity (veh/h)	1015		1136				607			706		
Low v/c (veh/h)	0.73		0.51				0.51			0.04		
Intersection Summary												
Maximum v/c High			0.60									
Maximum v/c Low			0.73									
Intersection Capacity Utilization			84.8%				ICU Level of Service					E

HCM Unsignalized Intersection Capacity Analysis
42: Coronation Blvd & Amherst Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	255	160	100	27	34	204
Future Volume (Veh/h)	255	160	100	27	34	204
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	323	203	127	34	43	258
Pedestrians				42	42	
Lane Width (m)				3.6	3.6	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				4	4	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	502	214	301			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	502	214	301			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	28	74	90			
cM capacity (veh/h)	451	792	1243			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	526	161	301			
Volume Left	323	127	0			
Volume Right	203	0	258			
cSH	541	1243	1700			
Volume to Capacity	0.97	0.10	0.18			
Queue Length 95th (m)	105.3	2.7	0.0			
Control Delay (s)	59.9	6.7	0.0			
Lane LOS	F	A				
Approach Delay (s)	59.9	6.7	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			33.0			
Intersection Capacity Utilization			55.3%	ICU Level of Service	B	
Analysis Period (min)			15			

Timings
38: Bath Rd & Coronation Blvd



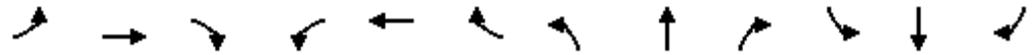
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	795	993	189	147	27
Future Volume (vph)	15	795	993	189	147	27
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	11%	2%	1%	3%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	820	1024	195	180	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	26.9	26.9	33.9	33.9	25.3	
Total Split (s)	49.7	49.7	49.7	49.7	25.3	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	48.3	48.3	48.3	48.3	13.5	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.18	
v/c Ratio	0.11	0.68	0.85	0.18	0.55	
Control Delay	9.1	13.3	20.6	1.6	31.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.1	13.3	20.6	1.6	31.8	
LOS	A	B	C	A	C	
Approach Delay		13.2	17.6		31.8	
Approach LOS		B	B		C	
Queue Length 50th (m)	0.7	65.5	100.5	0.0	23.1	
Queue Length 95th (m)	4.1	134.6	#225.3	7.8	38.4	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0		
Base Capacity (vph)	134	1199	1211	1078	456	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.68	0.85	0.18	0.39	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 23.5 (31%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85

HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Background PM - HGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	24	358	101	199	217	99	66	265	106	43	442	15
Future Volume (veh/h)	24	358	101	199	217	99	66	265	106	43	442	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	389	110	216	236	108	72	288	115	47	480	16
Approach Volume (veh/h)		525			560			475			543	
Crossing Volume (veh/h)		743			386			462			524	
High Capacity (veh/h)		768			1022			962			916	
High v/c (veh/h)		0.68			0.55			0.49			0.59	
Low Capacity (veh/h)		608			834			780			739	
Low v/c (veh/h)		0.86			0.67			0.61			0.74	
Intersection Summary												
Maximum v/c High											0.68	
Maximum v/c Low											0.86	
Intersection Capacity Utilization				99.2%			ICU Level of Service				F	

HCM Unsignalized Intersection Capacity Analysis
2: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
2046 Background PM - HGS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	353	5	59	246	2	29	0	70	7	0	5
Future Volume (Veh/h)	0	353	5	59	246	2	29	0	70	7	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	441	6	74	308	2	36	0	88	9	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	310			447			907	902	444	989	904	309
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310			447			907	902	444	989	904	309
tC, single (s)	4.1			4.1			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			93			84	100	85	95	100	99
cM capacity (veh/h)	1262			1124			220	261	604	185	260	736
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	447	384	124	15								
Volume Left	0	74	36	9								
Volume Right	6	2	88	6								
cSH	1262	1124	401	264								
Volume to Capacity	0.00	0.07	0.31	0.06								
Queue Length 95th (m)	0.0	1.7	10.4	1.4								
Control Delay (s)	0.0	2.2	17.9	19.5								
Lane LOS		A	C	C								
Approach Delay (s)	0.0	2.2	17.9	19.5								
Approach LOS			C	C								
Intersection Summary												
Average Delay			3.5									
Intersection Capacity Utilization			51.4%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
6: County Road 6 & Waldon Pond Dr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	67	339	45	138	615
Future Volume (Veh/h)	14	67	339	45	138	615
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	74	377	50	153	683
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1391	402			427	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1391	402			427	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	89			87	
cM capacity (veh/h)	137	653			1143	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	90	427	153	683		
Volume Left	16	0	153	0		
Volume Right	74	50	0	0		
cSH	391	1700	1143	1700		
Volume to Capacity	0.23	0.25	0.13	0.40		
Queue Length 95th (m)	7.0	0.0	3.7	0.0		
Control Delay (s)	16.9	0.0	8.6	0.0		
Lane LOS	C		A			
Approach Delay (s)	16.9	0.0	1.6			
Approach LOS	C					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			43.9%	ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 9: County Road 6 & Amherst Dr

Amherstview Secondary Plan
 2046 Background PM - HGS

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	37	270	124	62	422	198
Future Volume (Veh/h)	37	270	124	62	422	198
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	43	310	143	71	485	228
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1376	178			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1376	178			214	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	59	64			65	
cM capacity (veh/h)	104	870			1368	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	353	214	485	228		
Volume Left	43	0	485	0		
Volume Right	310	71	0	0		
cSH	459	1700	1368	1700		
Volume to Capacity	0.77	0.13	0.35	0.13		
Queue Length 95th (m)	53.2	0.0	13.0	0.0		
Control Delay (s)	34.5	0.0	9.1	0.0		
Lane LOS	D		A			
Approach Delay (s)	34.5	0.0	6.2			
Approach LOS	D					
Intersection Summary						
Average Delay			12.9			
Intersection Capacity Utilization			62.4%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

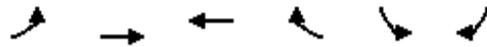
Amherstview Secondary Plan
 2046 Background PM - HGS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	56	0	12	234	70	33	25	19	42	24	50
Future Volume (Veh/h)	120	56	0	12	234	70	33	25	19	42	24	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	135	63	0	13	263	79	37	28	21	47	27	56
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	342			63			731	701	63	696	662	302
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	342			63			731	701	63	696	662	302
tC, single (s)	4.1			4.2			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	89			99			85	91	98	84	92	92
cM capacity (veh/h)	1228			1490			255	322	953	298	340	742
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	198	355	86	130								
Volume Left	135	13	37	47								
Volume Right	0	79	21	56								
cSH	1228	1490	339	416								
Volume to Capacity	0.11	0.01	0.25	0.31								
Queue Length 95th (m)	3.0	0.2	7.9	10.5								
Control Delay (s)	6.0	0.4	19.2	17.5								
Lane LOS	A	A	C	C								
Approach Delay (s)	6.0	0.4	19.2	17.5								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.8									
Intersection Capacity Utilization			44.9%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 11: County Road 6 & Kildare Ave

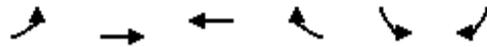
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	42	176	14	84	196
Future Volume (Veh/h)	11	42	176	14	84	196
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	12	48	200	16	95	223
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	621	208			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	621	208			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	94			93	
cM capacity (veh/h)	423	830			1360	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	60	216	318			
Volume Left	12	0	95			
Volume Right	48	16	0			
cSH	696	1700	1360			
Volume to Capacity	0.09	0.13	0.07			
Queue Length 95th (m)	2.3	0.0	1.8			
Control Delay (s)	10.7	0.0	2.8			
Lane LOS	B		A			
Approach Delay (s)	10.7	0.0	2.8			
Approach LOS	B					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			38.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Bath Rd & County Road 6



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	59	506	568	131	124	84
Future Volume (Veh/h)	59	506	568	131	124	84
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	63	544	611	141	133	90
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	752				1281	611
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	752				1281	611
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				21	82
cM capacity (veh/h)	867				169	494
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	63	544	611	141	223	
Volume Left	63	0	0	0	133	
Volume Right	0	0	0	141	90	
cSH	867	1700	1700	1700	231	
Volume to Capacity	0.07	0.32	0.36	0.08	0.97	
Queue Length 95th (m)	1.9	0.0	0.0	0.0	69.5	
Control Delay (s)	9.5	0.0	0.0	0.0	96.0	
Lane LOS	A				F	
Approach Delay (s)	1.0		0.0		96.0	
Approach LOS					F	
Intersection Summary						
Average Delay			13.9			
Intersection Capacity Utilization			55.2%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



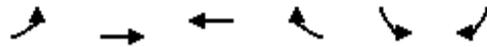
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘↙	
Traffic Volume (veh/h)	2	651	516	32	17	5
Future Volume (Veh/h)	2	651	516	32	17	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	715	567	35	19	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	602				1304	584
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	602				1304	584
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				89	99
cM capacity (veh/h)	985				167	515
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	717	602	24			
Volume Left	2	0	19			
Volume Right	0	35	5			
cSH	985	1700	194			
Volume to Capacity	0.00	0.35	0.12			
Queue Length 95th (m)	0.0	0.0	3.3			
Control Delay (s)	0.1	0.0	26.2			
Lane LOS	A		D			
Approach Delay (s)	0.1	0.0	26.2			
Approach LOS			D			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		45.9%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Background PM - HGS

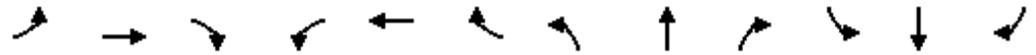
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	188	185	57	209	69	51	85	31	99	124	46
Future Volume (vph)	12	188	185	57	209	69	51	85	31	99	124	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	13	207	203	63	230	76	56	93	34	109	136	51
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	423	369	183	296								
Volume Left (vph)	13	63	56	109								
Volume Right (vph)	203	76	34	51								
Hadj (s)	-0.22	0.06	-0.01	0.04								
Departure Headway (s)	6.4	6.8	7.5	7.1								
Degree Utilization, x	0.75	0.69	0.38	0.59								
Capacity (veh/h)	531	498	407	455								
Control Delay (s)	26.2	23.7	15.0	19.7								
Approach Delay (s)	26.2	23.7	15.0	19.7								
Approach LOS	D	C	B	C								
Intersection Summary												
Delay			22.4									
Level of Service			C									
Intersection Capacity Utilization			70.9%	ICU Level of Service	C							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	
Traffic Volume (veh/h)	54	499	474	5	18	112
Future Volume (Veh/h)	54	499	474	5	18	112
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	64	594	564	6	21	133
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	570				1286	564
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	570				1286	564
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				88	75
cM capacity (veh/h)	988				171	525
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	658	564	6	154		
Volume Left	64	0	0	21		
Volume Right	0	0	6	133		
cSH	988	1700	1700	410		
Volume to Capacity	0.06	0.33	0.00	0.38		
Queue Length 95th (m)	1.7	0.0	0.0	13.7		
Control Delay (s)	1.7	0.0	0.0	19.0		
Lane LOS	A			C		
Approach Delay (s)	1.7	0.0		19.0		
Approach LOS				C		
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			72.1%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	16	332	10	248	494	60	7	4	204	41	13	17
Future Volume (veh/h)	16	332	10	248	494	60	7	4	204	41	13	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	17	353	11	264	526	64	7	4	217	44	14	18
Approach Volume (veh/h)		381			854			228				76
Crossing Volume (veh/h)		322			28			414				797
High Capacity (veh/h)		1075			1355			1000				735
High v/c (veh/h)		0.35			0.63			0.23				0.10
Low Capacity (veh/h)		881			1134			813				580
Low v/c (veh/h)		0.43			0.75			0.28				0.13
Intersection Summary												
Maximum v/c High					0.63							
Maximum v/c Low					0.75							
Intersection Capacity Utilization			92.9%		ICU Level of Service				F			

HCM Unsignalized Intersection Capacity Analysis

42: Coronation Blvd & Amherst Dr

Amherstview Secondary Plan
2046 Background PM - HGS

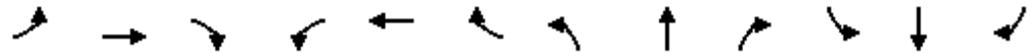


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	282	174	155	32	44	217
Future Volume (Veh/h)	282	174	155	32	44	217
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	357	220	196	41	56	275
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)	357					
pX, platoon unblocked						
vC, conflicting volume	626	194	331			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	626	194	331			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	5	74	84			
cM capacity (veh/h)	377	851	1234			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	577	237	331			
Volume Left	357	196	0			
Volume Right	220	0	275			
cSH	478	1234	1700			
Volume to Capacity	1.21	0.16	0.19			
Queue Length 95th (m)	177.0	4.5	0.0			
Control Delay (s)	138.1	7.2	0.0			
Lane LOS	F	A				
Approach Delay (s)	138.1	7.2	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay	71.1					
Intersection Capacity Utilization	62.2%			ICU Level of Service	B	
Analysis Period (min)	15					



SYNCHRO ANALYSIS – ULTIMATE CONDITIONS
HIGH GROWTH SCENARIO
LAND USE CONCEPT 1

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	0	60	22	0	198	34	741	19	38	488	37
Future Volume (vph)	82	0	60	22	0	198	34	741	19	38	488	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	6%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	67	0	24	220	0	38	844	0	42	583	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	15.0	39.0		24.0	24.0		81.0	81.0		81.0	81.0	
Total Split (%)	12.5%	32.5%		20.0%	20.0%		67.5%	67.5%		67.5%	67.5%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	23.3	23.3		9.2	9.2		87.5	87.5		87.5	87.5	
Actuated g/C Ratio	0.19	0.19		0.08	0.08		0.73	0.73		0.73	0.73	
v/c Ratio	0.44	0.11		0.23	0.65		0.07	0.62		0.12	0.45	
Control Delay	46.0	0.4		55.0	14.1		6.4	11.7		7.2	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.0	0.4		55.0	14.1		6.4	11.7		7.2	8.6	
LOS	D	A		D	B		A	B		A	A	
Approach Delay		26.7			18.1			11.4			8.5	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	19.5	0.0		5.8	0.0		2.3	88.3		2.6	48.9	
Queue Length 95th (m)	31.4	0.0		13.6	18.7		7.7	172.4		8.9	96.6	
Internal Link Dist (m)		102.5			98.8			385.7			417.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	217	722		220	460		538	1353		350	1299	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.09		0.11	0.48		0.07	0.62		0.12	0.45	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 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: 0.65

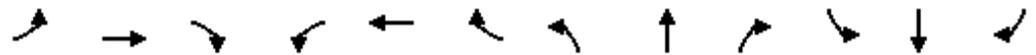
Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



Timings
9: County Road 6 & Amherst Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	49	60	17	34	431	34	289	17	269	223	37
Future Volume (vph)	82	49	60	17	34	431	34	289	17	269	223	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	9%	0%	3%	0%	2%	0%	7%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	121	0	19	517	0	38	340	0	299	289	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	23.3		23.3	23.3		22.7	22.7		10.5	22.7	
Total Split (s)	10.6	34.6		24.0	24.0		26.4	26.4		19.0	45.4	
Total Split (%)	13.3%	43.3%		30.0%	30.0%		33.0%	33.0%		23.8%	56.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.5	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		2.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		5.5	4.7	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)	19.0	19.0		10.5	10.5		34.9	34.9		51.0	51.8	
Actuated g/C Ratio	0.24	0.24		0.13	0.13		0.44	0.44		0.64	0.65	
v/c Ratio	0.42	0.26		0.12	0.83		0.08	0.42		0.51	0.25	
Control Delay	26.9	11.5		28.8	16.5		19.5	21.1		11.7	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.9	11.5		28.8	16.5		19.5	21.1		11.7	8.0	
LOS	C	B		C	B		B	C		B	A	
Approach Delay		18.1			16.9			20.9			9.9	
Approach LOS		B			B			C			A	
Queue Length 50th (m)	11.8	6.8		2.8	5.7		3.4	35.8		18.3	15.8	
Queue Length 95th (m)	19.0	16.1		7.7	34.3		12.1	76.6		45.3	39.9	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	219	697		288	750		482	809		616	1179	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.17		0.07	0.69		0.08	0.42		0.49	0.25	

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: 0.83

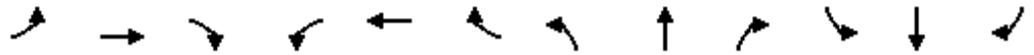
Timings
 9: County Road 6 & Amherst Dr

Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: County Road 6 & Amherst Dr



Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	16	60	34	29	106	34	227	6	26	257	37
Future Volume (vph)	82	16	60	34	29	106	34	227	6	26	257	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	0%	11%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	82	0	37	145	0	37	250	0	28	316	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.7	22.7		22.7	22.7	
Total Split (s)	23.0	23.0		23.0	23.0		38.0	38.0		38.0	38.0	
Total Split (%)	37.7%	37.7%		37.7%	37.7%		62.3%	62.3%		62.3%	62.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	10.4	10.4		10.4	10.4		44.3	44.3		44.3	44.3	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.73	0.73		0.73	0.73	
v/c Ratio	0.41	0.24		0.16	0.38		0.05	0.19		0.04	0.23	
Control Delay	26.6	9.4		20.8	9.7		5.0	4.9		5.0	4.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.6	9.4		20.8	9.7		5.0	4.9		5.0	4.9	
LOS	C	A		C	A		A	A		A	A	
Approach Delay		18.3			12.0			4.9			4.9	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	9.6	1.7		3.9	3.2		1.1	8.1		0.8	10.0	
Queue Length 95th (m)	18.0	9.8		9.2	13.9		5.4	24.4		4.4	29.5	
Internal Link Dist (m)		246.5			224.0			540.0			282.6	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	382	552		405	583		785	1324		751	1359	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.15		0.09	0.25		0.05	0.19		0.04	0.23	

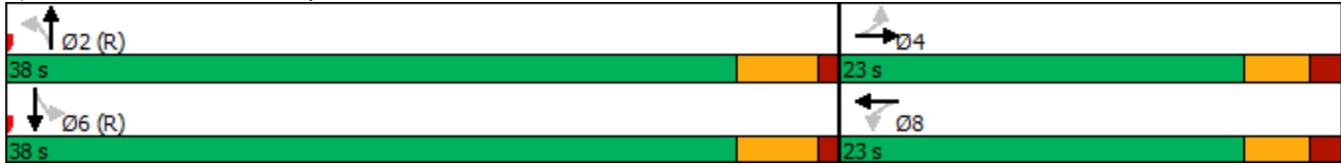
Intersection Summary

Cycle Length: 61
 Actuated Cycle Length: 61
 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: 0.41

Timings
 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 47.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	405	337	139	189	161
Future Volume (vph)	125	405	337	139	189	161
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	0%	3%	3%	6%	7%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	145	471	392	162	220	187
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		7	
Permitted Phases	2			6		7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	27.0	27.0	34.0	34.0	22.7	22.7
Total Split (s)	54.0	54.0	54.0	54.0	36.0	36.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	63.6	63.6	63.6	63.6	17.0	17.0
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.19	0.19
v/c Ratio	0.22	0.35	0.30	0.14	0.69	0.43
Control Delay	6.6	6.8	6.4	1.3	44.5	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	6.8	6.4	1.3	44.5	7.6
LOS	A	A	A	A	D	A
Approach Delay		6.7	4.9		27.6	
Approach LOS		A	A		C	
Queue Length 50th (m)	7.8	28.5	22.6	0.0	37.6	0.0
Queue Length 95th (m)	18.4	52.2	42.4	5.8	53.5	13.8
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	655	1342	1303	1155	592	646
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.30	0.14	0.37	0.29

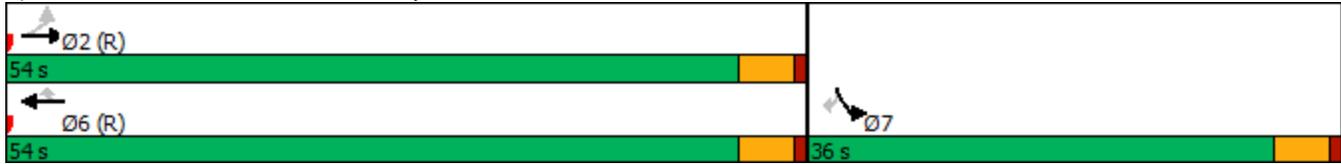
Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69

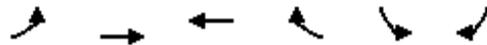
Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
38: Bath Rd & Coronation Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	13	1317	619	73	220	17
Future Volume (vph)	13	1317	619	73	220	17
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	33%	2%	2%	0%	3%	13%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	1497	703	83	269	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	27.0	27.0	34.0	34.0	25.5	
Total Split (s)	94.5	94.5	94.5	94.5	25.5	
Total Split (%)	78.8%	78.8%	78.8%	78.8%	21.3%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	87.5	87.5	87.5	87.5	19.0	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.16	
v/c Ratio	0.04	1.10	0.52	0.07	0.97	
Control Delay	4.9	76.1	8.7	1.1	97.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.9	76.1	8.7	1.1	97.3	
LOS	A	E	A	A	F	
Approach Delay		75.4	7.9		97.3	
Approach LOS		E	A		F	
Queue Length 50th (m)	0.9	~421.8	66.5	0.0	66.4	
Queue Length 95th (m)	2.9	#487.3	88.2	3.8	#118.0	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0	50.0	
Base Capacity (vph)	349	1358	1358	1200	277	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.04	1.10	0.52	0.07	0.97	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.10

Timings
42: Coronation Blvd & Amherst Dr



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	285	179	111	27	34	227
Future Volume (vph)	285	179	111	27	34	227
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	7%	4%	5%	23%	25%	7%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	361	227	141	34	43	287
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4	4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.7	23.7	23.7	23.7	23.7	23.7
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	15.6	15.6	25.4	25.4	25.4	25.4
Actuated g/C Ratio	0.31	0.31	0.51	0.51	0.51	0.51
v/c Ratio	0.69	0.35	0.21	0.04	0.06	0.32
Control Delay	21.6	3.6	9.4	8.2	8.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	3.6	9.4	8.2	8.3	2.6
LOS	C	A	A	A	A	A
Approach Delay	14.6			9.2	3.4	
Approach LOS	B			A	A	
Queue Length 50th (m)	28.7	0.0	6.6	1.5	1.9	0.0
Queue Length 95th (m)	36.6	6.7	15.6	5.1	6.0	7.2
Internal Link Dist (m)	267.3			332.6	2430.7	
Turn Bay Length (m)		50.0	50.0			50.0
Base Capacity (vph)	691	770	670	785	773	908
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.29	0.21	0.04	0.06	0.32

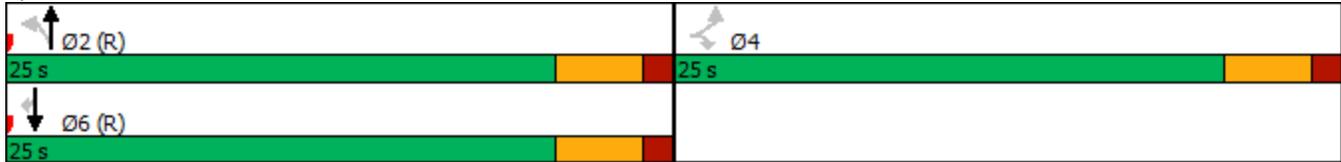
Intersection Summary

Cycle Length: 50
 Actuated Cycle Length: 50
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69

Timings
 42: Coronation Blvd & Amherst Dr

Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 36.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 42: Coronation Blvd & Amherst Dr



Timings
46: Taylor Kidd Blvd & William Henderson Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	42	36	0	71	0	84	0	0	0	0	0
Future Volume (vph)	0	42	36	0	71	0	84	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	4%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	79	0	93	0	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm					
Protected Phases		2			6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.1	24.1		30.0	30.0	30.0	23.5	23.5		23.5	23.5	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	24.0	24.0		24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	4.1	4.1		4.1	4.1	4.1	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0			0.0	
Total Lost Time (s)	6.1	6.1			6.1	6.1	5.3	5.3			5.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		42.7			42.7		9.2					
Actuated g/C Ratio		0.71			0.71		0.15					
v/c Ratio		0.07			0.06		0.42					
Control Delay		3.1			4.7		27.9					
Queue Delay		0.0			0.0		0.0					
Total Delay		3.1			4.7		27.9					
LOS		A			A		C					
Approach Delay		3.1			4.7		27.9					
Approach LOS		A			A		C					
Queue Length 50th (m)		1.6			2.7		9.9					
Queue Length 95th (m)		6.5			7.9		20.4					
Internal Link Dist (m)		164.9			216.8		1143.6				202.9	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1244			1289		448					
Starvation Cap Reductn		0			0		0					
Spillback Cap Reductn		0			0		0					
Storage Cap Reductn		0			0		0					
Reduced v/c Ratio		0.07			0.06		0.21					

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42

Timings
 46: Taylor Kidd Blvd & William Henderson Dr

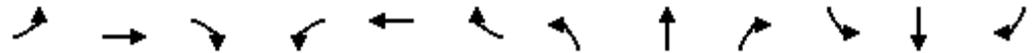
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 18.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 46: Taylor Kidd Blvd & William Henderson Dr



HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate AM HGS_Option 1 Concept



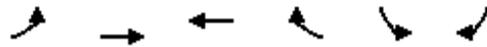
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	21	312	16	2	324	27	79	12	20	45	13	101
Future Volume (Veh/h)	21	312	16	2	324	27	79	12	20	45	13	101
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	25	376	19	2	390	33	95	14	24	54	16	122
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246										
pX, platoon unblocked				0.97			0.97	0.97	0.97	0.97	0.97	0.97
vC, conflicting volume	423			395			976	862	386	877	856	406
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	423			362			960	843	352	858	836	406
tC, single (s)	4.1			4.6			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			46	95	96	78	94	81
cM capacity (veh/h)	1147			946			177	287	616	246	289	649
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	420	425	133	192								
Volume Left	25	2	95	54								
Volume Right	19	33	24	122								
cSH	1147	946	212	415								
Volume to Capacity	0.02	0.00	0.63	0.46								
Queue Length 95th (m)	0.5	0.1	29.3	19.0								
Control Delay (s)	0.7	0.1	46.7	20.9								
Lane LOS	A	A	E	C								
Approach Delay (s)	0.7	0.1	46.7	20.9								
Approach LOS			E	C								
Intersection Summary												
Average Delay			9.0									
Intersection Capacity Utilization			51.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 12: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
 2046 Ultimate AM HGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	401	26	94	544	7	10	3	196	3	3	0
Future Volume (Veh/h)	7	401	26	94	544	7	10	3	196	3	3	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	9	542	35	127	735	9	14	4	265	4	4	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	744			577			1573	1576	560	1838	1588	740
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744			577			1573	1576	560	1838	1588	740
tC, single (s)	4.1			4.1			7.8	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.1	4.0	3.4	3.5	4.0	3.3
p0 queue free %	99			87			74	96	49	84	96	100
cM capacity (veh/h)	873			987			55	96	519	25	94	420
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	586	871	283	8								
Volume Left	9	127	14	4								
Volume Right	35	9	265	0								
cSH	873	987	350	39								
Volume to Capacity	0.01	0.13	0.81	0.20								
Queue Length 95th (m)	0.3	3.5	55.4	5.2								
Control Delay (s)	0.3	3.1	47.0	118.3								
Lane LOS	A	A	E	F								
Approach Delay (s)	0.3	3.1	47.0	118.3								
Approach LOS			E	F								
Intersection Summary												
Average Delay			9.8									
Intersection Capacity Utilization			80.2%		ICU Level of Service				D			
Analysis Period (min)			15									

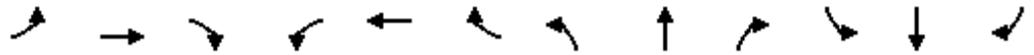
HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↗	↖		↘	
Traffic Volume (veh/h)	4	478	472	6	17	0
Future Volume (Veh/h)	4	478	472	6	17	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	514	508	6	18	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	514				1033	511
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	514				1033	511
tC, single (s)	5.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.7	3.3
p0 queue free %	99				92	100
cM capacity (veh/h)	694				232	567
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	518	514	18			
Volume Left	4	0	18			
Volume Right	0	6	0			
cSH	694	1700	232			
Volume to Capacity	0.01	0.30	0.08			
Queue Length 95th (m)	0.1	0.0	2.0			
Control Delay (s)	0.2	0.0	21.8			
Lane LOS	A		C			
Approach Delay (s)	0.2	0.0	21.8			
Approach LOS			C			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			38.3%		ICU Level of Service	A
Analysis Period (min)			15			

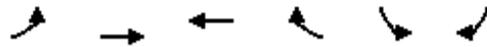
HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate AM HGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	271	79	30	238	48	100	63	24	14	17	8
Future Volume (vph)	7	271	79	30	238	48	100	63	24	14	17	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	298	87	33	262	53	110	69	26	15	19	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	393	348	205	43								
Volume Left (vph)	8	33	110	15								
Volume Right (vph)	87	53	26	9								
Hadj (s)	-0.04	0.11	0.06	-0.06								
Departure Headway (s)	5.2	5.4	6.0	6.3								
Degree Utilization, x	0.57	0.52	0.34	0.07								
Capacity (veh/h)	663	640	541	463								
Control Delay (s)	14.7	14.0	12.0	9.8								
Approach Delay (s)	14.7	14.0	12.0	9.8								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay			13.7									
Level of Service			B									
Intersection Capacity Utilization			54.8%	ICU Level of Service	A							
Analysis Period (min)			15									

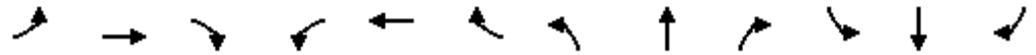
HCM Unsignalized Intersection Capacity Analysis
 35: Bath Rd & Jim Snow Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↗	↘	↘
Traffic Volume (veh/h)	93	463	454	18	4	60
Future Volume (Veh/h)	93	463	454	18	4	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	99	493	483	19	4	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	502				1174	483
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	502				1174	483
tC, single (s)	4.2				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	90				98	89
cM capacity (veh/h)	1022				193	566
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	592	483	19	68		
Volume Left	99	0	0	4		
Volume Right	0	0	19	64		
cSH	1022	1700	1700	508		
Volume to Capacity	0.10	0.28	0.01	0.13		
Queue Length 95th (m)	2.6	0.0	0.0	3.7		
Control Delay (s)	2.5	0.0	0.0	13.2		
Lane LOS	A			B		
Approach Delay (s)	2.5	0.0		13.2		
Approach LOS				B		
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			67.3%	ICU Level of Service		C
Analysis Period (min)			15			

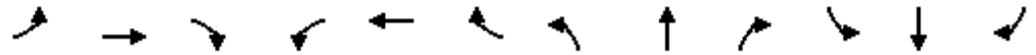
HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate AM HGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	9	775	4	137	428	15	11	2	279	13	6	6
Future Volume (veh/h)	9	775	4	137	428	15	11	2	279	13	6	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	11	923	5	163	510	18	13	2	332	15	7	7
Approach Volume (veh/h)	939				691				347		29	
Crossing Volume (veh/h)	185				26				949		686	
High Capacity (veh/h)	1198				1357				649		804	
High v/c (veh/h)	0.78				0.51				0.53		0.04	
Low Capacity (veh/h)	992				1136				506		640	
Low v/c (veh/h)	0.95				0.61				0.69		0.05	
Intersection Summary												
Maximum v/c High					0.78							
Maximum v/c Low					0.95							
Intersection Capacity Utilization			100.5%		ICU Level of Service						G	

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	0	41	14	0	67	55	431	45	138	796	91
Future Volume (vph)	46	0	41	14	0	67	55	431	45	138	796	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	46	0	16	74	0	61	529	0	153	985	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		22.7	22.7		22.7	22.7	
Total Split (s)	23.3	23.3		23.3	23.3		67.5	67.5		67.5	67.5	
Total Split (%)	25.7%	25.7%		25.7%	25.7%		74.3%	74.3%		74.3%	74.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	10.0	10.0		10.0	10.0		74.6	74.6		74.6	74.6	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.82	0.82		0.82	0.82	
v/c Ratio	0.34	0.13		0.11	0.13		0.17	0.35		0.22	0.64	
Control Delay	41.8	0.7		34.9	0.5		4.6	3.9		4.0	7.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.8	0.7		34.9	0.5		4.6	3.9		4.0	7.3	
LOS	D	A		C	A		A	A		A	A	
Approach Delay		22.3			6.6			4.0			6.9	
Approach LOS		C			A			A			A	
Queue Length 50th (m)	9.0	0.0		2.7	0.0		1.9	19.2		5.0	54.2	
Queue Length 95th (m)	18.3	0.0		7.9	0.0		8.5	50.8		17.0	147.8	
Internal Link Dist (m)		102.5			98.8			385.7			417.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	278	496		285	688		363	1513		700	1539	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.09		0.06	0.11		0.17	0.35		0.22	0.64	

Intersection Summary

Cycle Length: 90.8
 Actuated Cycle Length: 90.8
 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: 0.64

Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



Timings
9: County Road 6 & Amherst Dr

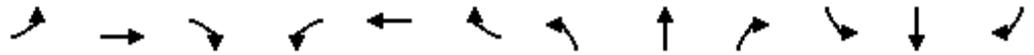


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	49	41	37	50	270	55	225	62	422	329	91
Future Volume (vph)	46	49	41	37	50	270	55	225	62	422	329	91
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	103	0	43	367	0	63	330	0	485	483	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		22.7	22.7		10.5	22.7	
Total Split (s)	23.3	23.3		23.3	23.3		22.7	22.7		29.0	51.7	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		30.3%	30.3%		38.7%	68.9%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.5	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		2.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		5.5	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)	12.9	12.9		12.9	12.9		31.7	31.7		52.1	52.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.42	0.42		0.69	0.71	
v/c Ratio	0.52	0.30		0.19	0.68		0.16	0.43		0.65	0.37	
Control Delay	45.0	16.9		26.0	12.3		20.7	20.9		10.2	5.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.0	16.9		26.0	12.3		20.7	20.9		10.2	5.8	
LOS	D	B		C	B		C	C		B	A	
Approach Delay		26.4			13.8			20.9			8.0	
Approach LOS		C			B			C			A	
Queue Length 50th (m)	7.2	7.2		5.5	7.3		5.6	31.4		25.6	21.8	
Queue Length 95th (m)	16.5	17.5		12.5	26.2		17.6	#74.8		50.3	44.5	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	147	479		328	648		391	774		857	1306	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.22		0.13	0.57		0.16	0.43		0.57	0.37	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68

Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	25	41	11	20	42	55	285	14	84	278	91
Future Volume (vph)	46	25	41	11	20	42	55	285	14	84	278	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	75	0	13	71	0	63	340	0	95	419	0
Turn Type	Perm	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases		4!		8!	8			2				6
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.7	22.7		22.7	22.7	
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	10.0	10.0		10.0	10.0		73.7	73.7		73.7	73.7	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.82	0.82		0.82	0.82	
v/c Ratio	0.35	0.32		0.07	0.31		0.08	0.23		0.11	0.28	
Control Delay	41.4	20.0		33.3	19.0		3.4	3.3		3.3	3.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.4	20.0		33.3	19.0		3.4	3.3		3.3	3.3	
LOS	D	B		C	B		A	A		A	A	
Approach Delay		28.7			21.2			3.3				3.3
Approach LOS		C			C			A				A
Queue Length 50th (m)	9.1	4.8		2.2	3.9		1.8	11.0		2.8	12.9	
Queue Length 95th (m)	17.9	15.3		6.8	14.3		7.0	29.2		9.7	34.4	
Internal Link Dist (m)		246.5			224.0			540.0				282.6
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	337	465		451	454		797	1503		857	1506	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.16		0.03	0.16		0.08	0.23		0.11	0.28	

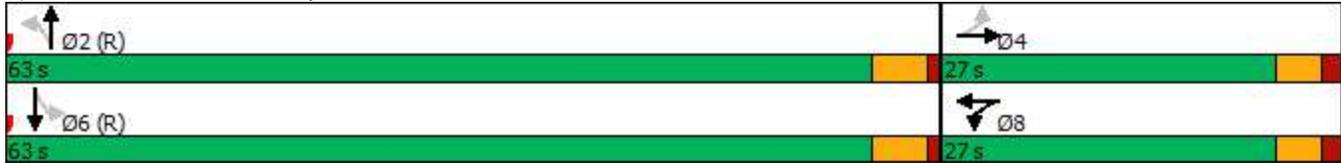
Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 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: 0.35

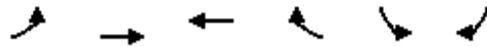
Timings 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 45.1%	ICU Level of Service A
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑	↗	↖	↗
Traffic Volume (vph)	139	506	568	216	171	159
Future Volume (vph)	139	506	568	216	171	159
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	3%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	544	611	232	184	171
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		7	
Permitted Phases	2			6		7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	27.0	27.0	34.0	34.0	22.7	22.7
Total Split (s)	63.0	63.0	63.0	63.0	27.0	27.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	66.0	66.0	66.0	66.0	14.6	14.6
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.16	0.16
v/c Ratio	0.28	0.40	0.44	0.19	0.64	0.43
Control Delay	6.4	6.1	6.5	1.1	44.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	6.1	6.5	1.1	44.5	10.2
LOS	A	A	A	A	D	B
Approach Delay		6.2	5.0		28.0	
Approach LOS		A	A		C	
Queue Length 50th (m)	7.5	30.8	36.1	0.0	32.4	0.0
Queue Length 95th (m)	19.6	59.6	69.2	6.7	51.7	18.7
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	534	1366	1393	1212	438	520
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40	0.44	0.19	0.42	0.33

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64

Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
38: Bath Rd & Coronation Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	842	1078	210	165	27
Future Volume (vph)	15	842	1078	210	165	27
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	11%	2%	1%	3%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	868	1111	216	198	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	
Minimum Split (s)	27.0	27.0	34.0	34.0	25.5	
Total Split (s)	94.5	94.5	94.5	94.5	25.5	
Total Split (%)	78.8%	78.8%	78.8%	78.8%	21.3%	
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	89.4	89.4	89.4	89.4	17.1	
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.14	
v/c Ratio	0.08	0.63	0.79	0.18	0.77	
Control Delay	5.9	10.1	15.5	0.9	67.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.9	10.1	15.5	0.9	67.9	
LOS	A	B	B	A	E	
Approach Delay		10.0	13.1		67.9	
Approach LOS		B	B		E	
Queue Length 50th (m)	0.9	95.2	158.9	0.0	45.7	
Queue Length 95th (m)	3.3	132.9	230.7	6.1	#76.2	
Internal Link Dist (m)		189.7	190.1		332.6	
Turn Bay Length (m)	100.0			80.0	50.0	
Base Capacity (vph)	182	1388	1401	1223	285	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.63	0.79	0.18	0.69	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79

Timings
42: Coronation Blvd & Amherst Dr



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	312	193	176	32	44	245
Future Volume (vph)	312	193	176	32	44	245
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	2%	1%	1%	25%	0%	4%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	395	244	223	41	56	310
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4	4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	15.9	15.9	25.1	25.1	25.1	25.1
Actuated g/C Ratio	0.32	0.32	0.50	0.50	0.50	0.50
v/c Ratio	0.70	0.36	0.33	0.05	0.06	0.33
Control Delay	21.5	3.5	10.6	8.4	8.2	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	3.5	10.6	8.4	8.2	2.6
LOS	C	A	B	A	A	A
Approach Delay	14.6			10.2	3.5	
Approach LOS	B			B	A	
Queue Length 50th (m)	31.3	0.0	11.5	1.8	2.5	0.0
Queue Length 95th (m)	39.7	6.8	23.7	5.8	7.0	7.4
Internal Link Dist (m)	267.3			332.6	2430.7	
Turn Bay Length (m)		50.0	50.0			50.0
Base Capacity (vph)	725	799	679	762	953	933
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.31	0.33	0.05	0.06	0.33

Intersection Summary

Cycle Length: 50
 Actuated Cycle Length: 50
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70

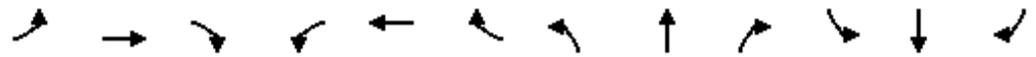
Timings
 42: Coronation Blvd & Amherst Dr

Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 41.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 42: Coronation Blvd & Amherst Dr



Timings
46: Taylor Kidd Blvd & William Henderson Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	67	73	0	28	0	47	0	0	0	0	0
Future Volume (vph)	0	67	73	0	28	0	47	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	0	31	0	52	0	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm					
Protected Phases		2			6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.1	24.1		24.1	24.1	24.1	23.5	23.5		23.5	23.5	
Total Split (s)	36.4	36.4		36.4	36.4	36.4	23.6	23.6		23.6	23.6	
Total Split (%)	60.7%	60.7%		60.7%	60.7%	60.7%	39.3%	39.3%		39.3%	39.3%	
Yellow Time (s)	4.1	4.1		4.1	4.1	4.1	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0			0.0	
Total Lost Time (s)	6.1	6.1			6.1	6.1	5.3	5.3			5.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		47.8			47.8		7.7					
Actuated g/C Ratio		0.80			0.80		0.13					
v/c Ratio		0.11			0.02		0.28					
Control Delay		2.2			3.6		26.9					
Queue Delay		0.0			0.0		0.0					
Total Delay		2.2			3.6		26.9					
LOS		A			A		C					
Approach Delay		2.2			3.6			26.9				
Approach LOS		A			A			C				
Queue Length 50th (m)		2.2			0.9		5.6					
Queue Length 95th (m)		8.1			3.4		13.9					
Internal Link Dist (m)		164.9			216.8			1143.6			202.9	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1380			1443		438					
Starvation Cap Reductn		0			0		0					
Spillback Cap Reductn		0			0		0					
Storage Cap Reductn		0			0		0					
Reduced v/c Ratio		0.11			0.02		0.12					

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28

Timings
 46: Taylor Kidd Blvd & William Henderson Dr

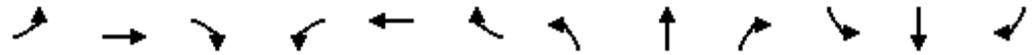
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 21.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 46: Taylor Kidd Blvd & William Henderson Dr



HCM Unsignalized Intersection Capacity Analysis
 1: County Road 6/County Rd 6 & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate PM HGS_Option 1 Concept



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	24	358	101	392	217	99	66	327	181	43	520	15
Future Volume (veh/h)	24	358	101	392	217	99	66	327	181	43	520	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	389	110	426	236	108	72	355	197	47	565	16
Approach Volume (veh/h)		525			770			624			628	
Crossing Volume (veh/h)		1038			453			462			734	
High Capacity (veh/h)		603			969			962			773	
High v/c (veh/h)		0.87			0.79			0.65			0.81	
Low Capacity (veh/h)		466			786			780			613	
Low v/c (veh/h)		1.13			0.98			0.80			1.02	
Intersection Summary												
Maximum v/c High											0.87	
Maximum v/c Low											1.13	
Intersection Capacity Utilization				117.2%			ICU Level of Service				H	

HCM Unsignalized Intersection Capacity Analysis
 10: Pratt Dr & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate PM HGS_Option 1 Concept

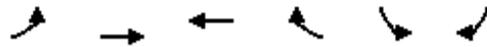
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	105	0	12	284	70	33	25	19	42	24	50
Future Volume (Veh/h)	120	105	0	12	284	70	33	25	19	42	24	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	135	118	0	13	319	79	37	28	21	47	27	56
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246										
pX, platoon unblocked												
vC, conflicting volume	398			118			842	812	118	808	772	358
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	398			118			842	812	118	808	772	358
tC, single (s)	4.1			4.2			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	88			99			82	90	98	81	91	92
cM capacity (veh/h)	1172			1422			210	276	887	247	291	690
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	253	411	86	130								
Volume Left	135	13	37	47								
Volume Right	0	79	21	56								
cSH	1172	1422	285	357								
Volume to Capacity	0.12	0.01	0.30	0.36								
Queue Length 95th (m)	3.1	0.2	9.9	13.0								
Control Delay (s)	5.0	0.3	23.0	20.8								
Lane LOS	A	A	C	C								
Approach Delay (s)	5.0	0.3	23.0	20.8								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			50.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 12: Jim Snow Dr & Taylor Kidd Boulevard

Amherstview Secondary Plan
 2046 Ultimate PM HGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	427	5	59	293	2	29	0	70	7	0	5
Future Volume (Veh/h)	0	427	5	59	293	2	29	0	70	7	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	534	6	74	366	2	36	0	88	9	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	368			540			1058	1053	537	1140	1055	367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	368			540			1058	1053	537	1140	1055	367
tC, single (s)	4.1			4.1			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			93			79	100	84	94	100	99
cM capacity (veh/h)	1202			1039			172	212	534	142	211	683
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	540	442	124	15								
Volume Left	0	74	36	9								
Volume Right	6	2	88	6								
cSH	1202	1039	331	208								
Volume to Capacity	0.00	0.07	0.37	0.07								
Queue Length 95th (m)	0.0	1.8	13.5	1.9								
Control Delay (s)	0.0	2.1	22.2	23.7								
Lane LOS		A	C	C								
Approach Delay (s)	0.0	2.1	22.2	23.7								
Approach LOS			C	C								
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			57.7%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 26: Bath Rd & Bayview Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↶		↶	
Traffic Volume (veh/h)	2	730	591	32	17	5
Future Volume (Veh/h)	2	730	591	32	17	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	802	649	35	19	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	684				1472	666
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	684				1472	666
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				85	99
cM capacity (veh/h)	919				131	463
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total	804	684	24			
Volume Left	2	0	19			
Volume Right	0	35	5			
cSH	919	1700	154			
Volume to Capacity	0.00	0.40	0.16			
Queue Length 95th (m)	0.1	0.0	4.3			
Control Delay (s)	0.1	0.0	32.7			
Lane LOS	A		D			
Approach Delay (s)	0.1	0.0	32.7			
Approach LOS			D			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			50.0%		ICU Level of Service	A
Analysis Period (min)			15			

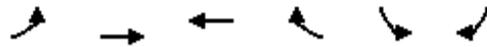
HCM Unsignalized Intersection Capacity Analysis
 31: Speers Blvd & Amherst Dr

Amherstview Secondary Plan
 2046 Ultimate PM HGS_Option 1 Concept

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	237	185	57	259	69	51	85	31	99	124	46
Future Volume (vph)	12	237	185	57	259	69	51	85	31	99	124	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	13	260	203	63	285	76	56	93	34	109	136	51
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	476	424	183	296								
Volume Left (vph)	13	63	56	109								
Volume Right (vph)	203	76	34	51								
Hadj (s)	-0.19	0.08	-0.01	0.04								
Departure Headway (s)	6.9	7.3	8.3	7.8								
Degree Utilization, x	0.91	0.86	0.42	0.64								
Capacity (veh/h)	507	480	394	434								
Control Delay (s)	47.4	40.2	17.2	23.9								
Approach Delay (s)	47.4	40.2	17.2	23.9								
Approach LOS	E	E	C	C								
Intersection Summary												
Delay			36.1									
Level of Service			E									
Intersection Capacity Utilization			74.4%	ICU Level of Service	D							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
35: Bath Rd & Jim Snow Dr

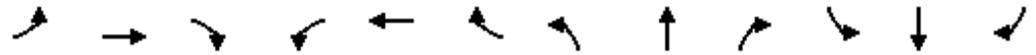
Amherstview Secondary Plan
2046 Ultimate PM HGS_Option 1 Concept



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑	↗	↘	↘
Traffic Volume (veh/h)	54	578	550	5	18	112
Future Volume (Veh/h)	54	578	550	5	18	112
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	64	688	655	6	21	133
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	661				1471	655
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	661				1471	655
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				84	71
cM capacity (veh/h)	913				132	466
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	752	655	6	154		
Volume Left	64	0	0	21		
Volume Right	0	0	6	133		
cSH	913	1700	1700	346		
Volume to Capacity	0.07	0.39	0.00	0.44		
Queue Length 95th (m)	1.8	0.0	0.0	17.6		
Control Delay (s)	1.8	0.0	0.0	23.5		
Lane LOS	A			C		
Approach Delay (s)	1.8	0.0		23.5		
Approach LOS				C		
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			80.3%		ICU Level of Service	D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 39: Coronation Blvd & Taylor Kidd Blvd

Amherstview Secondary Plan
 2046 Ultimate PM HGS_Option 1 Concept

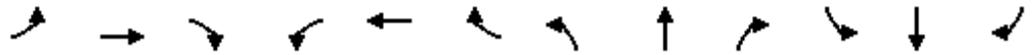


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	16	408	10	277	687	60	7	4	234	41	13	17
Future Volume (veh/h)	16	408	10	277	687	60	7	4	234	41	13	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	17	434	11	295	731	64	7	4	249	44	14	18
Approach Volume (veh/h)	462		1090				260		76			
Crossing Volume (veh/h)	353		28				495		1033			
High Capacity (veh/h)	1049		1355				937		606			
High v/c (veh/h)	0.44		0.80				0.28		0.13			
Low Capacity (veh/h)	858		1134				758		468			
Low v/c (veh/h)	0.54		0.96				0.34		0.16			
Intersection Summary												
Maximum v/c High			0.80									
Maximum v/c Low			0.96									
Intersection Capacity Utilization			110.5%		ICU Level of Service			H				

Timings

31: Speers Blvd & Amherst Dr

11-13-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	7	271	79	30	238	48	100	63	24	14	17	8
Future Volume (vph)	7	271	79	30	238	48	100	63	24	14	17	8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	14%	0%	0%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	348	0	0	205	0	0	43	0
Turn Type	Perm	NA										
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		23.5	23.5		23.5	23.5	
Total Split (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	
Total Split (%)	52.0%	52.0%		52.0%	52.0%		48.0%	48.0%		48.0%	48.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.2	1.2		1.2	1.2	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.3			4.3			4.2			4.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		33.0			33.0			11.5			11.3	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
v/c Ratio		0.34			0.33			0.58			0.11	
Control Delay		6.5			6.7			21.5			11.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.5			6.7			21.5			11.8	
LOS		A			A			C			B	
Approach Delay		6.5			6.7			21.5			11.8	
Approach LOS		A			A			C			B	
Queue Length 50th (m)		14.0			12.7			15.6			2.5	
Queue Length 95th (m)		36.0			33.2			27.9			7.4	
Internal Link Dist (m)		420.8			153.2			160.1			84.2	
Turn Bay Length (m)												
Base Capacity (vph)		1160			1063			598			665	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.33			0.34			0.06	

Intersection Summary

Timings

31: Speers Blvd & Amherst Dr

11-13-2023

Cycle Length: 50

Actuated Cycle Length: 50

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 9.9

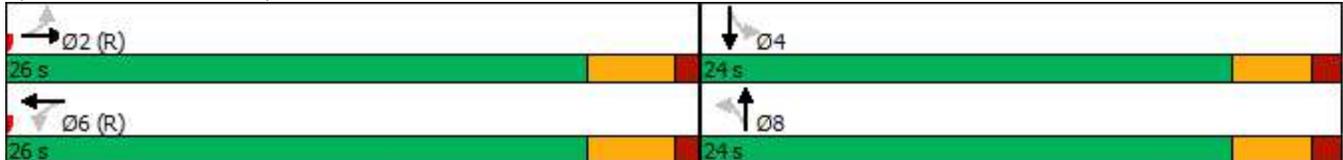
Intersection LOS: A

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 31: Speers Blvd & Amherst Dr



Timings

31: Speers Blvd & Amherst Dr

11-13-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	237	185	57	259	69	51	85	31	99	124	46
Future Volume (vph)	12	237	185	57	259	69	51	85	31	99	124	46
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	14%	0%	0%	0%	13%	7%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	476	0	0	424	0	0	183	0	0	296	0
Turn Type	Perm	NA										
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		23.5	23.5		23.5	23.5	
Total Split (s)	26.5	26.5		26.5	26.5		23.5	23.5		23.5	23.5	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.2	1.2		1.2	1.2	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.3			4.3			4.2			4.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		27.2			27.2			14.3			14.3	
Actuated g/C Ratio		0.54			0.54			0.29			0.29	
v/c Ratio		0.49			0.51			0.40			0.67	
Control Delay		8.8			10.7			13.6			21.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.8			10.7			13.6			21.6	
LOS		A			B			B			C	
Approach Delay		8.8			10.7			13.6			21.6	
Approach LOS		A			B			B			C	
Queue Length 50th (m)		18.6			20.5			11.4			21.8	
Queue Length 95th (m)		47.9			51.0			21.2			36.8	
Internal Link Dist (m)		420.8			153.2			160.1			84.2	
Turn Bay Length (m)												
Base Capacity (vph)		971			834			609			588	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.49			0.51			0.30			0.50	

Intersection Summary

Timings

31: Speers Blvd & Amherst Dr

11-13-2023

Cycle Length: 50

Actuated Cycle Length: 50

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.8

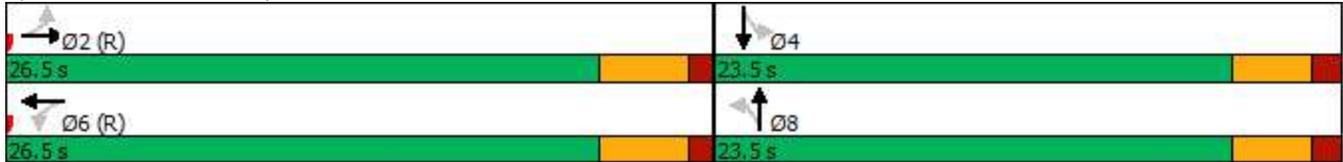
Intersection LOS: B

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

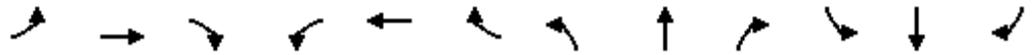
Splits and Phases: 31: Speers Blvd & Amherst Dr





SYNCHRO ANALYSIS – ULTIMATE CONDITIONS
HIGH GROWTH SCENARIO
LAND USE CONCEPT 2&3

Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	0	60	22	0	198	34	797	19	38	512	49
Future Volume (vph)	110	0	60	22	0	198	34	797	19	38	512	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	67	0	24	220	0	38	907	0	42	623	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	17.4	39.9		22.5	22.5		80.1	80.1		80.1	80.1	
Total Split (%)	14.5%	33.3%		18.8%	18.8%		66.8%	66.8%		66.8%	66.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	25.7	25.7		9.5	9.5		85.1	85.1		85.1	85.1	
Actuated g/C Ratio	0.21	0.21		0.08	0.08		0.71	0.71		0.71	0.71	
v/c Ratio	0.51	0.11		0.22	0.69		0.08	0.68		0.15	0.47	
Control Delay	45.8	0.4		54.1	19.9		7.4	14.2		8.9	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.8	0.4		54.1	19.9		7.4	14.2		8.9	9.8	
LOS	D	A		D	B		A	B		A	A	
Approach Delay		29.7			23.3			14.0				9.8
Approach LOS		C			C			B				A
Queue Length 50th (m)	25.9	0.0		5.8	3.1		2.5	108.6		3.0	57.3	
Queue Length 95th (m)	39.3	0.0		13.6	26.4		8.3	206.3		10.0	109.2	
Internal Link Dist (m)		102.5			98.8			385.7				417.9
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	252	714		203	418		483	1343		282	1331	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.09		0.12	0.53		0.08	0.68		0.15	0.47	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 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: 0.69

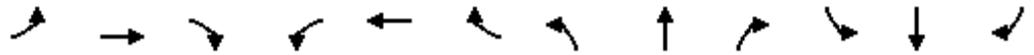
Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 15.2	Intersection LOS: B
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr

 Ø2 (R) 80.1 s	 Ø4 39.9 s	
 Ø6 (R) 80.1 s	 Ø7 17.4 s	 Ø8 22.5 s

Timings
9: County Road 6 & Amherst Dr

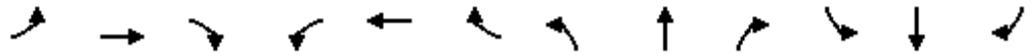


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	49	60	17	34	431	34	317	17	269	235	49
Future Volume (vph)	110	49	60	17	34	431	34	317	17	269	235	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	9%	0%	3%	0%	2%	0%	7%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	121	0	19	517	0	38	371	0	299	315	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	23.3		23.3	23.3		22.7	22.7		10.5	22.7	
Total Split (s)	10.5	33.9		23.4	23.4		24.1	24.1		17.0	41.1	
Total Split (%)	14.0%	45.2%		31.2%	31.2%		32.1%	32.1%		22.7%	54.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)	18.8	18.7		10.3	10.3		31.0	31.0		47.1	47.1	
Actuated g/C Ratio	0.25	0.25		0.14	0.14		0.41	0.41		0.63	0.63	
v/c Ratio	0.53	0.25		0.12	0.82		0.09	0.48		0.53	0.28	
Control Delay	28.2	10.4		26.4	15.6		19.6	23.0		12.3	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.2	10.4		26.4	15.6		19.6	23.0		12.3	8.5	
LOS	C	B		C	B		B	C		B	A	
Approach Delay		19.4			16.0			22.7			10.3	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	14.7	6.3		2.6	5.3		3.4	39.2		17.5	17.0	
Queue Length 95th (m)	22.4	14.9		7.3	32.2		11.7	#92.2		44.0	43.3	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	231	723		298	759		446	765		580	1142	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.17		0.06	0.68		0.09	0.48		0.52	0.28	

Intersection Summary

Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82

Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	16	60	34	29	106	34	227	6	26	257	49
Future Volume (vph)	110	16	60	34	29	106	34	227	6	26	257	49
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	4%	0%	11%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	82	0	37	145	0	37	250	0	28	329	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.7	22.7		22.7	22.7	
Total Split (s)	23.0	23.0		23.0	23.0		38.0	38.0		38.0	38.0	
Total Split (%)	37.7%	37.7%		37.7%	37.7%		62.3%	62.3%		62.3%	62.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	11.4	11.4		11.3	11.3		43.5	43.5		43.5	43.5	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.71	0.71		0.71	0.71	
v/c Ratio	0.50	0.23		0.15	0.36		0.05	0.19		0.04	0.25	
Control Delay	28.4	8.9		19.9	9.1		5.3	5.2		5.3	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.4	8.9		19.9	9.1		5.3	5.2		5.3	5.2	
LOS	C	A		B	A		A	A		A	A	
Approach Delay		20.4			11.3			5.2			5.2	
Approach LOS		C			B			A			A	
Queue Length 50th (m)	12.8	1.7		3.7	3.1		1.2	9.0		0.9	11.5	
Queue Length 95th (m)	23.1	9.8		9.2	13.9		5.4	24.4		4.4	30.3	
Internal Link Dist (m)		246.5			224.0			540.0			282.6	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	383	552		405	583		761	1298		737	1328	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.31	0.15		0.09	0.25		0.05	0.19		0.04	0.25	

Intersection Summary

Cycle Length: 61
 Actuated Cycle Length: 61
 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: 0.50

Timings
 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 50.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	405	337	139	189	161
Future Volume (vph)	125	405	337	139	189	161
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	0%	3%	3%	6%	7%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	145	471	392	162	220	187
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	7	7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	27.0	27.0	34.0	34.0	23.7	23.7
Total Split (s)	36.0	36.0	36.0	36.0	24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	37.6	37.6	37.6	37.6	13.0	13.0
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.22	0.22
v/c Ratio	0.25	0.40	0.34	0.16	0.60	0.40
Control Delay	7.5	7.6	7.2	1.7	27.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	7.6	7.2	1.7	27.4	5.9
LOS	A	A	A	A	C	A
Approach Delay		7.6	5.6		17.6	
Approach LOS		A	A		B	
Queue Length 50th (m)	6.3	22.9	18.2	0.0	23.0	0.0
Queue Length 95th (m)	16.8	46.2	37.7	6.0	35.5	10.7
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	583	1192	1157	1044	547	612
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.40	0.34	0.16	0.40	0.31

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60

Timings
13: Bath Rd & County Road 6

Intersection Signal Delay: 9.4	Intersection LOS: A
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Bath Rd & County Road 6



Timings
6: County Road 6 & Waldon Pond Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	41	14	0	67	55	462	45	138	845	115
Future Volume (vph)	61	0	41	14	0	67	55	462	45	138	845	115
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	46	0	16	74	0	61	563	0	153	1067	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	22.5		22.5	22.5		22.7	22.7		22.7	22.7	
Total Split (s)	12.0	35.0		23.0	23.0		85.0	85.0		85.0	85.0	
Total Split (%)	10.0%	29.2%		19.2%	19.2%		70.8%	70.8%		70.8%	70.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	18.5	18.4		8.8	8.8		95.4	95.4		95.4	95.4	
Actuated g/C Ratio	0.15	0.15		0.07	0.07		0.80	0.80		0.80	0.80	
v/c Ratio	0.37	0.12		0.16	0.15		0.23	0.38		0.24	0.72	
Control Delay	47.2	0.6		52.8	0.6		8.3	6.2		6.3	12.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.2	0.6		52.8	0.6		8.3	6.2		6.3	12.6	
LOS	D	A		D	A		A	A		A	B	
Approach Delay		28.4			9.9			6.4			11.8	
Approach LOS		C			A			A			B	
Queue Length 50th (m)	15.0	0.0		3.9	0.0		3.7	38.5		9.3	120.3	
Queue Length 95th (m)	25.7	0.0		10.4	0.0		13.5	81.2		25.2	260.2	
Internal Link Dist (m)		102.5			98.8			385.7			417.9	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	189	539		212	606		263	1492		626	1485	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.09		0.08	0.12		0.23	0.38		0.24	0.72	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 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: 0.72

Timings
 6: County Road 6 & Waldon Pond Dr

Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: County Road 6 & Waldon Pond Dr



Timings
9: County Road 6 & Amherst Dr

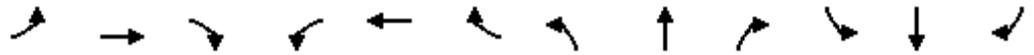


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	49	41	37	50	270	55	240	62	422	354	115
Future Volume (vph)	61	49	41	37	50	270	55	240	62	422	354	115
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	103	0	43	367	0	63	347	0	485	539	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		22.7	22.7		10.5	22.7	
Total Split (s)	23.3	23.3		23.3	23.3		22.7	22.7		24.0	46.7	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		32.4%	32.4%		34.3%	66.7%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		2.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		5.3	5.3		4.7	4.7		4.7	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)	13.1	13.1		12.3	12.3		28.2	28.2		47.7	47.7	
Actuated g/C Ratio	0.19	0.19		0.18	0.18		0.40	0.40		0.68	0.68	
v/c Ratio	0.65	0.28		0.19	0.67		0.18	0.47		0.67	0.43	
Control Delay	51.6	15.1		24.1	11.8		20.1	20.9		10.9	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.6	15.1		24.1	11.8		20.1	20.9		10.9	6.8	
LOS	D	B		C	B		C	C		B	A	
Approach Delay		29.9			13.1			20.8			8.7	
Approach LOS		C			B			C			A	
Queue Length 50th (m)	8.9	6.5		5.1	6.7		5.4	32.2		24.6	25.4	
Queue Length 95th (m)	19.8	16.1		11.5	24.6		16.6	#69.4		49.5	52.1	
Internal Link Dist (m)		105.8			221.8			282.6			385.7	
Turn Bay Length (m)	50.0			50.0			50.0			30.0		
Base Capacity (vph)	155	510		337	656		354	741		796	1260	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.20		0.13	0.56		0.18	0.47		0.61	0.43	

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67

Timings
11: County Road 6 & Kildare Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	25	41	11	20	42	55	285	14	84	278	115
Future Volume (vph)	61	25	41	11	20	42	55	285	14	84	278	115
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	75	0	13	71	0	63	340	0	95	447	0
Turn Type	Perm	NA										
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.7	22.7		22.7	22.7	
Total Split (s)	23.0	23.0		23.0	23.0		38.0	38.0		38.0	38.0	
Total Split (%)	37.7%	37.7%		37.7%	37.7%		62.3%	62.3%		62.3%	62.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.7	4.7		4.7	4.7	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	9.8	9.8		9.8	9.8		45.0	45.0		45.0	45.0	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.74	0.74		0.74	0.74	
v/c Ratio	0.32	0.24		0.06	0.23		0.09	0.25		0.12	0.33	
Control Delay	24.7	11.9		19.2	11.3		5.0	4.9		5.1	4.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.7	11.9		19.2	11.3		5.0	4.9		5.1	4.9	
LOS	C	B		B	B		A	A		A	A	
Approach Delay		18.0			12.5			4.9			5.0	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	7.5	3.0		1.4	2.4		1.8	10.6		2.7	13.0	
Queue Length 95th (m)	14.2	10.1		4.5	9.5		8.0	32.3		11.1	40.4	
Internal Link Dist (m)		246.5			224.0			540.0			282.6	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	409	554		407	541		686	1353		771	1353	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.14		0.03	0.13		0.09	0.25		0.12	0.33	

Intersection Summary

Cycle Length: 61
 Actuated Cycle Length: 61
 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: 0.33

Timings
 11: County Road 6 & Kildare Ave

Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 47.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: County Road 6 & Kildare Ave



Timings
13: Bath Rd & County Road 6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑	↗	↖	↗
Traffic Volume (vph)	246	510	597	373	241	269
Future Volume (vph)	246	510	597	373	241	269
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	3%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	548	642	401	259	289
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	7	7
Detector Phase	2	2	6	6	7	7
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	5.0
Minimum Split (s)	27.0	27.0	34.0	34.0	22.7	22.7
Total Split (s)	37.3	37.3	37.3	37.3	22.7	22.7
Total Split (%)	62.2%	62.2%	62.2%	62.2%	37.8%	37.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	36.9	36.9	36.9	36.9	13.7	13.7
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.23	0.23
v/c Ratio	0.69	0.48	0.55	0.36	0.64	0.54
Control Delay	22.7	8.9	9.9	1.9	28.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	8.9	9.9	1.9	28.0	8.8
LOS	C	A	A	A	C	A
Approach Delay		13.4	6.8		17.8	
Approach LOS		B	A		B	
Queue Length 50th (m)	17.8	29.9	37.3	0.0	27.1	5.2
Queue Length 95th (m)	#63.6	61.3	76.2	10.2	43.8	20.7
Internal Link Dist (m)		125.6	411.7		540.0	
Turn Bay Length (m)	100.0			50.0		50.0
Base Capacity (vph)	384	1146	1169	1118	531	638
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.48	0.55	0.36	0.49	0.45

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69

APPENDIX

B BACKGROUND TIS EXCERPTS



APPENDIX

**Umicore Plant TIS excerpt has not been included due to confidentiality.
Contact Loyalist Township for more information.**

Table 5:1: Site Trip Generation

Land Use	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting
Ready Mix Plant	25	13	12	25	12	13
Passenger Car Equivalent	75	33	42	76	30	46

*Passenger Car Equivalents derived from ITE- Canadian Capacity Guide

As shown in **Table 5:1**, the proposed development is anticipated to generate 75 total PCE (Passenger Car Equivalent) trips with 33 entering and 42 exiting the site during the AM peak hour. During the PM peak hour, the proposed site is anticipated to generate 76 total PCE trips, 30 entering and 46 exiting the site.

5.2 Trip Distribution and Assignment

Trip distribution was estimated in consideration of existing travel patterns. **Table 5:2** summarizes the trip distribution assumptions within the study area for the weekday AM and PM peak hour. The net site generated traffic for the full site build-out was assigned to the existing boundary roads based on this trip distribution. The assignment of vehicle trips generated by the proposed development during the AM and PM peak hours are presented in **Figure 5-1**.

Table 5:2: Trip Distribution

Direction	Percentage			
	AM	PM	AM	PM
	In	Out	In	Out
North Via County Road 4	66%	29%	34%	63%
South Via County Road 4	16%	31%	28%	12%
East Via County Road 4 to Taylor Kidd Boulevard	18%	40%	38%	25%

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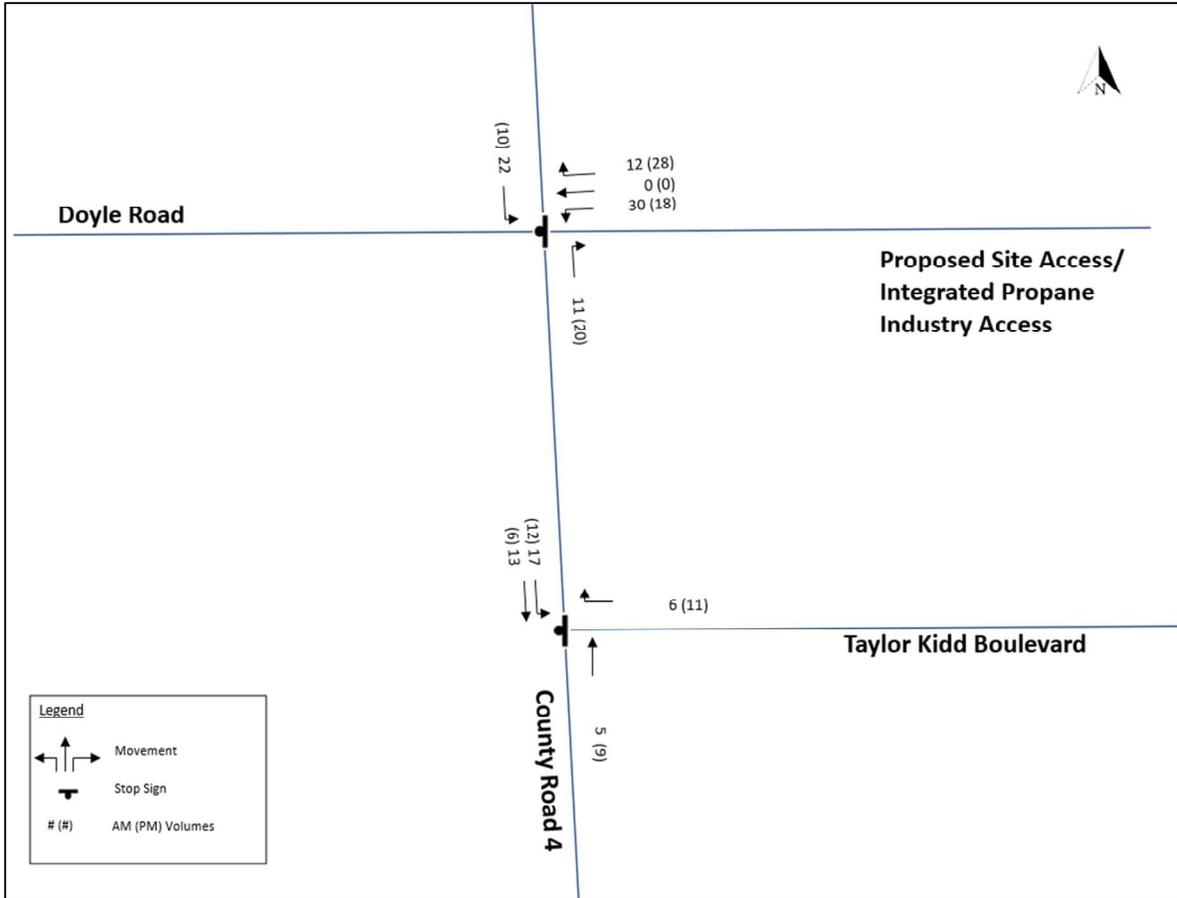


Figure 5-1: Development-generated Traffic

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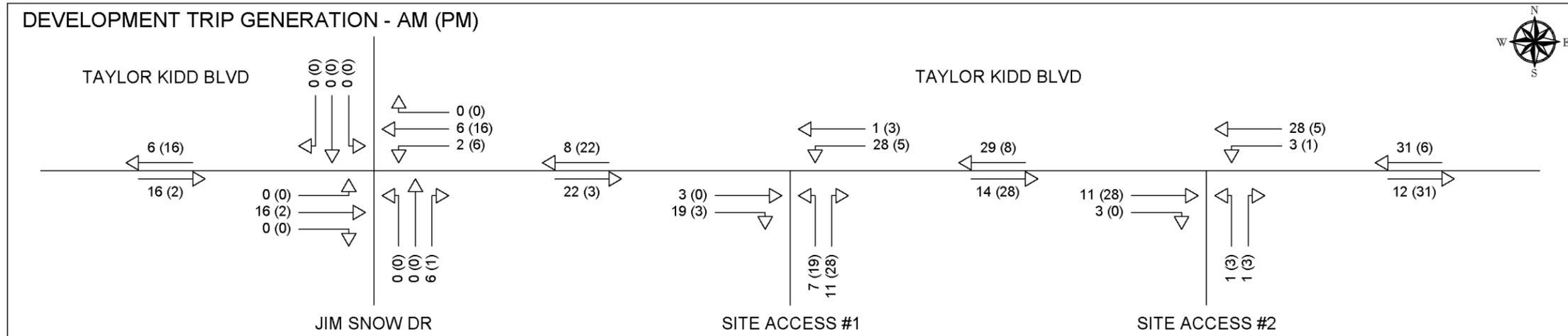


Figure Error! No text of specified style in document.-2: Latham Pools Facility Vehicular Trip Generation

APPENDIX

C TRAFFIC ANALYSIS OUTPUT (SIDRA)



APPENDIX

MOVEMENT SUMMARY

 **Site: 101 [CR6 / Walden Pond Alt1 LG Total AM]**

New Site
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	38	0.0	0.512	8.6	LOS A	3.7	28.6	0.45	0.27	0.45	54.1
8	T1	554	2.0	0.512	8.7	LOS A	3.7	28.6	0.45	0.27	0.45	53.9
18	R2	17	0.0	0.512	8.6	LOS A	3.7	28.6	0.45	0.27	0.45	52.5
Approach		610	1.8	0.512	8.7	LOS A	3.7	28.6	0.45	0.27	0.45	53.8
East: Walden Pond Drive												
1	L2	17	0.0	0.252	8.3	LOS A	1.1	8.2	0.65	0.65	0.65	54.0
6	T1	1	0.0	0.252	8.3	LOS A	1.1	8.2	0.65	0.65	0.65	53.9
16	R2	153	0.0	0.252	8.3	LOS A	1.1	8.2	0.65	0.65	0.65	52.4
Approach		172	0.0	0.252	8.3	LOS A	1.1	8.2	0.65	0.65	0.65	52.6
North: County Road 6												
7	L2	36	0.0	0.342	6.0	LOS A	2.0	15.5	0.23	0.10	0.23	56.0
4	T1	349	6.0	0.342	6.1	LOS A	2.0	15.5	0.23	0.10	0.23	55.7
14	R2	40	0.0	0.342	6.0	LOS A	2.0	15.5	0.23	0.10	0.23	54.3
Approach		425	4.9	0.342	6.1	LOS A	2.0	15.5	0.23	0.10	0.23	55.6
West: Amherstview West SPA Access												
5	L2	89	0.0	0.173	5.7	LOS A	0.8	5.8	0.52	0.44	0.52	54.1
2	T1	1	0.0	0.173	5.7	LOS A	0.8	5.8	0.52	0.44	0.52	53.9
12	R2	65	0.0	0.173	5.7	LOS A	0.8	5.8	0.52	0.44	0.52	52.5
Approach		155	0.0	0.173	5.7	LOS A	0.8	5.8	0.52	0.44	0.52	53.4
All Vehicles		1362	2.4	0.512	7.5	LOS A	3.7	28.6	0.41	0.28	0.41	54.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt1 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	60	0.0	0.392	7.1	LOS A	2.4	18.1	0.44	0.29	0.44	55.0
8	T1	351	1.0	0.392	7.1	LOS A	2.4	18.1	0.44	0.29	0.44	54.8
18	R2	39	0.0	0.392	7.1	LOS A	2.4	18.1	0.44	0.29	0.44	53.4
Approach		450	0.8	0.392	7.1	LOS A	2.4	18.1	0.44	0.29	0.44	54.7
East: Walden Pond Drive												
1	L2	13	0.0	0.091	5.1	LOS A	0.4	2.9	0.51	0.42	0.51	56.4
6	T1	1	0.0	0.091	5.1	LOS A	0.4	2.9	0.51	0.42	0.51	56.3
16	R2	64	0.0	0.091	5.1	LOS A	0.4	2.9	0.51	0.42	0.51	54.7
Approach		78	0.0	0.091	5.1	LOS A	0.4	2.9	0.51	0.42	0.51	55.0
North: County Road 6												
7	L2	122	0.0	0.670	11.7	LOS B	7.4	55.9	0.49	0.25	0.49	51.5
4	T1	637	0.0	0.670	11.7	LOS B	7.4	55.9	0.49	0.25	0.49	51.4
14	R2	99	0.0	0.670	11.7	LOS B	7.4	55.9	0.49	0.25	0.49	50.1
Approach		858	0.0	0.670	11.7	LOS B	7.4	55.9	0.49	0.25	0.49	51.3
West: Amherstview West SPA Access												
5	L2	50	0.0	0.152	7.5	LOS A	0.6	4.6	0.64	0.64	0.64	52.9
2	T1	1	0.0	0.152	7.5	LOS A	0.6	4.6	0.64	0.64	0.64	52.8
12	R2	45	0.0	0.152	7.5	LOS A	0.6	4.6	0.64	0.64	0.64	51.4
Approach		96	0.0	0.152	7.5	LOS A	0.6	4.6	0.64	0.64	0.64	52.2
All Vehicles		1482	0.2	0.670	9.7	LOS A	7.4	55.9	0.48	0.30	0.48	52.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt1 LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	37	0.0	0.349	7.2	LOS A	1.8	14.2	0.53	0.43	0.53	55.0
8	T1	308	2.0	0.349	7.3	LOS A	1.8	14.2	0.53	0.43	0.53	54.8
18	R2	4	0.0	0.349	7.2	LOS A	1.8	14.2	0.53	0.43	0.53	53.4
Approach		349	1.8	0.349	7.3	LOS A	1.8	14.2	0.53	0.43	0.53	54.8
East: Amherst Drive												
1	L2	17	9.0	0.311	7.9	LOS A	1.5	11.4	0.59	0.53	0.59	54.2
6	T1	37	0.0	0.311	7.5	LOS A	1.5	11.4	0.59	0.53	0.59	54.6
16	R2	212	3.0	0.311	7.7	LOS A	1.5	11.4	0.59	0.53	0.59	53.0
Approach		266	3.0	0.311	7.7	LOS A	1.5	11.4	0.59	0.53	0.59	53.3
North: County Road 6												
7	L2	147	7.0	0.337	6.3	LOS A	1.9	14.9	0.30	0.15	0.30	54.4
4	T1	220	3.0	0.337	6.2	LOS A	1.9	14.9	0.30	0.15	0.30	54.5
14	R2	40	0.0	0.337	6.1	LOS A	1.9	14.9	0.30	0.15	0.30	53.2
Approach		407	4.1	0.337	6.2	LOS A	1.9	14.9	0.30	0.15	0.30	54.3
West: Amherstview West SPA Access												
5	L2	89	0.0	0.227	6.2	LOS A	1.1	8.0	0.53	0.46	0.53	54.3
2	T1	53	0.0	0.227	6.2	LOS A	1.1	8.0	0.53	0.46	0.53	54.2
12	R2	65	0.0	0.227	6.2	LOS A	1.1	8.0	0.53	0.46	0.53	52.8
Approach		208	0.0	0.227	6.2	LOS A	1.1	8.0	0.53	0.46	0.53	53.8
All Vehicles		1229	2.5	0.349	6.8	LOS A	1.9	14.9	0.47	0.36	0.47	54.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt1 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.368	8.0	LOS A	1.9	14.6	0.59	0.52	0.59	54.1
8	T1	245	2.0	0.368	8.1	LOS A	1.9	14.6	0.59	0.52	0.59	53.9
18	R2	33	0.0	0.368	8.0	LOS A	1.9	14.6	0.59	0.52	0.59	52.5
Approach		337	1.5	0.368	8.0	LOS A	1.9	14.6	0.59	0.52	0.59	53.8
East: Amherst Drive												
1	L2	17	0.0	0.240	6.1	LOS A	1.1	8.7	0.52	0.43	0.52	55.9
6	T1	54	0.0	0.240	6.1	LOS A	1.1	8.7	0.52	0.43	0.52	55.8
16	R2	158	0.0	0.240	6.1	LOS A	1.1	8.7	0.52	0.43	0.52	54.2
Approach		229	0.0	0.240	6.1	LOS A	1.1	8.7	0.52	0.43	0.52	54.7
North: County Road 6												
7	L2	285	0.0	0.594	10.2	LOS B	5.1	38.6	0.53	0.33	0.53	51.5
4	T1	333	0.0	0.594	10.2	LOS B	5.1	38.6	0.53	0.33	0.53	51.4
14	R2	99	0.0	0.594	10.2	LOS B	5.1	38.6	0.53	0.33	0.53	50.1
Approach		716	0.0	0.594	10.2	LOS B	5.1	38.6	0.53	0.33	0.53	51.3
West: Amherstview West SPA Access												
5	L2	50	0.0	0.205	7.3	LOS A	0.9	6.6	0.62	0.61	0.62	53.9
2	T1	53	0.0	0.205	7.3	LOS A	0.9	6.6	0.62	0.61	0.62	53.8
12	R2	45	0.0	0.205	7.3	LOS A	0.9	6.6	0.62	0.61	0.62	52.4
Approach		148	0.0	0.205	7.3	LOS A	0.9	6.6	0.62	0.61	0.62	53.4
All Vehicles		1430	0.3	0.594	8.7	LOS A	5.1	38.6	0.55	0.42	0.55	52.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt1 LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total	Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance				km/h
							veh	m				
South: County Road 6												
3	L2	37	0.0	0.167	4.5	LOS A	0.8	6.1	0.31	0.17	0.31	56.8
8	T1	151	4.0	0.167	4.6	LOS A	0.8	6.1	0.31	0.17	0.31	56.6
18	R2	7	0.0	0.167	4.5	LOS A	0.8	6.1	0.31	0.17	0.31	55.1
Approach		195	3.1	0.167	4.6	LOS A	0.8	6.1	0.31	0.17	0.31	56.6
East: Kildare Avenue												
1	L2	28	0.0	0.167	5.0	LOS A	0.8	5.8	0.44	0.32	0.44	56.5
6	T1	32	0.0	0.167	5.0	LOS A	0.8	5.8	0.44	0.32	0.44	56.3
16	R2	112	1.0	0.167	5.1	LOS A	0.8	5.8	0.44	0.32	0.44	54.7
Approach		172	0.7	0.167	5.0	LOS A	0.8	5.8	0.44	0.32	0.44	55.3
North: County Road 6												
7	L2	28	11.0	0.243	5.3	LOS A	1.3	9.8	0.28	0.14	0.28	56.3
4	T1	233	0.0	0.243	5.0	LOS A	1.3	9.8	0.28	0.14	0.28	56.8
14	R2	40	0.0	0.243	5.0	LOS A	1.3	9.8	0.28	0.14	0.28	55.2
Approach		301	1.0	0.243	5.1	LOS A	1.3	9.8	0.28	0.14	0.28	56.5
West: Amherstview West SPA Access												
5	L2	89	0.0	0.168	5.1	LOS A	0.8	5.8	0.44	0.33	0.44	54.8
2	T1	17	0.0	0.168	5.1	LOS A	0.8	5.8	0.44	0.33	0.44	54.7
12	R2	65	0.0	0.168	5.1	LOS A	0.8	5.8	0.44	0.33	0.44	53.2
Approach		172	0.0	0.168	5.1	LOS A	0.8	5.8	0.44	0.33	0.44	54.2
All Vehicles		839	1.2	0.243	4.9	LOS A	1.3	9.8	0.35	0.22	0.35	55.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt1 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.276	5.7	LOS A	1.4	11.1	0.37	0.24	0.37	55.9
8	T1	243	3.0	0.276	5.8	LOS A	1.4	11.1	0.37	0.24	0.37	55.6
18	R2	11	0.0	0.276	5.7	LOS A	1.4	11.1	0.37	0.24	0.37	54.2
Approach		314	2.3	0.276	5.7	LOS A	1.4	11.1	0.37	0.24	0.37	55.6
East: Kildare Avenue												
1	L2	8	0.0	0.079	4.5	LOS A	0.3	2.5	0.46	0.34	0.46	57.3
6	T1	22	0.0	0.079	4.5	LOS A	0.3	2.5	0.46	0.34	0.46	57.1
16	R2	46	0.0	0.079	4.5	LOS A	0.3	2.5	0.46	0.34	0.46	55.5
Approach		75	0.0	0.079	4.5	LOS A	0.3	2.5	0.46	0.34	0.46	56.1
North: County Road 6												
7	L2	88	0.0	0.310	5.7	LOS A	1.8	13.6	0.29	0.14	0.29	55.7
4	T1	203	0.0	0.310	5.7	LOS A	1.8	13.6	0.29	0.14	0.29	55.6
14	R2	99	0.0	0.310	5.7	LOS A	1.8	13.6	0.29	0.14	0.29	54.0
Approach		390	0.0	0.310	5.7	LOS A	1.8	13.6	0.29	0.14	0.29	55.2
West: Amherstview West SPA Access												
5	L2	50	0.0	0.120	4.6	LOS A	0.5	4.0	0.43	0.31	0.43	55.7
2	T1	27	0.0	0.120	4.6	LOS A	0.5	4.0	0.43	0.31	0.43	55.6
12	R2	45	0.0	0.120	4.6	LOS A	0.5	4.0	0.43	0.31	0.43	54.0
Approach		122	0.0	0.120	4.6	LOS A	0.5	4.0	0.43	0.31	0.43	55.1
All Vehicles		901	0.8	0.310	5.5	LOS A	1.8	13.6	0.35	0.22	0.35	55.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt1 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	38	0.0	0.729	14.3	LOS B	7.9	60.9	0.68	0.44	0.68	50.0
8	T1	805	2.0	0.729	14.4	LOS B	7.9	60.9	0.68	0.44	0.68	49.9
18	R2	21	0.0	0.729	14.3	LOS B	7.9	60.9	0.68	0.44	0.68	48.7
Approach		864	1.9	0.729	14.4	LOS B	7.9	60.9	0.68	0.44	0.68	49.8
East: Walden Pond Drive												
1	L2	13	0.0	0.437	14.3	LOS B	2.3	17.2	0.76	0.85	1.06	49.8
6	T1	1	0.0	0.437	14.3	LOS B	2.3	17.2	0.76	0.85	1.06	49.7
16	R2	215	0.0	0.437	14.3	LOS B	2.3	17.2	0.76	0.85	1.06	48.4
Approach		229	0.0	0.437	14.3	LOS B	2.3	17.2	0.76	0.85	1.06	48.5
North: County Road 6												
7	L2	41	0.0	0.492	8.0	LOS A	3.5	27.8	0.27	0.12	0.27	54.5
4	T1	530	6.0	0.492	8.1	LOS A	3.5	27.8	0.27	0.12	0.27	54.2
14	R2	40	0.0	0.492	8.0	LOS A	3.5	27.8	0.27	0.12	0.27	52.9
Approach		612	5.2	0.492	8.1	LOS A	3.5	27.8	0.27	0.12	0.27	54.1
West: Amherstview West SPA Access												
5	L2	89	0.0	0.211	7.3	LOS A	0.9	6.9	0.61	0.60	0.61	52.9
2	T1	1	0.0	0.211	7.3	LOS A	0.9	6.9	0.61	0.60	0.61	52.8
12	R2	65	0.0	0.211	7.3	LOS A	0.9	6.9	0.61	0.60	0.61	51.4
Approach		155	0.0	0.211	7.3	LOS A	0.9	6.9	0.61	0.60	0.61	52.3
All Vehicles		1861	2.6	0.729	11.7	LOS B	7.9	60.9	0.55	0.40	0.59	51.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt1 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.518	9.2	LOS A	3.6	27.5	0.55	0.40	0.55	53.5
8	T1	468	1.0	0.518	9.2	LOS A	3.6	27.5	0.55	0.40	0.55	53.3
18	R2	49	0.0	0.518	9.2	LOS A	3.6	27.5	0.55	0.40	0.55	51.9
Approach		577	0.8	0.518	9.2	LOS A	3.6	27.5	0.55	0.40	0.55	53.2
East: Walden Pond Drive												
1	L2	15	0.0	0.117	5.9	LOS A	0.5	3.6	0.57	0.52	0.57	55.6
6	T1	1	0.0	0.117	5.9	LOS A	0.5	3.6	0.57	0.52	0.57	55.5
16	R2	73	0.0	0.117	5.9	LOS A	0.5	3.6	0.57	0.52	0.57	54.0
Approach		89	0.0	0.117	5.9	LOS A	0.5	3.6	0.57	0.52	0.57	54.3
North: County Road 6												
7	L2	150	0.0	0.872	22.4	LOS C	18.8	142.9	0.97	0.51	0.97	44.9
4	T1	865	0.0	0.872	22.4	LOS C	18.8	142.9	0.97	0.51	0.97	44.8
14	R2	99	0.0	0.872	22.4	LOS C	18.8	142.9	0.97	0.51	0.97	43.8
Approach		1114	0.0	0.872	22.4	LOS C	18.8	142.9	0.97	0.51	0.97	44.7
West: Amherstview West SPA Access												
5	L2	50	0.0	0.198	10.3	LOS B	0.8	5.8	0.70	0.70	0.70	50.9
2	T1	1	0.0	0.198	10.3	LOS B	0.8	5.8	0.70	0.70	0.70	50.8
12	R2	45	0.0	0.198	10.3	LOS B	0.8	5.8	0.70	0.70	0.70	49.5
Approach		96	0.0	0.198	10.3	LOS B	0.8	5.8	0.70	0.70	0.70	50.3
All Vehicles		1876	0.2	0.872	17.0	LOS C	18.8	142.9	0.81	0.49	0.81	47.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt1 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				
South: County Road 6												
3	L2	37	0.0	0.433	9.5	LOS A	2.6	19.9	0.66	0.66	0.75	53.2
8	T1	314	2.0	0.433	9.6	LOS A	2.6	19.9	0.66	0.66	0.75	53.0
18	R2	18	0.0	0.433	9.5	LOS A	2.6	19.9	0.66	0.66	0.75	51.7
Approach		370	1.7	0.433	9.6	LOS A	2.6	19.9	0.66	0.66	0.75	53.0
East: Amherst Drive												
1	L2	18	9.0	0.617	14.1	LOS B	6.1	47.8	0.77	0.94	1.24	49.8
6	T1	37	0.0	0.617	13.8	LOS B	6.1	47.8	0.77	0.94	1.24	50.1
16	R2	468	3.0	0.617	13.9	LOS B	6.1	47.8	0.77	0.94	1.24	48.7
Approach		524	3.0	0.617	13.9	LOS B	6.1	47.8	0.77	0.94	1.24	48.8
North: County Road 6												
7	L2	292	7.0	0.481	8.2	LOS A	3.3	25.7	0.36	0.20	0.36	52.3
4	T1	242	3.0	0.481	8.1	LOS A	3.3	25.7	0.36	0.20	0.36	52.4
14	R2	40	0.0	0.481	8.0	LOS A	3.3	25.7	0.36	0.20	0.36	51.2
Approach		575	4.8	0.481	8.2	LOS A	3.3	25.7	0.36	0.20	0.36	52.3
West: Amherstview West SPA Access												
5	L2	89	0.0	0.273	7.9	LOS A	1.2	9.3	0.63	0.62	0.63	53.1
2	T1	53	0.0	0.273	7.9	LOS A	1.2	9.3	0.63	0.62	0.63	53.0
12	R2	65	0.0	0.273	7.9	LOS A	1.2	9.3	0.63	0.62	0.63	51.6
Approach		208	0.0	0.273	7.9	LOS A	1.2	9.3	0.63	0.62	0.63	52.6
All Vehicles		1676	3.0	0.617	10.2	LOS B	6.1	47.8	0.59	0.58	0.76	51.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt1 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.484	11.4	LOS B	3.2	24.9	0.72	0.81	0.98	51.6
8	T1	245	2.0	0.484	11.5	LOS B	3.2	24.9	0.72	0.81	0.98	51.4
18	R2	67	0.0	0.484	11.4	LOS B	3.2	24.9	0.72	0.81	0.98	50.2
Approach		372	1.3	0.484	11.4	LOS B	3.2	24.9	0.72	0.81	0.98	51.2
East: Amherst Drive												
1	L2	40	0.0	0.406	8.3	LOS A	2.2	17.0	0.60	0.52	0.60	54.0
6	T1	54	0.0	0.406	8.3	LOS A	2.2	17.0	0.60	0.52	0.60	53.9
16	R2	293	0.0	0.406	8.3	LOS A	2.2	17.0	0.60	0.52	0.60	52.4
Approach		388	0.0	0.406	8.3	LOS A	2.2	17.0	0.60	0.52	0.60	52.8
North: County Road 6												
7	L2	459	0.0	0.776	16.6	LOS C	16.2	123.4	0.83	0.71	1.08	47.1
4	T1	358	0.0	0.776	16.6	LOS C	16.2	123.4	0.83	0.71	1.08	47.0
14	R2	99	0.0	0.776	16.6	LOS C	16.2	123.4	0.83	0.71	1.08	45.9
Approach		915	0.0	0.776	16.6	LOS C	16.2	123.4	0.83	0.71	1.08	46.9
West: Amherstview West SPA Access												
5	L2	50	0.0	0.257	9.7	LOS A	1.1	8.0	0.69	0.69	0.69	52.1
2	T1	53	0.0	0.257	9.7	LOS A	1.1	8.0	0.69	0.69	0.69	52.0
12	R2	45	0.0	0.257	9.7	LOS A	1.1	8.0	0.69	0.69	0.69	50.7
Approach		148	0.0	0.257	9.7	LOS A	1.1	8.0	0.69	0.69	0.69	51.6
All Vehicles		1823	0.3	0.776	13.2	LOS B	16.2	123.4	0.75	0.69	0.93	49.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt1 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total	Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	37	0.0	0.250	5.3	LOS A	1.3	9.9	0.33	0.19	0.33	56.4
8	T1	247	4.0	0.250	5.4	LOS A	1.3	9.9	0.33	0.19	0.33	56.2
18	R2	7	0.0	0.250	5.3	LOS A	1.3	9.9	0.33	0.19	0.33	54.7
Approach		290	3.4	0.250	5.4	LOS A	1.3	9.9	0.33	0.19	0.33	56.2
East: Kildare Avenue												
1	L2	28	0.0	0.189	5.7	LOS A	0.8	6.5	0.51	0.42	0.51	55.9
6	T1	32	0.0	0.189	5.7	LOS A	0.8	6.5	0.51	0.42	0.51	55.8
16	R2	115	1.0	0.189	5.7	LOS A	0.8	6.5	0.51	0.42	0.51	54.2
Approach		175	0.7	0.189	5.7	LOS A	0.8	6.5	0.51	0.42	0.51	54.7
North: County Road 6												
7	L2	28	11.0	0.281	5.7	LOS A	1.5	11.8	0.29	0.15	0.29	56.0
4	T1	279	0.0	0.281	5.4	LOS A	1.5	11.8	0.29	0.15	0.29	56.5
14	R2	40	0.0	0.281	5.4	LOS A	1.5	11.8	0.29	0.15	0.29	54.9
Approach		348	0.9	0.281	5.4	LOS A	1.5	11.8	0.29	0.15	0.29	56.3
West: Amherstview West SPA Access												
5	L2	89	0.0	0.176	5.4	LOS A	0.8	6.1	0.48	0.38	0.48	54.6
2	T1	17	0.0	0.176	5.4	LOS A	0.8	6.1	0.48	0.38	0.48	54.5
12	R2	65	0.0	0.176	5.4	LOS A	0.8	6.1	0.48	0.38	0.48	53.0
Approach		172	0.0	0.176	5.4	LOS A	0.8	6.1	0.48	0.38	0.48	54.0
All Vehicles		985	1.4	0.281	5.5	LOS A	1.5	11.8	0.37	0.25	0.37	55.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt1 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	60	0.0	0.339	6.4	LOS A	1.9	14.6	0.40	0.26	0.40	55.4
8	T1	310	3.0	0.339	6.5	LOS A	1.9	14.6	0.40	0.26	0.40	55.2
18	R2	15	0.0	0.339	6.4	LOS A	1.9	14.6	0.40	0.26	0.40	53.8
Approach		385	2.4	0.339	6.5	LOS A	1.9	14.6	0.40	0.26	0.40	55.2
East: Kildare Avenue												
1	L2	12	0.0	0.091	4.9	LOS A	0.4	2.9	0.50	0.40	0.50	56.6
6	T1	22	0.0	0.091	4.9	LOS A	0.4	2.9	0.50	0.40	0.50	56.5
16	R2	46	3.0	0.091	5.0	LOS A	0.4	2.9	0.50	0.40	0.50	54.7
Approach		79	1.7	0.091	5.0	LOS A	0.4	2.9	0.50	0.40	0.50	55.5
North: County Road 6												
7	L2	89	1.0	0.391	6.7	LOS A	2.5	19.1	0.33	0.17	0.33	55.1
4	T1	302	0.0	0.391	6.7	LOS A	2.5	19.1	0.33	0.17	0.33	55.0
14	R2	99	0.0	0.391	6.7	LOS A	2.5	19.1	0.33	0.17	0.33	53.5
Approach		490	0.2	0.391	6.7	LOS A	2.5	19.1	0.33	0.17	0.33	54.7
West: Amherstview West SPA Access												
5	L2	50	0.0	0.133	5.2	LOS A	0.6	4.4	0.50	0.41	0.50	55.2
2	T1	27	0.0	0.133	5.2	LOS A	0.6	4.4	0.50	0.41	0.50	55.1
12	R2	45	0.0	0.133	5.2	LOS A	0.6	4.4	0.50	0.41	0.50	53.6
Approach		122	0.0	0.133	5.2	LOS A	0.6	4.4	0.50	0.41	0.50	54.6
All Vehicles		1076	1.1	0.391	6.3	LOS A	2.5	19.1	0.39	0.25	0.39	54.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt23 LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	37	0.0	0.580	10.2	LOS B	4.5	35.0	0.55	0.36	0.55	52.9
8	T1	615	2.0	0.580	10.2	LOS B	4.5	35.0	0.55	0.36	0.55	52.8
18	R2	17	0.0	0.580	10.2	LOS B	4.5	35.0	0.55	0.36	0.55	51.4
Approach		670	1.8	0.580	10.2	LOS B	4.5	35.0	0.55	0.36	0.55	52.7
East: Walden Pond Drive												
1	L2	17	0.0	0.277	9.4	LOS A	1.2	8.9	0.68	0.68	0.68	53.2
6	T1	1	0.0	0.277	9.4	LOS A	1.2	8.9	0.68	0.68	0.68	53.0
16	R2	153	0.0	0.277	9.4	LOS A	1.2	8.9	0.68	0.68	0.68	51.6
Approach		172	0.0	0.277	9.4	LOS A	1.2	8.9	0.68	0.68	0.68	51.8
North: County Road 6												
7	L2	36	0.0	0.373	6.3	LOS A	2.2	17.7	0.24	0.10	0.24	55.8
4	T1	375	6.0	0.373	6.5	LOS A	2.2	17.7	0.24	0.10	0.24	55.4
14	R2	53	0.0	0.373	6.3	LOS A	2.2	17.7	0.24	0.10	0.24	54.1
Approach		464	4.8	0.373	6.5	LOS A	2.2	17.7	0.24	0.10	0.24	55.3
West: Amherstview West SPA Access												
5	L2	120	0.0	0.213	6.3	LOS A	1.0	7.3	0.55	0.49	0.55	53.3
2	T1	1	0.0	0.213	6.3	LOS A	1.0	7.3	0.55	0.49	0.55	53.2
12	R2	65	0.0	0.213	6.3	LOS A	1.0	7.3	0.55	0.49	0.55	51.8
Approach		186	0.0	0.213	6.3	LOS A	1.0	7.3	0.55	0.49	0.55	52.8
All Vehicles		1491	2.3	0.580	8.5	LOS A	4.5	35.0	0.47	0.33	0.47	53.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt23 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	60	0.0	0.424	7.5	LOS A	2.6	20.3	0.46	0.31	0.46	54.7
8	T1	380	1.0	0.424	7.6	LOS A	2.6	20.3	0.46	0.31	0.46	54.5
18	R2	45	0.0	0.424	7.5	LOS A	2.6	20.3	0.46	0.31	0.46	53.1
Approach		485	0.8	0.424	7.6	LOS A	2.6	20.3	0.46	0.31	0.46	54.4
East: Walden Pond Drive												
1	L2	21	0.0	0.166	6.1	LOS A	0.7	5.4	0.56	0.50	0.56	55.6
6	T1	1	0.0	0.166	6.1	LOS A	0.7	5.4	0.56	0.50	0.56	55.5
16	R2	114	0.0	0.166	6.1	LOS A	0.7	5.4	0.56	0.50	0.56	53.9
Approach		136	0.0	0.166	6.1	LOS A	0.7	5.4	0.56	0.50	0.56	54.2
North: County Road 6												
7	L2	109	0.0	0.738	14.0	LOS B	9.5	72.4	0.61	0.32	0.61	50.0
4	T1	703	0.0	0.738	14.0	LOS B	9.5	72.4	0.61	0.32	0.61	49.9
14	R2	125	0.0	0.738	14.0	LOS B	9.5	72.4	0.61	0.32	0.61	48.6
Approach		937	0.0	0.738	14.0	LOS B	9.5	72.4	0.61	0.32	0.61	49.7
West: Amherstview West SPA Access												
5	L2	66	0.0	0.190	8.5	LOS A	0.8	5.8	0.66	0.66	0.66	52.0
2	T1	1	0.0	0.190	8.5	LOS A	0.8	5.8	0.66	0.66	0.66	51.8
12	R2	45	0.0	0.190	8.5	LOS A	0.8	5.8	0.66	0.66	0.66	50.5
Approach		112	0.0	0.190	8.5	LOS A	0.8	5.8	0.66	0.66	0.66	51.4
All Vehicles		1670	0.2	0.738	11.1	LOS B	9.5	72.4	0.57	0.36	0.57	51.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt23 LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	37	0.0	0.392	8.0	LOS A	2.1	16.3	0.57	0.48	0.57	54.4
8	T1	338	2.0	0.392	8.1	LOS A	2.1	16.3	0.57	0.48	0.57	54.2
18	R2	4	0.0	0.392	8.0	LOS A	2.1	16.3	0.57	0.48	0.57	52.8
Approach		379	1.8	0.392	8.0	LOS A	2.1	16.3	0.57	0.48	0.57	54.2
East: Amherst Drive												
1	L2	17	9.0	0.331	8.6	LOS A	1.5	12.1	0.62	0.60	0.62	53.7
6	T1	37	0.0	0.331	8.2	LOS A	1.5	12.1	0.62	0.60	0.62	54.1
16	R2	212	3.0	0.331	8.3	LOS A	1.5	12.1	0.62	0.60	0.62	52.5
Approach		266	3.0	0.331	8.3	LOS A	1.5	12.1	0.62	0.60	0.62	52.8
North: County Road 6												
7	L2	147	7.0	0.358	6.5	LOS A	2.1	16.3	0.31	0.16	0.31	54.3
4	T1	233	3.0	0.358	6.4	LOS A	2.1	16.3	0.31	0.16	0.31	54.4
14	R2	53	0.0	0.358	6.3	LOS A	2.1	16.3	0.31	0.16	0.31	53.1
Approach		433	4.0	0.358	6.4	LOS A	2.1	16.3	0.31	0.16	0.31	54.2
West: Amherstview West SPA Access												
5	L2	120	0.0	0.264	6.7	LOS A	1.3	9.5	0.56	0.49	0.56	53.6
2	T1	53	0.0	0.264	6.7	LOS A	1.3	9.5	0.56	0.49	0.56	53.5
12	R2	65	0.0	0.264	6.7	LOS A	1.3	9.5	0.56	0.49	0.56	52.1
Approach		238	0.0	0.264	6.7	LOS A	1.3	9.5	0.56	0.49	0.56	53.2
All Vehicles		1316	2.4	0.392	7.3	LOS A	2.1	16.3	0.49	0.40	0.49	53.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt23 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.392	8.5	LOS A	2.0	15.8	0.61	0.55	0.61	53.7
8	T1	261	2.0	0.392	8.5	LOS A	2.0	15.8	0.61	0.55	0.61	53.5
18	R2	33	0.0	0.392	8.5	LOS A	2.0	15.8	0.61	0.55	0.61	52.2
Approach		353	1.5	0.392	8.5	LOS A	2.0	15.8	0.61	0.55	0.61	53.4
East: Amherst Drive												
1	L2	17	0.0	0.248	6.4	LOS A	1.2	8.9	0.54	0.46	0.54	55.7
6	T1	54	0.0	0.248	6.4	LOS A	1.2	8.9	0.54	0.46	0.54	55.6
16	R2	158	0.0	0.248	6.4	LOS A	1.2	8.9	0.54	0.46	0.54	54.0
Approach		229	0.0	0.248	6.4	LOS A	1.2	8.9	0.54	0.46	0.54	54.5
North: County Road 6												
7	L2	285	0.0	0.637	11.2	LOS B	5.9	45.0	0.58	0.36	0.58	50.9
4	T1	359	0.0	0.637	11.2	LOS B	5.9	45.0	0.58	0.36	0.58	50.8
14	R2	125	0.0	0.637	11.2	LOS B	5.9	45.0	0.58	0.36	0.58	49.5
Approach		768	0.0	0.637	11.2	LOS B	5.9	45.0	0.58	0.36	0.58	50.6
West: Amherstview West SPA Access												
5	L2	66	0.0	0.233	7.8	LOS A	1.0	7.6	0.64	0.64	0.64	53.2
2	T1	53	0.0	0.233	7.8	LOS A	1.0	7.6	0.64	0.64	0.64	53.1
12	R2	45	0.0	0.233	7.8	LOS A	1.0	7.6	0.64	0.64	0.64	51.7
Approach		164	0.0	0.233	7.8	LOS A	1.0	7.6	0.64	0.64	0.64	52.8
All Vehicles		1515	0.3	0.637	9.5	LOS A	5.9	45.0	0.59	0.45	0.59	52.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt23 LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	37	0.0	0.173	4.6	LOS A	0.8	6.2	0.34	0.21	0.34	56.7
8	T1	151	4.0	0.173	4.7	LOS A	0.8	6.2	0.34	0.21	0.34	56.4
18	R2	7	0.0	0.173	4.6	LOS A	0.8	6.2	0.34	0.21	0.34	55.0
Approach		195	3.1	0.173	4.7	LOS A	0.8	6.2	0.34	0.21	0.34	56.4
East: Kildare Avenue												
1	L2	28	0.0	0.172	5.2	LOS A	0.8	6.0	0.46	0.35	0.46	56.3
6	T1	32	0.0	0.172	5.2	LOS A	0.8	6.0	0.46	0.35	0.46	56.2
16	R2	112	1.0	0.172	5.2	LOS A	0.8	6.0	0.46	0.35	0.46	54.5
Approach		172	0.7	0.172	5.2	LOS A	0.8	6.0	0.46	0.35	0.46	55.1
North: County Road 6												
7	L2	28	11.0	0.254	5.5	LOS A	1.3	10.3	0.28	0.14	0.28	56.2
4	T1	233	0.0	0.254	5.1	LOS A	1.3	10.3	0.28	0.14	0.28	56.7
14	R2	53	0.0	0.254	5.1	LOS A	1.3	10.3	0.28	0.14	0.28	55.1
Approach		314	1.0	0.254	5.2	LOS A	1.3	10.3	0.28	0.14	0.28	56.4
West: Amherstview West SPA Access												
5	L2	120	0.0	0.197	5.4	LOS A	0.9	7.1	0.46	0.34	0.46	54.3
2	T1	17	0.0	0.197	5.4	LOS A	0.9	7.1	0.46	0.34	0.46	54.2
12	R2	65	0.0	0.197	5.4	LOS A	0.9	7.1	0.46	0.34	0.46	52.7
Approach		202	0.0	0.197	5.4	LOS A	0.9	7.1	0.46	0.34	0.46	53.8
All Vehicles		883	1.2	0.254	5.1	LOS A	1.3	10.3	0.37	0.24	0.37	55.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt23 LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV %				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	60	0.0	0.281	5.8	LOS A	1.5	11.3	0.40	0.26	0.40	55.7
8	T1	243	3.0	0.281	5.9	LOS A	1.5	11.3	0.40	0.26	0.40	55.5
18	R2	11	0.0	0.281	5.8	LOS A	1.5	11.3	0.40	0.26	0.40	54.1
Approach		314	2.3	0.281	5.9	LOS A	1.5	11.3	0.40	0.26	0.40	55.5
East: Kildare Avenue												
1	L2	8	0.0	0.081	4.6	LOS A	0.3	2.6	0.47	0.35	0.47	57.1
6	T1	22	0.0	0.081	4.6	LOS A	0.3	2.6	0.47	0.35	0.47	57.0
16	R2	46	3.0	0.081	4.7	LOS A	0.3	2.6	0.47	0.35	0.47	55.2
Approach		75	1.8	0.081	4.7	LOS A	0.3	2.6	0.47	0.35	0.47	55.9
North: County Road 6												
7	L2	91	1.0	0.334	6.0	LOS A	2.0	15.1	0.30	0.15	0.30	55.5
4	T1	203	0.0	0.334	6.0	LOS A	2.0	15.1	0.30	0.15	0.30	55.4
14	R2	125	0.0	0.334	6.0	LOS A	2.0	15.1	0.30	0.15	0.30	53.9
Approach		420	0.2	0.334	6.0	LOS A	2.0	15.1	0.30	0.15	0.30	54.9
West: Amherstview West SPA Access												
5	L2	66	0.0	0.136	4.8	LOS A	0.6	4.6	0.44	0.32	0.44	55.2
2	T1	27	0.0	0.136	4.8	LOS A	0.6	4.6	0.44	0.32	0.44	55.1
12	R2	45	0.0	0.136	4.8	LOS A	0.6	4.6	0.44	0.32	0.44	53.6
Approach		138	0.0	0.136	4.8	LOS A	0.6	4.6	0.44	0.32	0.44	54.7
All Vehicles		947	1.0	0.334	5.7	LOS A	2.0	15.1	0.36	0.23	0.36	55.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt23 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	37	0.0	0.805	18.5	LOS C	20.5	158.1	0.87	0.85	1.29	47.4
8	T1	866	2.0	0.805	18.6	LOS C	20.5	158.1	0.87	0.85	1.29	47.3
18	R2	21	0.0	0.805	18.5	LOS C	20.5	158.1	0.87	0.85	1.29	46.2
Approach		924	1.9	0.805	18.6	LOS C	20.5	158.1	0.87	0.85	1.29	47.2
East: Walden Pond Drive												
1	L2	24	0.0	0.503	17.4	LOS C	2.7	20.7	0.79	0.91	1.21	47.6
6	T1	1	0.0	0.503	17.4	LOS C	2.7	20.7	0.79	0.91	1.21	47.5
16	R2	215	0.0	0.503	17.4	LOS C	2.7	20.7	0.79	0.91	1.21	46.4
Approach		240	0.0	0.503	17.4	LOS C	2.7	20.7	0.79	0.91	1.21	46.5
North: County Road 6												
7	L2	41	0.0	0.528	8.6	LOS A	4.0	31.4	0.32	0.15	0.32	54.0
4	T1	557	6.0	0.528	8.8	LOS A	4.0	31.4	0.32	0.15	0.32	53.7
14	R2	53	0.0	0.528	8.6	LOS A	4.0	31.4	0.32	0.15	0.32	52.4
Approach		651	5.1	0.528	8.8	LOS A	4.0	31.4	0.32	0.15	0.32	53.6
West: Amherstview West SPA Access												
5	L2	120	0.0	0.263	8.2	LOS A	1.2	8.7	0.64	0.64	0.64	52.0
2	T1	1	0.0	0.263	8.2	LOS A	1.2	8.7	0.64	0.64	0.64	51.8
12	R2	65	0.0	0.263	8.2	LOS A	1.2	8.7	0.64	0.64	0.64	50.5
Approach		186	0.0	0.263	8.2	LOS A	1.2	8.7	0.64	0.64	0.64	51.4
All Vehicles		2001	2.5	0.805	14.3	LOS B	20.5	158.1	0.66	0.61	0.90	49.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Walden Pond Alt23 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.557	10.1	LOS B	4.0	30.8	0.60	0.45	0.60	52.8
8	T1	502	1.0	0.557	10.1	LOS B	4.0	30.8	0.60	0.45	0.60	52.7
18	R2	49	0.0	0.557	10.1	LOS B	4.0	30.8	0.60	0.45	0.60	51.3
Approach		611	0.8	0.557	10.1	LOS B	4.0	30.8	0.60	0.45	0.60	52.6
East: Walden Pond Drive												
1	L2	15	0.0	0.123	6.3	LOS A	0.5	3.8	0.59	0.55	0.59	55.3
6	T1	1	0.0	0.123	6.3	LOS A	0.5	3.8	0.59	0.55	0.59	55.2
16	R2	73	0.0	0.123	6.3	LOS A	0.5	3.8	0.59	0.55	0.59	53.7
Approach		89	0.0	0.123	6.3	LOS A	0.5	3.8	0.59	0.55	0.59	54.0
North: County Road 6												
7	L2	150	0.0	0.935	30.2	LOS D	28.7	218.1	1.00	0.53	1.00	41.1
4	T1	918	0.0	0.935	30.2	LOS D	28.7	218.1	1.00	0.53	1.00	41.0
14	R2	125	0.0	0.935	30.2	LOS D	28.7	218.1	1.00	0.53	1.00	40.2
Approach		1193	0.0	0.935	30.2	LOS D	28.7	218.1	1.00	0.53	1.00	40.9
West: Amherstview West SPA Access												
5	L2	66	0.0	0.245	11.6	LOS B	0.9	7.2	0.73	0.73	0.73	49.8
2	T1	1	0.0	0.245	11.6	LOS B	0.9	7.2	0.73	0.73	0.73	49.7
12	R2	45	0.0	0.245	11.6	LOS B	0.9	7.2	0.73	0.73	0.73	48.5
Approach		112	0.0	0.245	11.6	LOS B	0.9	7.2	0.73	0.73	0.73	49.2
All Vehicles		2005	0.3	0.935	22.0	LOS C	28.7	218.1	0.84	0.52	0.84	44.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt23 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	37	0.0	0.484	10.7	LOS B	3.3	25.6	0.70	0.77	0.91	52.4
8	T1	345	2.0	0.484	10.8	LOS B	3.3	25.6	0.70	0.77	0.91	52.2
18	R2	18	0.0	0.484	10.7	LOS B	3.3	25.6	0.70	0.77	0.91	50.9
Approach		400	1.7	0.484	10.8	LOS B	3.3	25.6	0.70	0.77	0.91	52.1
East: Amherst Drive												
1	L2	18	9.0	0.657	16.2	LOS C	6.9	53.4	0.81	1.04	1.43	48.4
6	T1	37	0.0	0.657	15.9	LOS C	6.9	53.4	0.81	1.04	1.43	48.7
16	R2	468	3.0	0.657	16.0	LOS C	6.9	53.4	0.81	1.04	1.43	47.4
Approach		524	3.0	0.657	16.0	LOS C	6.9	53.4	0.81	1.04	1.43	47.5
North: County Road 6												
7	L2	292	7.0	0.502	8.6	LOS A	3.5	27.8	0.38	0.20	0.38	52.1
4	T1	255	3.0	0.502	8.5	LOS A	3.5	27.8	0.38	0.20	0.38	52.3
14	R2	53	0.0	0.502	8.4	LOS A	3.5	27.8	0.38	0.20	0.38	51.0
Approach		601	4.7	0.502	8.5	LOS A	3.5	27.8	0.38	0.20	0.38	52.1
West: Amherstview West SPA Access												
5	L2	120	0.0	0.317	8.6	LOS A	1.5	11.1	0.65	0.65	0.65	52.3
2	T1	53	0.0	0.317	8.6	LOS A	1.5	11.1	0.65	0.65	0.65	52.1
12	R2	65	0.0	0.317	8.6	LOS A	1.5	11.1	0.65	0.65	0.65	50.8
Approach		238	0.0	0.317	8.6	LOS A	1.5	11.1	0.65	0.65	0.65	51.8
All Vehicles		1763	2.9	0.657	11.3	LOS B	6.9	53.4	0.61	0.64	0.85	50.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Amherst Alt23 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.514	12.2	LOS B	3.6	28.0	0.74	0.85	1.07	51.0
8	T1	261	2.0	0.514	12.3	LOS B	3.6	28.0	0.74	0.85	1.07	50.9
18	R2	67	0.0	0.514	12.2	LOS B	3.6	28.0	0.74	0.85	1.07	49.6
Approach		388	1.3	0.514	12.3	LOS B	3.6	28.0	0.74	0.85	1.07	50.7
East: Amherst Drive												
1	L2	40	0.0	0.419	8.8	LOS A	2.3	17.8	0.62	0.57	0.63	53.7
6	T1	54	0.0	0.419	8.8	LOS A	2.3	17.8	0.62	0.57	0.63	53.5
16	R2	293	0.0	0.419	8.8	LOS A	2.3	17.8	0.62	0.57	0.63	52.1
Approach		388	0.0	0.419	8.8	LOS A	2.3	17.8	0.62	0.57	0.63	52.5
North: County Road 6												
7	L2	459	0.0	0.821	19.4	LOS C	23.5	178.5	0.94	0.89	1.37	45.6
4	T1	385	0.0	0.821	19.4	LOS C	23.5	178.5	0.94	0.89	1.37	45.5
14	R2	125	0.0	0.821	19.4	LOS C	23.5	178.5	0.94	0.89	1.37	44.5
Approach		968	0.0	0.821	19.4	LOS C	23.5	178.5	0.94	0.89	1.37	45.4
West: Amherstview West SPA Access												
5	L2	66	0.0	0.293	10.5	LOS B	1.2	9.4	0.70	0.71	0.73	51.3
2	T1	53	0.0	0.293	10.5	LOS B	1.2	9.4	0.70	0.71	0.73	51.1
12	R2	45	0.0	0.293	10.5	LOS B	1.2	9.4	0.70	0.71	0.73	49.9
Approach		164	0.0	0.293	10.5	LOS B	1.2	9.4	0.70	0.71	0.73	50.8
All Vehicles		1909	0.3	0.821	15.0	LOS C	23.5	178.5	0.81	0.80	1.11	48.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt23 HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	37	0.0	0.258	5.5	LOS A	1.3	10.1	0.37	0.23	0.37	56.3
8	T1	247	4.0	0.258	5.6	LOS A	1.3	10.1	0.37	0.23	0.37	56.0
18	R2	7	0.0	0.258	5.5	LOS A	1.3	10.1	0.37	0.23	0.37	54.6
Approach		290	3.4	0.258	5.6	LOS A	1.3	10.1	0.37	0.23	0.37	56.0
East: Kildare Avenue												
1	L2	37	0.0	0.204	6.0	LOS A	0.9	7.0	0.53	0.45	0.53	55.4
6	T1	32	0.0	0.204	6.0	LOS A	0.9	7.0	0.53	0.45	0.53	55.3
16	R2	115	1.0	0.204	6.1	LOS A	0.9	7.0	0.53	0.45	0.53	53.7
Approach		184	0.6	0.204	6.0	LOS A	0.9	7.0	0.53	0.45	0.53	54.3
North: County Road 6												
7	L2	28	11.0	0.294	5.9	LOS A	1.6	12.5	0.31	0.16	0.31	55.9
4	T1	279	0.0	0.294	5.6	LOS A	1.6	12.5	0.31	0.16	0.31	56.4
14	R2	53	0.0	0.294	5.6	LOS A	1.6	12.5	0.31	0.16	0.31	54.8
Approach		361	0.9	0.294	5.6	LOS A	1.6	12.5	0.31	0.16	0.31	56.1
West: Amherstview West SPA Access												
5	L2	120	0.0	0.209	5.7	LOS A	1.0	7.4	0.50	0.40	0.50	54.0
2	T1	17	0.0	0.209	5.7	LOS A	1.0	7.4	0.50	0.40	0.50	53.9
12	R2	65	0.0	0.209	5.7	LOS A	1.0	7.4	0.50	0.40	0.50	52.5
Approach		202	0.0	0.209	5.7	LOS A	1.0	7.4	0.50	0.40	0.50	53.5
All Vehicles		1037	1.4	0.294	5.7	LOS A	1.6	12.5	0.40	0.28	0.40	55.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [CR6 / Kildare Alt23 HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	60	0.0	0.345	6.6	LOS A	1.9	14.8	0.43	0.29	0.43	55.3
8	T1	310	3.0	0.345	6.7	LOS A	1.9	14.8	0.43	0.29	0.43	55.0
18	R2	15	0.0	0.345	6.6	LOS A	1.9	14.8	0.43	0.29	0.43	53.6
Approach		385	2.4	0.345	6.6	LOS A	1.9	14.8	0.43	0.29	0.43	55.0
East: Kildare Avenue												
1	L2	12	0.0	0.092	5.0	LOS A	0.4	2.9	0.50	0.41	0.50	56.5
6	T1	22	0.0	0.092	5.0	LOS A	0.4	2.9	0.50	0.41	0.50	56.4
16	R2	46	3.0	0.092	5.1	LOS A	0.4	2.9	0.50	0.41	0.50	54.7
Approach		79	1.7	0.092	5.1	LOS A	0.4	2.9	0.50	0.41	0.50	55.4
North: County Road 6												
7	L2	91	1.0	0.414	7.0	LOS A	2.7	20.9	0.34	0.18	0.34	54.8
4	T1	302	0.0	0.414	7.0	LOS A	2.7	20.9	0.34	0.18	0.34	54.8
14	R2	125	0.0	0.414	7.0	LOS A	2.7	20.9	0.34	0.18	0.34	53.3
Approach		518	0.2	0.414	7.0	LOS A	2.7	20.9	0.34	0.18	0.34	54.4
West: Amherstview West SPA Access												
5	L2	66	0.0	0.151	5.4	LOS A	0.7	5.0	0.51	0.42	0.51	54.8
2	T1	27	0.0	0.151	5.4	LOS A	0.7	5.0	0.51	0.42	0.51	54.6
12	R2	45	0.0	0.151	5.4	LOS A	0.7	5.0	0.51	0.42	0.51	53.2
Approach		138	0.0	0.151	5.4	LOS A	0.7	5.0	0.51	0.42	0.51	54.2
All Vehicles		1121	1.0	0.414	6.5	LOS A	2.7	20.9	0.40	0.26	0.40	54.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG FBG AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	70	0.0	0.415	7.5	LOS A	2.5	19.3	0.46	0.31	0.46	54.5
8	T1	215	4.0	0.415	7.6	LOS A	2.5	19.3	0.46	0.31	0.46	54.2
18	R2	179	2.0	0.415	7.5	LOS A	2.5	19.3	0.46	0.31	0.46	52.8
Approach		464	2.6	0.415	7.6	LOS A	2.5	19.3	0.46	0.31	0.46	53.7
East: Taylor-Kidd Boulevard (CR23)												
1	L2	92	8.0	0.279	6.7	LOS A	1.3	10.4	0.49	0.39	0.49	54.0
6	T1	143	7.0	0.279	6.6	LOS A	1.3	10.4	0.49	0.39	0.49	54.1
16	R2	29	0.0	0.279	6.4	LOS A	1.3	10.4	0.49	0.39	0.49	52.9
Approach		265	6.6	0.279	6.6	LOS A	1.3	10.4	0.49	0.39	0.49	53.9
North: County Road 6												
7	L2	24	0.0	0.237	6.0	LOS A	1.1	8.6	0.49	0.39	0.49	56.0
4	T1	175	2.0	0.237	6.0	LOS A	1.1	8.6	0.49	0.39	0.49	55.8
14	R2	32	5.0	0.237	6.1	LOS A	1.1	8.6	0.49	0.39	0.49	54.1
Approach		230	2.2	0.237	6.0	LOS A	1.1	8.6	0.49	0.39	0.49	55.6
West: Taylor-Kidd Boulevard (CR23)												
5	L2	9	0.0	0.196	5.4	LOS A	0.9	6.9	0.46	0.35	0.46	56.7
2	T1	145	3.0	0.196	5.5	LOS A	0.9	6.9	0.46	0.35	0.46	56.4
12	R2	38	7.0	0.196	5.7	LOS A	0.9	6.9	0.46	0.35	0.46	54.7
Approach		191	3.7	0.196	5.6	LOS A	0.9	6.9	0.46	0.35	0.46	56.1
All Vehicles		1151	3.6	0.415	6.7	LOS A	2.5	19.3	0.47	0.35	0.47	54.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG FBG PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	46	0.0	0.332	6.6	LOS A	1.8	13.9	0.47	0.34	0.47	55.4
8	T1	205	0.0	0.332	6.6	LOS A	1.8	13.9	0.47	0.34	0.47	55.3
18	R2	112	0.0	0.332	6.6	LOS A	1.8	13.9	0.47	0.34	0.47	53.8
Approach		363	0.0	0.332	6.6	LOS A	1.8	13.9	0.47	0.34	0.47	54.8
East: Taylor-Kidd Boulevard (CR23)												
1	L2	210	0.0	0.429	8.2	LOS A	2.5	19.2	0.56	0.45	0.56	52.6
6	T1	160	5.0	0.429	8.4	LOS A	2.5	19.2	0.56	0.45	0.56	52.3
16	R2	68	0.0	0.429	8.2	LOS A	2.5	19.2	0.56	0.45	0.56	51.1
Approach		438	1.8	0.429	8.3	LOS A	2.5	19.2	0.56	0.45	0.56	52.2
North: County Road 6												
7	L2	28	5.0	0.364	8.3	LOS A	1.8	14.1	0.61	0.55	0.61	54.1
4	T1	277	0.0	0.364	8.1	LOS A	1.8	14.1	0.61	0.55	0.61	54.2
14	R2	16	18.0	0.364	8.9	LOS A	1.8	14.1	0.61	0.55	0.61	52.1
Approach		322	1.4	0.364	8.2	LOS A	1.8	14.1	0.61	0.55	0.61	54.1
West: Taylor-Kidd Boulevard (CR23)												
5	L2	25	7.0	0.340	8.8	LOS A	1.5	12.3	0.63	0.61	0.63	53.5
2	T1	162	6.0	0.340	8.8	LOS A	1.5	12.3	0.63	0.61	0.63	53.6
12	R2	76	3.0	0.340	8.6	LOS A	1.5	12.3	0.63	0.61	0.63	52.2
Approach		263	5.2	0.340	8.7	LOS A	1.5	12.3	0.63	0.61	0.63	53.1
All Vehicles		1386	1.9	0.429	7.9	LOS A	2.5	19.2	0.56	0.47	0.56	53.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG Alt1 Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	70	0.0	0.655	12.3	LOS B	6.5	50.5	0.65	0.49	0.70	51.1
8	T1	299	4.0	0.655	12.4	LOS B	6.5	50.5	0.65	0.49	0.70	50.9
18	R2	363	2.0	0.655	12.4	LOS B	6.5	50.5	0.65	0.49	0.70	49.6
Approach		732	2.6	0.655	12.4	LOS B	6.5	50.5	0.65	0.49	0.70	50.3
East: Taylor-Kidd Boulevard (CR23)												
1	L2	167	8.0	0.392	8.8	LOS A	1.9	15.5	0.59	0.53	0.59	51.9
6	T1	143	7.0	0.392	8.8	LOS A	1.9	15.5	0.59	0.53	0.59	51.9
16	R2	29	0.0	0.392	8.5	LOS A	1.9	15.5	0.59	0.53	0.59	50.8
Approach		340	6.9	0.392	8.8	LOS A	1.9	15.5	0.59	0.53	0.59	51.8
North: County Road 6												
7	L2	24	0.0	0.309	7.3	LOS A	1.5	11.5	0.57	0.50	0.57	55.0
4	T1	221	2.0	0.309	7.3	LOS A	1.5	11.5	0.57	0.50	0.57	54.8
14	R2	32	5.0	0.309	7.5	LOS A	1.5	11.5	0.57	0.50	0.57	53.2
Approach		276	2.2	0.309	7.4	LOS A	1.5	11.5	0.57	0.50	0.57	54.6
West: Taylor-Kidd Boulevard (CR23)												
5	L2	9	0.0	0.223	6.4	LOS A	1.0	7.7	0.54	0.48	0.54	55.9
2	T1	145	3.0	0.223	6.5	LOS A	1.0	7.7	0.54	0.48	0.54	55.6
12	R2	38	7.0	0.223	6.6	LOS A	1.0	7.7	0.54	0.48	0.54	53.9
Approach		191	3.7	0.223	6.5	LOS A	1.0	7.7	0.54	0.48	0.54	55.3
All Vehicles		1539	3.6	0.655	9.9	LOS A	6.5	50.5	0.61	0.50	0.64	51.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG Alt1 Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	46	0.0	0.467	8.5	LOS A	3.0	22.9	0.55	0.41	0.55	54.0
8	T1	272	0.0	0.467	8.5	LOS A	3.0	22.9	0.55	0.41	0.55	53.9
18	R2	193	0.0	0.467	8.5	LOS A	3.0	22.9	0.55	0.41	0.55	52.5
Approach		511	0.0	0.467	8.5	LOS A	3.0	22.9	0.55	0.41	0.55	53.4
East: Taylor-Kidd Boulevard (CR23)												
1	L2	420	0.0	0.675	14.5	LOS B	9.1	70.1	0.80	0.94	1.31	47.8
6	T1	160	5.0	0.675	14.7	LOS B	9.1	70.1	0.80	0.94	1.31	47.6
16	R2	68	0.0	0.675	14.5	LOS B	9.1	70.1	0.80	0.94	1.31	46.6
Approach		648	1.2	0.675	14.5	LOS B	9.1	70.1	0.80	0.94	1.31	47.6
North: County Road 6												
7	L2	28	5.0	0.568	14.5	LOS B	4.4	33.5	0.78	0.94	1.24	49.8
4	T1	362	0.0	0.568	14.2	LOS B	4.4	33.5	0.78	0.94	1.24	49.9
14	R2	16	18.0	0.568	15.1	LOS C	4.4	33.5	0.78	0.94	1.24	48.1
Approach		407	1.1	0.568	14.3	LOS B	4.4	33.5	0.78	0.94	1.24	49.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	25	7.0	0.459	13.9	LOS B	2.5	19.6	0.74	0.85	1.07	49.9
2	T1	162	6.0	0.459	13.8	LOS B	2.5	19.6	0.74	0.85	1.07	49.9
12	R2	76	3.0	0.459	13.7	LOS B	2.5	19.6	0.74	0.85	1.07	48.7
Approach		263	5.2	0.459	13.8	LOS B	2.5	19.6	0.74	0.85	1.07	49.6
All Vehicles		1828	1.4	0.675	12.7	LOS B	9.1	70.1	0.71	0.78	1.04	49.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG Alt23 Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	162	0.0	0.735	15.2	LOS C	12.9	99.7	0.76	0.70	1.04	48.8
8	T1	299	4.0	0.735	15.3	LOS C	12.9	99.7	0.76	0.70	1.04	48.6
18	R2	363	2.0	0.735	15.2	LOS C	12.9	99.7	0.76	0.70	1.04	47.5
Approach		824	2.3	0.735	15.2	LOS C	12.9	99.7	0.76	0.70	1.04	48.1
East: Taylor-Kidd Boulevard (CR23)												
1	L2	167	8.0	0.431	10.2	LOS B	2.4	19.3	0.65	0.68	0.77	50.9
6	T1	143	7.0	0.431	10.1	LOS B	2.4	19.3	0.65	0.68	0.77	51.0
16	R2	29	0.0	0.431	9.8	LOS A	2.4	19.3	0.65	0.68	0.77	49.9
Approach		340	6.9	0.431	10.1	LOS B	2.4	19.3	0.65	0.68	0.77	50.9
North: County Road 6												
7	L2	24	0.0	0.339	8.3	LOS A	1.6	12.5	0.62	0.60	0.62	54.2
4	T1	221	2.0	0.339	8.4	LOS A	1.6	12.5	0.62	0.60	0.62	54.0
14	R2	32	5.0	0.339	8.5	LOS A	1.6	12.5	0.62	0.60	0.62	52.4
Approach		276	2.2	0.339	8.4	LOS A	1.6	12.5	0.62	0.60	0.62	53.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	9	0.0	0.270	6.9	LOS A	1.2	9.6	0.56	0.50	0.56	55.4
2	T1	145	3.0	0.270	7.1	LOS A	1.2	9.6	0.56	0.50	0.56	55.2
12	R2	77	7.0	0.270	7.2	LOS A	1.2	9.6	0.56	0.50	0.56	53.5
Approach		230	4.2	0.270	7.1	LOS A	1.2	9.6	0.56	0.50	0.56	54.6
All Vehicles		1671	3.5	0.735	11.9	LOS B	12.9	99.7	0.69	0.65	0.85	50.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 LG Alt23 Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	96	0.0	0.513	9.3	LOS A	3.5	26.6	0.58	0.44	0.58	53.1
8	T1	272	0.0	0.513	9.3	LOS A	3.5	26.6	0.58	0.44	0.58	53.0
18	R2	193	0.0	0.513	9.3	LOS A	3.5	26.6	0.58	0.44	0.58	51.6
Approach		561	0.0	0.513	9.3	LOS A	3.5	26.6	0.58	0.44	0.58	52.5
East: Taylor-Kidd Boulevard (CR23)												
1	L2	420	0.0	0.710	16.5	LOS C	10.2	78.1	0.85	1.08	1.53	46.6
6	T1	160	5.0	0.710	16.7	LOS C	10.2	78.1	0.85	1.08	1.53	46.4
16	R2	68	0.0	0.710	16.5	LOS C	10.2	78.1	0.85	1.08	1.53	45.5
Approach		648	1.2	0.710	16.6	LOS C	10.2	78.1	0.85	1.08	1.53	46.5
North: County Road 6												
7	L2	28	5.0	0.598	16.0	LOS C	4.7	36.1	0.80	0.98	1.34	48.8
4	T1	362	0.0	0.598	15.8	LOS C	4.7	36.1	0.80	0.98	1.34	48.9
14	R2	16	18.0	0.598	16.7	LOS C	4.7	36.1	0.80	0.98	1.34	47.2
Approach		407	1.1	0.598	15.8	LOS C	4.7	36.1	0.80	0.98	1.34	48.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	25	7.0	0.594	18.1	LOS C	4.1	32.1	0.80	0.99	1.38	47.2
2	T1	162	6.0	0.594	18.0	LOS C	4.1	32.1	0.80	0.99	1.38	47.3
12	R2	155	3.0	0.594	17.9	LOS C	4.1	32.1	0.80	0.99	1.38	46.2
Approach		342	4.7	0.594	18.0	LOS C	4.1	32.1	0.80	0.99	1.38	46.8
All Vehicles		1958	1.5	0.710	14.6	LOS B	10.2	78.1	0.75	0.86	1.19	48.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation LG FBG AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	8	0.0	0.198	6.1	LOS A	0.8	6.7	0.53	0.46	0.53	55.9
8	T1	1	0.0	0.198	6.1	LOS A	0.8	6.7	0.53	0.46	0.53	55.7
18	R2	159	6.0	0.198	6.3	LOS A	0.8	6.7	0.53	0.46	0.53	53.9
Approach		167	5.7	0.198	6.3	LOS A	0.8	6.7	0.53	0.46	0.53	54.0
East: Taylor-Kidd Boulevard (CR23)												
1	L2	68	8.0	0.270	5.2	LOS A	1.4	11.4	0.11	0.03	0.11	55.9
6	T1	271	1.0	0.270	5.1	LOS A	1.4	11.4	0.11	0.03	0.11	56.2
16	R2	11	75.0	0.270	7.0	LOS A	1.4	11.4	0.11	0.03	0.11	51.8
Approach		350	4.7	0.270	5.2	LOS A	1.4	11.4	0.11	0.03	0.11	56.0
North: Coronation Boulevard (CR24)												
7	L2	10	71.0	0.031	6.8	LOS A	0.1	0.9	0.43	0.29	0.43	50.7
4	T1	4	67.0	0.031	6.6	LOS A	0.1	0.9	0.43	0.29	0.43	52.4
14	R2	4	33.0	0.031	5.3	LOS A	0.1	0.9	0.43	0.29	0.43	51.6
Approach		18	61.1	0.031	6.4	LOS A	0.1	0.9	0.43	0.29	0.43	51.3
West: Taylor-Kidd Boulevard (CR23)												
5	L2	7	40.0	0.332	7.2	LOS A	1.9	14.7	0.31	0.16	0.31	54.2
2	T1	395	2.0	0.332	6.1	LOS A	1.9	14.7	0.31	0.16	0.31	56.2
12	R2	2	50.0	0.332	7.5	LOS A	1.9	14.7	0.31	0.16	0.31	52.8
Approach		403	2.9	0.332	6.1	LOS A	1.9	14.7	0.31	0.16	0.31	56.2
All Vehicles		939	5.2	0.332	5.8	LOS A	1.9	14.7	0.27	0.17	0.27	55.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation LG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	8	0.0	0.287	8.4	LOS A	1.2	9.7	0.64	0.64	0.64	54.0
8	T1	1	0.0	0.287	8.4	LOS A	1.2	9.7	0.64	0.64	0.64	53.8
18	R2	191	6.0	0.287	8.7	LOS A	1.2	9.7	0.64	0.64	0.64	52.1
Approach		200	5.7	0.287	8.7	LOS A	1.2	9.7	0.64	0.64	0.64	52.2
East: Taylor-Kidd Boulevard (CR23)												
1	L2	93	8.0	0.346	6.1	LOS A	2.1	16.2	0.12	0.03	0.12	55.2
6	T1	346	1.0	0.346	5.9	LOS A	2.1	16.2	0.12	0.03	0.12	55.5
16	R2	11	75.0	0.346	7.8	LOS A	2.1	16.2	0.12	0.03	0.12	51.2
Approach		450	4.2	0.346	6.0	LOS A	2.1	16.2	0.12	0.03	0.12	55.3
North: Coronation Boulevard (CR24)												
7	L2	10	71.0	0.034	7.5	LOS A	0.1	1.0	0.49	0.36	0.49	50.2
4	T1	4	67.0	0.034	7.4	LOS A	0.1	1.0	0.49	0.36	0.49	51.9
14	R2	4	33.0	0.034	5.9	LOS A	0.1	1.0	0.49	0.36	0.49	51.0
Approach		18	61.1	0.034	7.1	LOS A	0.1	1.0	0.49	0.36	0.49	50.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	7	40.0	0.497	9.6	LOS A	3.5	27.0	0.43	0.26	0.43	52.4
2	T1	579	2.0	0.497	8.5	LOS A	3.5	27.0	0.43	0.26	0.43	54.3
12	R2	2	50.0	0.497	9.9	LOS A	3.5	27.0	0.43	0.26	0.43	51.1
Approach		588	2.6	0.497	8.5	LOS A	3.5	27.0	0.43	0.26	0.43	54.3
All Vehicles		1257	4.5	0.497	7.6	LOS A	3.5	27.0	0.35	0.24	0.35	54.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation LG FBG PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	7	0.0	0.134	5.1	LOS A	0.6	4.4	0.48	0.38	0.48	56.8
8	T1	4	100.0	0.134	9.0	LOS A	0.6	4.4	0.48	0.38	0.48	55.1
18	R2	111	0.0	0.134	5.1	LOS A	0.6	4.4	0.48	0.38	0.48	55.0
Approach		122	3.6	0.134	5.3	LOS A	0.6	4.4	0.48	0.38	0.48	55.1
East: Taylor-Kidd Boulevard (CR23)												
1	L2	179	0.0	0.577	9.6	LOS A	4.5	36.9	0.28	0.11	0.28	52.4
6	T1	468	1.0	0.577	9.6	LOS A	4.5	36.9	0.28	0.11	0.28	52.2
16	R2	57	93.0	0.577	12.1	LOS B	4.5	36.9	0.28	0.11	0.28	47.9
Approach		704	8.1	0.577	9.8	LOS A	4.5	36.9	0.28	0.11	0.28	51.9
North: Coronation Boulevard (CR24)												
7	L2	39	2.0	0.098	6.3	LOS A	0.4	2.9	0.59	0.55	0.59	53.6
4	T1	12	2.0	0.098	6.3	LOS A	0.4	2.9	0.59	0.55	0.59	53.5
14	R2	16	2.0	0.098	6.3	LOS A	0.4	2.9	0.59	0.55	0.59	52.1
Approach		67	2.0	0.098	6.3	LOS A	0.4	2.9	0.59	0.55	0.59	53.2
West: Taylor-Kidd Boulevard (CR23)												
5	L2	15	91.0	0.319	9.5	LOS A	1.6	12.8	0.45	0.33	0.45	51.1
2	T1	305	1.0	0.319	6.5	LOS A	1.6	12.8	0.45	0.33	0.45	55.8
12	R2	10	0.0	0.319	6.5	LOS A	1.6	12.8	0.45	0.33	0.45	54.3
Approach		330	5.1	0.319	6.7	LOS A	1.6	12.8	0.45	0.33	0.45	55.5
All Vehicles		1224	6.5	0.577	8.3	LOS A	4.5	36.9	0.36	0.22	0.36	53.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation LG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: Coronation Boulevard (CR24)												
3	L2	7	0.0	0.184	6.1	LOS A	0.8	6.1	0.54	0.48	0.54	56.0
8	T1	4	100.0	0.184	10.2	LOS B	0.8	6.1	0.54	0.48	0.54	54.4
18	R2	143	0.0	0.184	6.1	LOS A	0.8	6.1	0.54	0.48	0.54	54.3
Approach		154	2.8	0.184	6.2	LOS A	0.8	6.1	0.54	0.48	0.54	54.4
East: Taylor-Kidd Boulevard (CR23)												
1	L2	211	0.0	0.762	15.1	LOS C	9.5	76.0	0.44	0.18	0.44	48.8
6	T1	678	1.0	0.762	15.2	LOS C	9.5	76.0	0.44	0.18	0.44	48.6
16	R2	57	93.0	0.762	17.7	LOS C	9.5	76.0	0.44	0.18	0.44	44.8
Approach		946	6.3	0.762	15.3	LOS C	9.5	76.0	0.44	0.18	0.44	48.4
North: Coronation Boulevard (CR24)												
7	L2	39	2.0	0.125	8.3	LOS A	0.5	3.6	0.65	0.65	0.65	52.1
4	T1	12	2.0	0.125	8.3	LOS A	0.5	3.6	0.65	0.65	0.65	52.0
14	R2	16	2.0	0.125	8.3	LOS A	0.5	3.6	0.65	0.65	0.65	50.7
Approach		67	2.0	0.125	8.3	LOS A	0.5	3.6	0.65	0.65	0.65	51.7
West: Taylor-Kidd Boulevard (CR23)												
5	L2	15	91.0	0.407	11.0	LOS B	2.2	17.7	0.53	0.41	0.53	50.2
2	T1	387	1.0	0.407	7.9	LOS A	2.2	17.7	0.53	0.41	0.53	54.7
12	R2	10	0.0	0.407	7.9	LOS A	2.2	17.7	0.53	0.41	0.53	53.3
Approach		412	4.3	0.407	8.0	LOS A	2.2	17.7	0.53	0.41	0.53	54.5
All Vehicles		1579	5.2	0.762	12.2	LOS B	9.5	76.0	0.48	0.29	0.48	50.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG FBG AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	125	0.0	0.921	36.6	LOS E	25.2	195.8	1.00	1.79	3.06	38.2
8	T1	405	4.0	0.921	36.8	LOS E	25.2	195.8	1.00	1.79	3.06	38.1
18	R2	247	2.0	0.921	36.7	LOS E	25.2	195.8	1.00	1.79	3.06	37.4
Approach		777	2.7	0.921	36.7	LOS E	25.2	195.8	1.00	1.79	3.06	37.9
East: Taylor-Kidd Boulevard (CR23)												
1	L2	93	8.0	0.740	21.5	LOS C	8.7	70.0	0.86	1.21	1.82	45.0
6	T1	410	7.0	0.740	21.5	LOS C	8.7	70.0	0.86	1.21	1.82	45.1
16	R2	33	0.0	0.740	21.1	LOS C	8.7	70.0	0.86	1.21	1.82	44.2
Approach		536	6.7	0.740	21.4	LOS C	8.7	70.0	0.86	1.21	1.82	45.1
North: County Road 6												
7	L2	123	0.0	0.709	20.4	LOS C	7.2	55.8	0.87	1.15	1.71	45.6
4	T1	316	2.0	0.709	20.5	LOS C	7.2	55.8	0.87	1.15	1.71	45.5
14	R2	49	5.0	0.709	20.6	LOS C	7.2	55.8	0.87	1.15	1.71	44.4
Approach		488	1.8	0.709	20.5	LOS C	7.2	55.8	0.87	1.15	1.71	45.4
West: Taylor-Kidd Boulevard (CR23)												
5	L2	22	0.0	0.529	12.4	LOS B	3.9	30.2	0.73	0.86	1.08	51.2
2	T1	302	3.0	0.529	12.5	LOS B	3.9	30.2	0.73	0.86	1.08	51.0
12	R2	79	7.0	0.529	12.7	LOS B	3.9	30.2	0.73	0.86	1.08	49.6
Approach		403	3.6	0.529	12.5	LOS B	3.9	30.2	0.73	0.86	1.08	50.7
All Vehicles		2204	3.7	0.921	25.0	LOS C	25.2	195.8	0.89	1.34	2.10	43.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG FBG PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	72	0.0	0.567	12.6	LOS B	4.9	37.5	0.76	0.90	1.13	50.8
8	T1	288	0.0	0.567	12.6	LOS B	4.9	37.5	0.76	0.90	1.13	50.7
18	R2	115	0.0	0.567	12.6	LOS B	4.9	37.5	0.76	0.90	1.13	49.4
Approach		475	0.0	0.567	12.6	LOS B	4.9	37.5	0.76	0.90	1.13	50.4
East: Taylor-Kidd Boulevard (CR23)												
1	L2	216	0.0	0.615	13.1	LOS B	6.5	50.2	0.75	0.87	1.16	49.6
6	T1	236	5.0	0.615	13.2	LOS B	6.5	50.2	0.75	0.87	1.16	49.3
16	R2	108	0.0	0.615	13.1	LOS B	6.5	50.2	0.75	0.87	1.16	48.2
Approach		560	2.1	0.615	13.1	LOS B	6.5	50.2	0.75	0.87	1.16	49.2
North: County Road 6												
7	L2	47	5.0	0.687	17.5	LOS C	7.7	59.0	0.85	1.10	1.56	47.8
4	T1	480	0.0	0.687	17.3	LOS C	7.7	59.0	0.85	1.10	1.56	47.9
14	R2	16	18.0	0.687	18.1	LOS C	7.7	59.0	0.85	1.10	1.56	46.3
Approach		543	1.0	0.687	17.3	LOS C	7.7	59.0	0.85	1.10	1.56	47.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	26	7.0	0.858	35.7	LOS E	11.9	94.5	0.94	1.50	2.64	38.7
2	T1	389	6.0	0.858	35.7	LOS E	11.9	94.5	0.94	1.50	2.64	38.7
12	R2	110	3.0	0.858	35.5	LOS E	11.9	94.5	0.94	1.50	2.64	38.0
Approach		525	5.4	0.858	35.6	LOS E	11.9	94.5	0.94	1.50	2.64	38.6
All Vehicles		2103	2.2	0.858	19.7	LOS C	11.9	94.5	0.83	1.09	1.63	46.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt1 Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	125	0.0	1.237	134.9	LOS F	90.0	699.5	1.00	3.73	8.09	19.0
8	T1	489	4.0	1.237	135.1	LOS F	90.0	699.5	1.00	3.73	8.09	19.0
18	R2	430	2.0	1.237	135.0	LOS F	90.0	699.5	1.00	3.73	8.09	18.8
Approach		1045	2.7	1.237	135.0	LOS F	90.0	699.5	1.00	3.73	8.09	18.9
East: Taylor-Kidd Boulevard (CR23)												
1	L2	168	8.0	0.822	27.2	LOS D	12.9	103.9	0.92	1.42	2.28	41.9
6	T1	410	7.0	0.822	27.1	LOS D	12.9	103.9	0.92	1.42	2.28	42.0
16	R2	33	0.0	0.822	26.8	LOS D	12.9	103.9	0.92	1.42	2.28	41.2
Approach		611	6.9	0.822	27.1	LOS D	12.9	103.9	0.92	1.42	2.28	41.9
North: County Road 6												
7	L2	123	0.0	0.825	30.3	LOS D	10.9	83.9	0.94	1.40	2.34	40.8
4	T1	363	2.0	0.825	30.4	LOS D	10.9	83.9	0.94	1.40	2.34	40.7
14	R2	49	5.0	0.825	30.5	LOS D	10.9	83.9	0.94	1.40	2.34	39.8
Approach		535	1.8	0.825	30.4	LOS D	10.9	83.9	0.94	1.40	2.34	40.6
West: Taylor-Kidd Boulevard (CR23)												
5	L2	22	0.0	0.603	16.0	LOS C	4.7	36.8	0.80	0.98	1.36	48.7
2	T1	302	3.0	0.603	16.2	LOS C	4.7	36.8	0.80	0.98	1.36	48.6
12	R2	79	7.0	0.603	16.4	LOS C	4.7	36.8	0.80	0.98	1.36	47.3
Approach		403	3.6	0.603	16.2	LOS C	4.7	36.8	0.80	0.98	1.36	48.3
All Vehicles		2593	3.7	1.237	69.5	LOS F	90.0	699.5	0.94	2.28	4.49	28.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt1 Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	72	0.0	0.706	16.7	LOS C	9.5	72.4	0.85	1.11	1.54	48.2
8	T1	355	0.0	0.706	16.7	LOS C	9.5	72.4	0.85	1.11	1.54	48.1
18	R2	197	0.0	0.706	16.7	LOS C	9.5	72.4	0.85	1.11	1.54	47.0
Approach		624	0.0	0.706	16.7	LOS C	9.5	72.4	0.85	1.11	1.54	47.8
East: Taylor-Kidd Boulevard (CR23)												
1	L2	426	0.0	0.898	32.8	LOS D	22.8	175.7	1.00	1.69	2.80	39.0
6	T1	236	5.0	0.898	33.0	LOS D	22.8	175.7	1.00	1.69	2.80	38.9
16	R2	108	0.0	0.898	32.8	LOS D	22.8	175.7	1.00	1.69	2.80	38.2
Approach		770	1.5	0.898	32.8	LOS D	22.8	175.7	1.00	1.69	2.80	38.9
North: County Road 6												
7	L2	47	5.0	0.982	56.8	LOS F	23.0	176.1	1.00	1.98	4.03	31.9
4	T1	565	0.0	0.982	56.5	LOS F	23.0	176.1	1.00	1.98	4.03	31.9
14	R2	16	18.0	0.982	57.5	LOS F	23.0	176.1	1.00	1.98	4.03	31.2
Approach		628	0.8	0.982	56.5	LOS F	23.0	176.1	1.00	1.98	4.03	31.9
West: Taylor-Kidd Boulevard (CR23)												
5	L2	26	7.0	1.159	122.5	LOS F	35.2	279.6	1.00	2.80	7.13	20.4
2	T1	389	6.0	1.159	122.4	LOS F	35.2	279.6	1.00	2.80	7.13	20.4
12	R2	110	3.0	1.159	122.2	LOS F	35.2	279.6	1.00	2.80	7.13	20.2
Approach		525	5.4	1.159	122.4	LOS F	35.2	279.6	1.00	2.80	7.13	20.3
All Vehicles		2547	1.8	1.159	53.2	LOS F	35.2	279.6	0.96	1.85	3.69	32.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt23 Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Total Flows veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	216	0.0	1.245	136.5	LOS F	102.2	793.2	1.00	3.76	7.73	18.9
8	T1	489	4.0	1.245	136.7	LOS F	102.2	793.2	1.00	3.76	7.73	18.8
18	R2	430	2.0	1.245	136.6	LOS F	102.2	793.2	1.00	3.76	7.73	18.7
Approach		1136	2.5	1.245	136.6	LOS F	102.2	793.2	1.00	3.76	7.73	18.8
East: Taylor-Kidd Boulevard (CR23)												
1	L2	168	8.0	0.884	36.0	LOS E	15.7	126.2	0.97	1.63	2.84	38.2
6	T1	410	7.0	0.884	35.9	LOS E	15.7	126.2	0.97	1.63	2.84	38.3
16	R2	33	0.0	0.884	35.6	LOS E	15.7	126.2	0.97	1.63	2.84	37.6
Approach		611	6.9	0.884	35.9	LOS E	15.7	126.2	0.97	1.63	2.84	38.2
North: County Road 6												
7	L2	49	0.0	0.895	41.3	LOS E	13.7	106.1	0.98	1.60	2.96	36.6
4	T1	363	2.0	0.895	41.4	LOS E	13.7	106.1	0.98	1.60	2.96	36.5
14	R2	123	5.0	0.895	41.6	LOS E	13.7	106.1	0.98	1.60	2.96	35.8
Approach		535	2.5	0.895	41.5	LOS E	13.7	106.1	0.98	1.60	2.96	36.3
West: Taylor-Kidd Boulevard (CR23)												
5	L2	22	0.0	0.615	15.5	LOS C	5.2	41.1	0.79	0.99	1.36	49.1
2	T1	302	3.0	0.615	15.7	LOS C	5.2	41.1	0.79	0.99	1.36	48.9
12	R2	118	7.0	0.615	15.9	LOS C	5.2	41.1	0.79	0.99	1.36	47.5
Approach		442	3.9	0.615	15.7	LOS C	5.2	41.1	0.79	0.99	1.36	48.5
All Vehicles		2724	3.7	1.245	75.7	LOS F	102.2	793.2	0.95	2.41	4.66	27.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt23 Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	123	0.0	0.728	17.1	LOS C	11.3	85.5	0.87	1.12	1.59	47.7
8	T1	355	0.0	0.728	17.1	LOS C	11.3	85.5	0.87	1.12	1.59	47.6
18	R2	197	0.0	0.728	17.1	LOS C	11.3	85.5	0.87	1.12	1.59	46.5
Approach		675	0.0	0.728	17.1	LOS C	11.3	85.5	0.87	1.12	1.59	47.3
East: Taylor-Kidd Boulevard (CR23)												
1	L2	426	0.0	0.943	41.3	LOS E	26.5	204.0	1.00	1.87	3.34	35.9
6	T1	236	5.0	0.943	41.5	LOS E	26.5	204.0	1.00	1.87	3.34	35.8
16	R2	108	0.0	0.943	41.3	LOS E	26.5	204.0	1.00	1.87	3.34	35.2
Approach		770	1.5	0.943	41.4	LOS E	26.5	204.0	1.00	1.87	3.34	35.7
North: County Road 6												
7	L2	47	5.0	1.035	72.1	LOS F	28.1	215.0	1.00	2.23	4.91	28.2
4	T1	565	0.0	1.035	71.8	LOS F	28.1	215.0	1.00	2.23	4.91	28.3
14	R2	16	18.0	1.035	72.8	LOS F	28.1	215.0	1.00	2.23	4.91	27.7
Approach		628	0.8	1.035	71.8	LOS F	28.1	215.0	1.00	2.23	4.91	28.2
West: Taylor-Kidd Boulevard (CR23)												
5	L2	26	7.0	1.304	177.5	LOS F	55.8	442.6	1.00	3.57	9.74	15.6
2	T1	389	6.0	1.304	177.4	LOS F	55.8	442.6	1.00	3.57	9.74	15.6
12	R2	189	3.0	1.304	177.2	LOS F	55.8	442.6	1.00	3.57	9.74	15.5
Approach		604	5.1	1.304	177.4	LOS F	55.8	442.6	1.00	3.57	9.74	15.6
All Vehicles		2677	1.8	1.304	73.1	LOS F	55.8	442.6	0.97	2.15	4.71	27.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation HG FBG AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: Coronation Boulevard (CR24)												
3	L2	12	0.0	0.367	9.8	LOS A	1.7	13.9	0.67	0.70	0.76	52.9
8	T1	2	0.0	0.367	9.8	LOS A	1.7	13.9	0.67	0.70	0.76	52.7
18	R2	238	6.0	0.367	10.1	LOS B	1.7	13.9	0.67	0.70	0.76	51.1
Approach		252	5.7	0.367	10.1	LOS B	1.7	13.9	0.67	0.70	0.76	51.2
East: Taylor-Kidd Boulevard (CR23)												
1	L2	103	8.0	0.398	6.7	LOS A	2.5	19.9	0.17	0.05	0.17	54.7
6	T1	390	1.0	0.398	6.6	LOS A	2.5	19.9	0.17	0.05	0.17	54.9
16	R2	16	75.0	0.398	8.5	LOS A	2.5	19.9	0.17	0.05	0.17	50.8
Approach		510	4.8	0.398	6.7	LOS A	2.5	19.9	0.17	0.05	0.17	54.7
North: Coronation Boulevard (CR24)												
7	L2	14	71.0	0.054	8.2	LOS A	0.1	1.5	0.52	0.42	0.52	49.8
4	T1	7	67.0	0.054	8.1	LOS A	0.1	1.5	0.52	0.42	0.52	51.4
14	R2	7	33.0	0.054	6.6	LOS A	0.1	1.5	0.52	0.42	0.52	50.6
Approach		27	60.9	0.054	7.8	LOS A	0.1	1.5	0.52	0.42	0.52	50.4
West: Taylor-Kidd Boulevard (CR23)												
5	L2	10	40.0	0.514	10.1	LOS B	3.6	28.0	0.48	0.31	0.48	52.0
2	T1	579	2.0	0.514	8.9	LOS A	3.6	28.0	0.48	0.31	0.48	53.9
12	R2	4	50.0	0.514	10.4	LOS B	3.6	28.0	0.48	0.31	0.48	50.7
Approach		593	3.0	0.514	8.9	LOS A	3.6	28.0	0.48	0.31	0.48	53.9
All Vehicles		1383	5.3	0.514	8.3	LOS A	3.6	28.0	0.40	0.29	0.41	53.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation HG FBG PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	8	0.0	0.161	5.6	LOS A	0.7	5.3	0.52	0.44	0.52	56.3
8	T1	4	100.0	0.161	9.7	LOS A	0.7	5.3	0.52	0.44	0.52	54.7
18	R2	127	0.0	0.161	5.6	LOS A	0.7	5.3	0.52	0.44	0.52	54.6
Approach		139	3.1	0.161	5.8	LOS A	0.7	5.3	0.52	0.44	0.52	54.7
East: Taylor-Kidd Boulevard (CR23)												
1	L2	207	0.0	0.667	11.8	LOS B	6.2	50.4	0.35	0.15	0.35	50.8
6	T1	537	1.0	0.667	11.8	LOS B	6.2	50.4	0.35	0.15	0.35	50.6
16	R2	65	93.0	0.667	14.3	LOS B	6.2	50.4	0.35	0.15	0.35	46.5
Approach		809	8.2	0.667	12.0	LOS B	6.2	50.4	0.35	0.15	0.35	50.3
North: Coronation Boulevard (CR24)												
7	L2	45	2.0	0.123	7.2	LOS A	0.5	3.7	0.62	0.62	0.62	52.9
4	T1	14	2.0	0.123	7.2	LOS A	0.5	3.7	0.62	0.62	0.62	52.8
14	R2	18	2.0	0.123	7.2	LOS A	0.5	3.7	0.62	0.62	0.62	51.4
Approach		77	2.0	0.123	7.2	LOS A	0.5	3.7	0.62	0.62	0.62	52.5
West: Taylor-Kidd Boulevard (CR23)												
5	L2	17	91.0	0.374	10.5	LOS B	2.0	15.6	0.51	0.40	0.51	50.5
2	T1	346	1.0	0.374	7.5	LOS A	2.0	15.6	0.51	0.40	0.51	55.0
12	R2	11	0.0	0.374	7.4	LOS A	2.0	15.6	0.51	0.40	0.51	53.6
Approach		374	5.2	0.374	7.6	LOS A	2.0	15.6	0.51	0.40	0.51	54.8
All Vehicles		1399	6.5	0.667	9.9	LOS A	6.2	50.4	0.43	0.27	0.43	52.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation HG Total AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	12	0.0	0.502	14.7	LOS B	2.9	23.0	0.76	0.89	1.16	49.3
8	T1	2	0.0	0.502	14.7	LOS B	2.9	23.0	0.76	0.89	1.16	49.2
18	R2	271	6.0	0.502	15.1	LOS C	2.9	23.0	0.76	0.89	1.16	47.8
Approach		285	5.7	0.502	15.1	LOS C	2.9	23.0	0.76	0.89	1.16	47.9
East: Taylor-Kidd Boulevard (CR23)												
1	L2	128	8.0	0.475	7.8	LOS A	3.4	26.8	0.19	0.06	0.19	53.8
6	T1	465	1.0	0.475	7.6	LOS A	3.4	26.8	0.19	0.06	0.19	54.1
16	R2	16	75.0	0.475	9.6	LOS A	3.4	26.8	0.19	0.06	0.19	50.0
Approach		610	4.5	0.475	7.7	LOS A	3.4	26.8	0.19	0.06	0.19	53.9
North: Coronation Boulevard (CR24)												
7	L2	14	71.0	0.060	9.2	LOS A	0.1	1.7	0.56	0.48	0.56	49.2
4	T1	7	67.0	0.060	9.0	LOS A	0.1	1.7	0.56	0.48	0.56	50.8
14	R2	7	33.0	0.060	7.3	LOS A	0.1	1.7	0.56	0.48	0.56	50.0
Approach		27	60.9	0.060	8.7	LOS A	0.1	1.7	0.56	0.48	0.56	49.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	10	40.0	0.692	14.7	LOS B	8.5	66.1	0.68	0.55	0.80	48.9
2	T1	764	2.0	0.692	13.5	LOS B	8.5	66.1	0.68	0.55	0.80	50.6
12	R2	4	50.0	0.692	15.0	LOS B	8.5	66.1	0.68	0.55	0.80	47.8
Approach		778	2.7	0.692	13.5	LOS B	8.5	66.1	0.68	0.55	0.80	50.6
All Vehicles		1700	4.8	0.692	11.6	LOS B	8.5	66.1	0.52	0.43	0.64	51.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 23 / Coronation HG Total PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Coronation Boulevard (CR24)												
3	L2	8	0.0	0.215	6.7	LOS A	0.9	7.2	0.58	0.53	0.58	55.5
8	T1	4	100.0	0.215	11.1	LOS B	0.9	7.2	0.58	0.53	0.58	53.9
18	R2	160	0.0	0.215	6.7	LOS A	0.9	7.2	0.58	0.53	0.58	53.8
Approach		172	2.5	0.215	6.8	LOS A	0.9	7.2	0.58	0.53	0.58	53.9
East: Taylor-Kidd Boulevard (CR23)												
1	L2	238	0.0	0.852	20.9	LOS C	13.9	111.8	0.61	0.27	0.61	45.3
6	T1	747	1.0	0.852	21.0	LOS C	13.9	111.8	0.61	0.27	0.61	45.2
16	R2	65	93.0	0.852	23.5	LOS C	13.9	111.8	0.61	0.27	0.61	41.9
Approach		1050	6.5	0.852	21.1	LOS C	13.9	111.8	0.61	0.27	0.61	45.0
North: Coronation Boulevard (CR24)												
7	L2	45	2.0	0.158	9.6	LOS A	0.6	4.6	0.68	0.68	0.68	51.2
4	T1	14	2.0	0.158	9.6	LOS A	0.6	4.6	0.68	0.68	0.68	51.1
14	R2	18	2.0	0.158	9.6	LOS A	0.6	4.6	0.68	0.68	0.68	49.8
Approach		77	2.0	0.158	9.6	LOS A	0.6	4.6	0.68	0.68	0.68	50.8
West: Taylor-Kidd Boulevard (CR23)												
5	L2	17	91.0	0.468	12.3	LOS B	2.7	21.2	0.59	0.49	0.59	49.4
2	T1	428	1.0	0.468	9.1	LOS A	2.7	21.2	0.59	0.49	0.59	53.7
12	R2	11	0.0	0.468	9.1	LOS A	2.7	21.2	0.59	0.49	0.59	52.3
Approach		457	4.4	0.468	9.2	LOS A	2.7	21.2	0.59	0.49	0.59	53.5
All Vehicles		1755	5.4	0.852	16.1	LOS C	13.9	111.8	0.61	0.37	0.61	48.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt1 Total AM 2In]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m				
South: County Road 6												
3	L2	125	0.0	0.579	12.5	LOS B	4.9	38.4	0.70	0.84	1.10	50.6
8	T1	489	4.0	0.579	12.5	LOS B	5.0	38.8	0.69	0.84	1.09	50.6
18	R2	430	2.0	0.579	11.8	LOS B	5.0	38.8	0.68	0.81	1.06	50.2
Approach		1045	2.7	0.579	12.2	LOS B	5.0	38.8	0.69	0.83	1.08	50.5
East: Taylor-Kidd Blvd (CR23)												
1	L2	168	8.0	0.421	11.1	LOS B	2.1	16.8	0.65	0.73	0.87	50.2
6	T1	410	7.0	0.421	10.5	LOS B	2.1	16.8	0.64	0.71	0.84	52.1
16	R2	33	0.0	0.421	9.9	LOS A	2.1	16.8	0.64	0.71	0.83	51.6
Approach		611	6.9	0.421	10.6	LOS B	2.1	16.8	0.65	0.72	0.85	51.5
North: County Road 6												
7	L2	123	0.0	0.380	10.4	LOS B	1.8	13.8	0.67	0.72	0.83	51.3
4	T1	363	2.0	0.380	10.0	LOS B	1.8	13.8	0.65	0.70	0.81	52.5
14	R2	49	5.0	0.380	9.9	LOS A	1.8	13.7	0.65	0.70	0.80	51.7
Approach		535	1.8	0.380	10.1	LOS B	1.8	13.8	0.66	0.71	0.81	52.1
West: Taylor-Kidd Blvd (CR23)												
5	L2	22	0.0	0.274	8.2	LOS A	1.1	8.3	0.61	0.61	0.61	54.3
2	T1	302	3.0	0.274	8.1	LOS A	1.1	8.3	0.60	0.60	0.60	54.3
12	R2	79	7.0	0.274	8.0	LOS A	1.0	8.2	0.59	0.59	0.59	53.0
Approach		403	3.6	0.274	8.1	LOS A	1.1	8.3	0.60	0.60	0.60	54.1
All Vehicles		2593	3.7	0.579	10.8	LOS B	5.0	38.8	0.66	0.74	0.89	51.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt1 Total PM 2In]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Total Flows veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	72	3.0	0.348	8.3	LOS A	1.6	12.0	0.58	0.56	0.58	53.8
8	T1	355	0.0	0.348	8.0	LOS A	1.6	12.0	0.57	0.55	0.57	54.2
18	R2	197	0.0	0.348	7.6	LOS A	1.6	11.9	0.56	0.53	0.56	53.4
Approach		624	0.3	0.348	7.9	LOS A	1.6	12.0	0.57	0.55	0.57	53.9
East: Taylor-Kidd Blvd (CR23)												
1	L2	426	0.0	0.443	8.9	LOS A	2.5	19.4	0.60	0.61	0.71	50.5
6	T1	236	5.0	0.401	9.0	LOS A	2.0	15.3	0.59	0.58	0.64	53.9
16	R2	108	0.0	0.401	8.8	LOS A	2.0	15.3	0.59	0.58	0.64	52.4
Approach		770	1.5	0.443	8.9	LOS A	2.5	19.4	0.60	0.60	0.67	51.7
North: County Road 6												
7	L2	47	5.0	0.443	12.0	LOS B	2.4	18.2	0.70	0.78	0.96	51.4
4	T1	565	0.0	0.443	11.2	LOS B	2.4	18.3	0.69	0.77	0.95	52.1
14	R2	16	18.0	0.443	11.6	LOS B	2.4	18.3	0.68	0.76	0.94	50.5
Approach		628	0.8	0.443	11.3	LOS B	2.4	18.3	0.69	0.77	0.95	52.0
West: Taylor-Kidd Blvd (CR23)												
5	L2	26	7.0	0.501	17.1	LOS C	2.5	19.7	0.75	0.88	1.20	48.0
2	T1	389	6.0	0.501	16.3	LOS C	2.5	20.1	0.74	0.87	1.19	48.6
12	R2	110	3.0	0.501	15.1	LOS C	2.5	20.1	0.73	0.86	1.17	48.1
Approach		525	5.4	0.501	16.1	LOS C	2.5	20.1	0.74	0.87	1.18	48.5
All Vehicles		2547	1.9	0.501	10.7	LOS B	2.5	20.1	0.64	0.68	0.82	51.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt23 Total AM 2In]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total	HV				Vehicles	Distance				
		veh/h	%	v/c	sec		veh	m				km/h
South: County Road 6												
3	L2	216	0.0	0.629	14.0	LOS B	6.2	48.2	0.74	0.93	1.25	49.2
8	T1	489	4.0	0.629	13.8	LOS B	6.3	48.9	0.73	0.92	1.24	49.5
18	R2	430	2.0	0.629	13.2	LOS B	6.3	48.9	0.72	0.90	1.22	49.3
Approach		1136	2.5	0.629	13.6	LOS B	6.3	48.9	0.73	0.91	1.23	49.4
East: Taylor-Kidd Blvd (CR23)												
1	L2	168	8.0	0.456	12.7	LOS B	2.3	19.0	0.69	0.79	1.00	49.1
6	T1	410	7.0	0.456	11.9	LOS B	2.4	19.1	0.68	0.78	0.98	51.1
16	R2	33	0.0	0.456	11.3	LOS B	2.4	19.1	0.67	0.77	0.97	50.7
Approach		611	6.9	0.456	12.1	LOS B	2.4	19.1	0.68	0.78	0.98	50.5
North: County Road 6												
7	L2	123	0.0	0.412	11.8	LOS B	2.0	15.5	0.70	0.77	0.94	50.3
4	T1	363	2.0	0.412	11.3	LOS B	2.0	15.5	0.68	0.76	0.92	51.6
14	R2	49	5.0	0.412	11.1	LOS B	2.0	15.5	0.68	0.75	0.91	50.8
Approach		535	1.8	0.412	11.4	LOS B	2.0	15.5	0.69	0.76	0.92	51.2
West: Taylor-Kidd Blvd (CR23)												
5	L2	22	0.0	0.301	8.7	LOS A	1.2	9.3	0.62	0.62	0.62	54.0
2	T1	302	3.0	0.301	8.6	LOS A	1.2	9.3	0.61	0.61	0.61	54.0
12	R2	118	7.0	0.301	8.4	LOS A	1.2	9.2	0.60	0.60	0.60	52.6
Approach		442	3.9	0.301	8.5	LOS A	1.2	9.3	0.61	0.61	0.61	53.6
All Vehicles		2724	3.6	0.629	12.0	LOS B	6.3	48.9	0.69	0.80	1.01	50.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

MOVEMENT SUMMARY

 Site: 101 [County Road 6 / 23 HG Alt23 Total PM 2In]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Total Flows veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: County Road 6												
3	L2	123	0.0	0.376	8.6	LOS A	1.8	13.6	0.60	0.59	0.62	53.0
8	T1	355	0.0	0.376	8.3	LOS A	1.8	13.6	0.59	0.57	0.60	53.7
18	R2	197	0.0	0.376	8.0	LOS A	1.7	13.1	0.58	0.55	0.58	53.1
Approach		675	0.0	0.376	8.3	LOS A	1.8	13.6	0.59	0.57	0.60	53.4
East: Taylor-Kidd Blvd (CR23)												
1	L2	426	0.0	0.461	9.5	LOS A	2.8	21.5	0.63	0.69	0.81	50.1
6	T1	236	5.0	0.419	9.7	LOS A	2.2	17.3	0.62	0.66	0.74	53.4
16	R2	108	0.0	0.419	9.5	LOS A	2.2	17.3	0.62	0.66	0.74	52.0
Approach		770	1.5	0.461	9.6	LOS A	2.8	21.5	0.62	0.67	0.78	51.3
North: County Road 6												
7	L2	47	5.0	0.462	12.9	LOS B	2.5	19.3	0.71	0.81	1.03	50.8
4	T1	565	0.0	0.462	12.0	LOS B	2.5	19.5	0.70	0.80	1.01	51.5
14	R2	16	18.0	0.462	12.5	LOS B	2.5	19.5	0.70	0.79	1.00	50.0
Approach		628	0.8	0.462	12.1	LOS B	2.5	19.5	0.70	0.80	1.01	51.4
West: Taylor-Kidd Blvd (CR23)												
5	L2	26	7.0	0.575	19.8	LOS C	3.2	25.2	0.78	0.95	1.37	46.5
2	T1	389	6.0	0.575	19.0	LOS C	3.3	25.9	0.77	0.94	1.36	46.9
12	R2	189	3.0	0.575	17.5	LOS C	3.3	25.9	0.76	0.93	1.34	46.6
Approach		604	5.1	0.575	18.6	LOS C	3.3	25.9	0.77	0.94	1.35	46.8
All Vehicles		2677	1.8	0.575	11.9	LOS B	3.3	25.9	0.67	0.74	0.92	50.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.