



Traffic Assessment Report (Draft)

Southwestern Landfill Proposal Environmental
Assessment

For Walker Environmental Group Inc.

January 13, 2020





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1 Introduction

An Environmental Assessment (“EA”) is being prepared by Walker Environmental Group Inc. (“Walker”) under Ontario’s *Environmental Assessment Act* (“Act”) for the ‘*provision of future landfill capacity at the Carmeuse Lime (Canada) Ltd. (Carmeuse) site in Oxford County for solid, non-hazardous waste generated in the Province of Ontario*’.

This is one in a series of technical studies that have been completed by qualified experts to examine the potential effects of the proposed landfill site on the environment, all in accordance with the requirements set out in the *Approved Amended Terms of Reference* (“ToR”) dated May 10, 2016. This report accompanies and supports the *Environmental Assessment Report (Draft), Southwestern Landfill Proposal Environmental Assessment, January, 2020*, prepared by Walker.

Note that Walker has carried out extensive consultation with government agencies, Aboriginal groups and interested members of the public regarding this study; details are provided separately in the EA report.

2 Purpose & Objectives

The **purpose** of this study is to complete a transportation impact study assessment of the landfill proposed by Walker.

The overall **objectives** of the study are listed below, in accordance with the requirements for the assessment of an undertaking as set out in Section 6.1(2)(c) of the *Environmental Assessment Act*, and as specifically detailed in Section 8.1 of the ToR:

- (a) Describe the **environment potentially affected** by the proposed undertaking, including both the existing environment as well as the environment that would otherwise be likely to exist in the future without the proposed undertaking.
- (b) Carry out an evaluation of the **environmental effects** of the proposed undertaking, using the relevant environmental assessment criteria set out in the ToR (see **Appendix B**).
- (c) Carry out an evaluation of any additional impact management actions that may be necessary to **prevent, change or mitigate any (negative) environmental effects**.
- (d) Prepare a description and evaluation of the **environmental advantages and disadvantages** of the proposed undertaking, based on the net environmental effects that will result following mitigation.
- (e) Prepare monitoring, contingency and impact management plans to **remedy the environmental effects** of the proposed undertaking.

3 The Proposed Undertaking

The landfill proposed by Walker is described in detail in the *Environmental Assessment Report*. Following is a brief summary for the benefit of the reader, highlighting aspects of the proposal most relevant to this study.

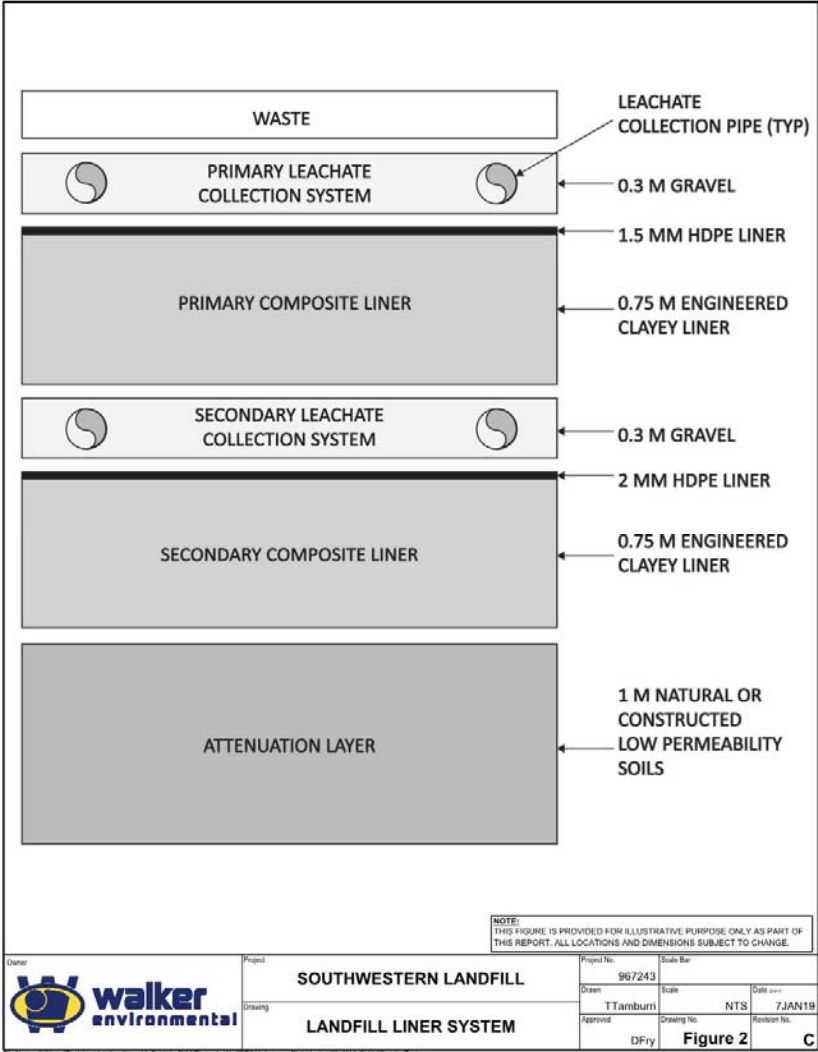
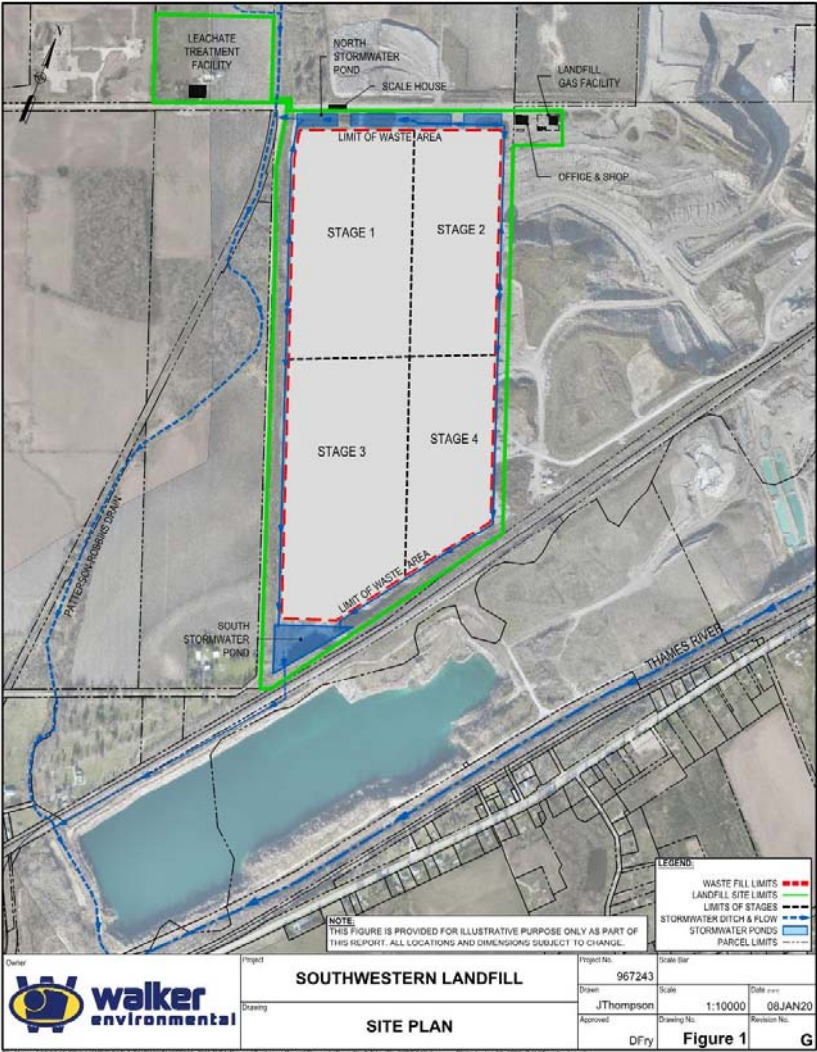
The landfill is to be located on a portion of Carmeuse's landholdings at its Beachville Quarry Operations in the Township of Zorra, Oxford County. Approximately 17.4 million m³ of solid, non-hazardous waste and daily/intermediate cover will be deposited within a footprint of about 59 ha. The balance of the 81.6 ha site will be comprised of buffer areas for monitoring, maintenance, environmental controls and other necessary infrastructure (Figure 1).

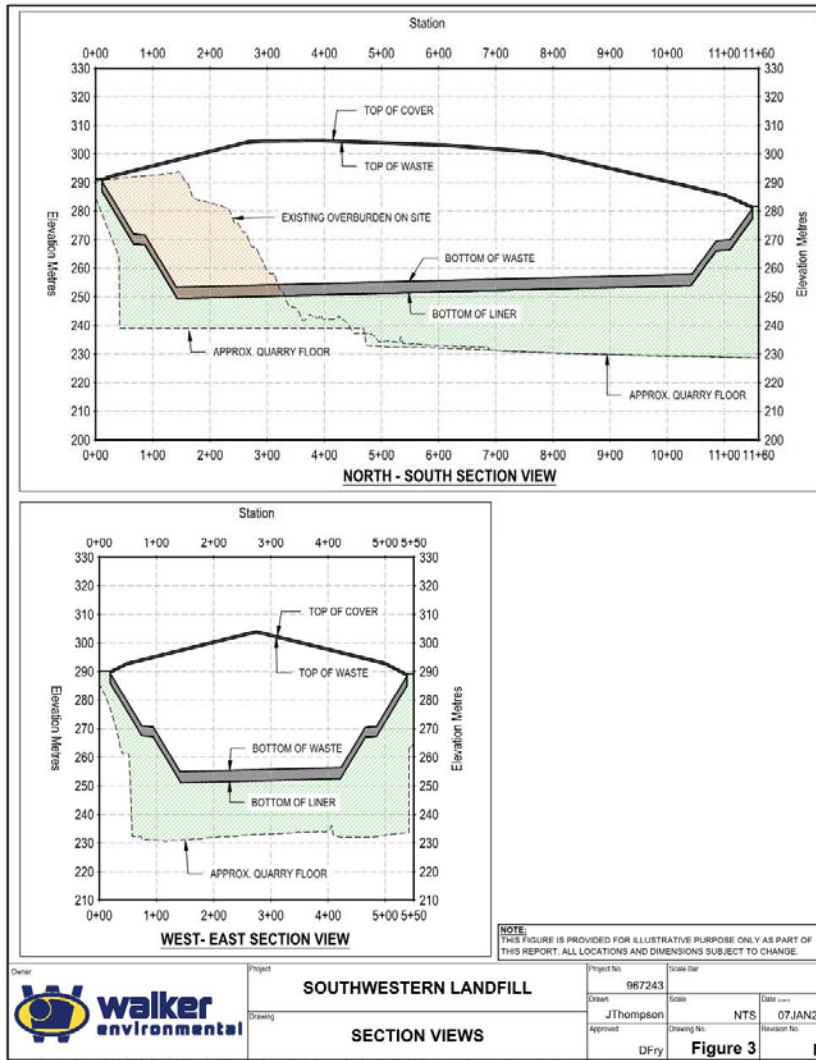
Landfill construction will proceed progressively in a series of cells, generally from north-to-south (Figure 1). The former quarry floor will be backfilled to within about 30 to 40 metres below ground surface with engineered fill, and then a *Generic Design Option II – Double Liner* system (as specified by the Ministry of Environment, Conservation & Parks in the *Landfill Standards* under *O. Reg. 232/98*; see Figure 2) will be constructed across the bottom and up the sides of the landfill to contain and collect leachate (Figure 3). Up to 850,000 tonnes *per* year of solid, non-hazardous waste, and up to 250,000 tonnes *per* year of daily/intermediate cover soils¹ will also be placed and compacted above the liner in a series of small working areas approximately 0.2 ha in size at any given time, in order to minimize the exposed waste. Waste will be covered with soil on a daily basis, and a final cap with vegetation will be applied when the landfill reaches its final height, which peaks at about 15 m above ground (Figure 4). A landfill gas collection system will also be installed as the landfill/cell development progresses.

Most of the supporting infrastructure for the landfill will be located in the buffer area along the northern site perimeter, including the leachate and gas treatment plants. Leachate collected from the liner system will be treated on-site and the clean effluent from the treatment plant will be discharged into the Patterson-Robbins Drain next to the treatment plant. Clean precipitation and groundwater that has not come into contact with waste will be segregated and treated in stormwater management ponds before being discharged from the site (Figure 1). Landfill gas will be collected in a network of extraction wells and pipes. Initially the landfill gas will be flared (combusted), but when the quantities permit the gas will be beneficially utilized as a renewable fuel.

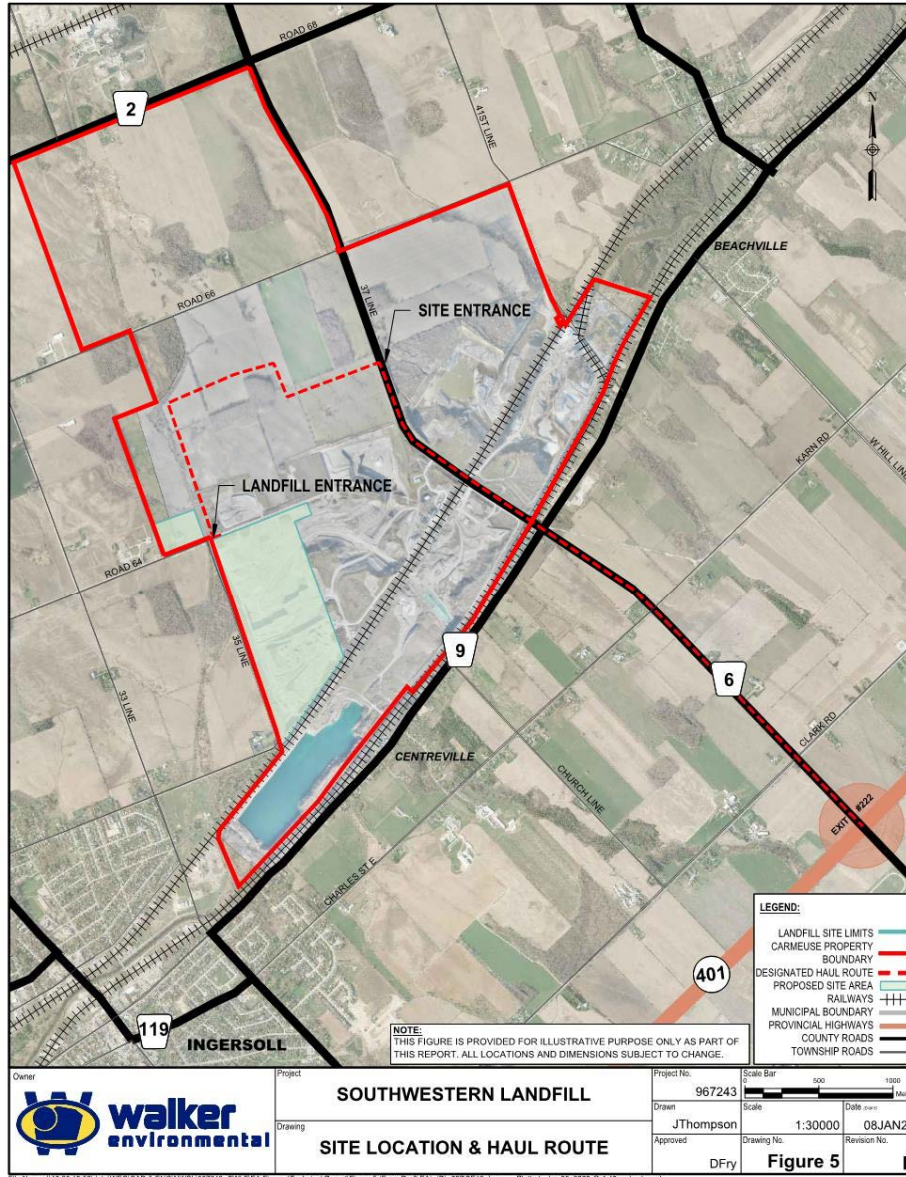
The site will be open for waste deliveries from 7:00 a.m. to 5:00 p.m. on weekdays and from 7:00 a.m. to 1:00 p.m. on Saturdays, but closed on Sundays and statutory holidays. On-site construction activities may start up to one hour before opening and continue up to two hours after closure.

¹ The daily/intermediate cover soil could consist of acceptable and suitable waste soils, and would be reported as waste, so the total reported waste receipts could be up to 1,100,000 tonnes *per* year.





The primary designated haul route (i.e., for all waste trucks except deliveries from the local area) is from Highway 401 north along County Road #6, then west into a newly constructed haul route across the quarry property to the landfill site entrance at the northwestern corner of the site (Figure 5). Vehicle traffic, including waste trucks as well as construction vehicles and staff, is expected to average approximately 210 trips per day.



Traffic controls will include speed enforcement, regular haul road cleaning (on- and off-site), and on site dust control activities. Other controls include but may not be limited to, litter fencing and pick-up, and bird/pest management, with a public complaints reporting and response system.

There will be monitoring programs for leachate, groundwater, surface water, air emissions, landfill gas, noise, and particulates (dust).

The landfill is anticipated to receive waste for approximately 20 years commencing in about 2023. After closure, maintenance and operation of the relevant environmental controls and

monitoring will carry on during the post-closure period, until there is no further risk of environmental contamination. The end-use is assumed to be passive green space and/or agriculture, but the design is flexible to accommodate other potential end-uses at the time of closure.

4 Environmental Assessment Criteria & Indicators

The **environmental assessment criteria**, as approved in the ToR, are tabulated in **Appendix B**, Table B-1. In the table, check marks indicate which technical studies are assigned primary (“lead”) responsibility for assessing each of the criteria. **Table 4-1** lists the EA criteria which are assigned to this study:

Table 4-1: Environmental Assessment Criteria

EA Criteria	Definition/Rationale
Potential for traffic collisions	Road safety
Disruption to local traffic networks	Traffic congestion

Furthermore, the criteria for this EA were designed to be cross-disciplinary to permit an assessment of cumulative effects. Table B-2 in **Appendix B**, from the ToR, illustrates some (though not necessarily all) of the key interconnectivities between the studies. As a result, this study provides input/data to additional environmental criteria that will be addressed through studies conducted by other experts including, but not limited to the below:

Table 4-2: Other Environmental Criteria

Other Environmental Criteria	Issue(s) Raised through Public Consultation	Primary Expert
Disruption to use and enjoyment of residential properties	Noise & vibration from trucks	Social/Cultural
Disruption to use and enjoyment of public facilities and institutions	Traffic impacts to existing and proposed recreational trails crossing or along the haul route; noise & vibration from trucks	Social/Cultural
Displacement/disturbance of cultural/heritage resources	Disturbances from traffic	Archaeology/Heritage
Displacement/disruption of businesses or farms	Disturbances from traffic	Economic/Financial
Loss/disturbance of terrestrial ecosystems	Disturbances from traffic	Ecology
Loss/disturbance of aquatic ecosystems	Disturbances from traffic	Ecology



Other Environmental Criteria	Issue(s) Raised through Public Consultation	Primary Expert
Loss/disruption of recreational resources	Disturbances from traffic	Social/cultural

Indicators identify how environmental effects will be measured for each criterion. The proposed indicators that were applied to each of the primary EA criteria addressed in this assessment are provided below.

Table 4-3: Proposed Indicators

EA Criteria	Proposed Indicators/Measures	Report Section
Potential for traffic collisions	Collisions per million vehicles at all study area intersections (severity, involving pedestrians, involving cyclists, autos, involving trucks, school buses, and agricultural vehicles)	Chapter 10.3
	Collisions per million vehicle-km along all study area road segments (severity, involving pedestrians, involving cyclists, autos, involving trucks, school buses, and agricultural vehicles)	Chapter 10.3
	Exposure index at rail crossing (daily # of vehicles x # of trains)	Chapter 9.6
	Sight distance at the railway crossing	Chapter 9.8
	Sight distance at the new private road site main entrance on west side of County Road 6	Chapter 9.8
Disruption to local traffic networks	Intersection performance – capacity, delay, queues (based on HCM 2010 and generated by Synchro 9) – for all study area intersections	Chapter 10 and 12
	Change in daily truck traffic volume and Annual Average Daily Traffic (AADT) along all study area road segments	Chapter 10 and 12

5 Study Durations

Two main **study durations** (or time frames) for this proposed landfill have been identified in the ToR:

Operational Period The time during which the waste disposal facility is constructed, filled with waste, and capped. These activities are combined since they occur progressively (i.e., overlap) on a cell-by-cell basis, and they have a similar range of potential effects (e.g., there is heavy equipment active on the site).

Post-Closure Period The time after the site is closed to waste receipt. Activities are normally limited to operation of control systems, routine property maintenance and monitoring, and thus have a more limited range of potential effects.

The approved EA Criteria in **Table B-1, Appendix B** indicate the relevant study duration(s) associated with each of the criteria used in this assessment.

For addressing the relevant EA criteria in Table 4-1, this traffic assessment was focused on the operational period. During the post-closure period, the proposed landfill will not be generating haul truck traffic.

In addition, **common reference periods** or milestone dates were also defined for the operational period of the landfill:

<i>Start of Construction</i>	Est. 2020	Just prior to the start of landfill construction and operation, representing the existing baseline conditions.
<i>Mid-Point</i>	Est. 2030	Approximately midway through the landfill construction and operation.
<i>Closure</i>	Est. 2040	At the completion of the landfill construction and operation, representing the full operating size of the proposed landfill.

In this study, the existing traffic conditions and future traffic conditions (with the proposed landfill) were analyzed for specific horizon years and time periods based on following the Ministry of Transportation Traffic Impact Study Guidelines.

The proposed landfill truck traffic generation is expected to be the same every year from the anticipated opening year of operation in 2023 to its closure in 2043; therefore the specific horizon year is not critical to the analysis of the landfill. However, the horizon year is required to be specified for analysis of future baseline conditions (background traffic conditions without the proposed landfill). Background traffic is expected to continue growing while the traffic generated by the proposed landfill will remain the same until its closure.

The following are the analysis years and time periods required for the traffic impact study.

Analysis Years

- 2018
- 2028
- 2033

Analysis Time Periods

- Weekday AM peak hour (typically from 7:00 am to 9:00 am)
- Weekday PM peak hour (typically from 3:00 pm to 6:00 pm)
- Saturday peak hour (typically from 12:00 to 2:00 pm)
- Weekday 24 hour (for volume comparisons only without and with the proposed landfill)

6 Study Areas

For the purposes of this EA, three general **study areas** were established in the ToR:



- On-Site and in the Site Vicinity:* *On-site* includes the proposed waste disposal facility plus the associated buffer zones. *Site vicinity* is the area immediately adjacent to the waste disposal facility property that is directly affected by the on-site activities. Its size is variable depending on the particular criteria being addressed.
- Along the Haul Routes:* The primary route along which the waste disposal facility truck traffic would move between a major provincial highway and the proposed waste disposal facility site entrance, plus the properties directly adjacent to these roads.
- Wider Area:* The broader community, generally beyond the immediate site vicinity. Depending on the particular criteria this may include neighborhoods, local municipalities, Oxford County, or the Province of Ontario.

The tables of approved EA Criteria in the ToR (**Appendix B**) indicate the relevant study area associated with each of the criteria in this assessment.

Although these three general study areas were common across all of the studies, their actual physical boundaries were not necessarily identical for every study or criterion; a flexible approach was used and the study area boundaries were adjusted as the work progressed to ensure that they adequately encompassed the effects of the proposed landfill.

The final study area for the traffic assessment is based on the preferred haul route, which consists of access from Highway 401 via the County Road 6 Interchange (Exit #222), north on County Road 6, and then west onto a private road into the landfill (Figure 5). The study area also includes the County Road 6 / Highway 401 Interchange. It is estimated that approximately 95% of the traffic generated by the proposed landfill will be on this route.

The site location and the broader study area context for this assessment is illustrated in **Exhibit 6-1**.

Where appropriate and relevant, common receptor points were also selected collaboratively by the technical experts for the EA so that the potential overlapping or cumulative effects of the proposed landfill could be assessed at these common receptor points. The common receptor points relevant to the traffic assessment are shown in the **Exhibit 6-2** and listed below.

SWO-4	Intersection of Beachville Road and County Road 6 Represents multiple residential locations and businesses at the intersection of Beachville Road and the primary haul road (County Road 6)
SWO-18	Intersection of Karn Road and County Road 6 Represents multiple residence and agricultural operations in the vicinity of the intersection of Karn Road and County Road 6 along the primary haul route
SWO-19	Intersection of Clarke Road and County Rd. 6 Represents multiple residences, agricultural operations and businesses in the vicinity of the intersection of Clarke Road and County Road 6, along the primary haul route



Exhibit 6-1: Site Location and Study Area Context

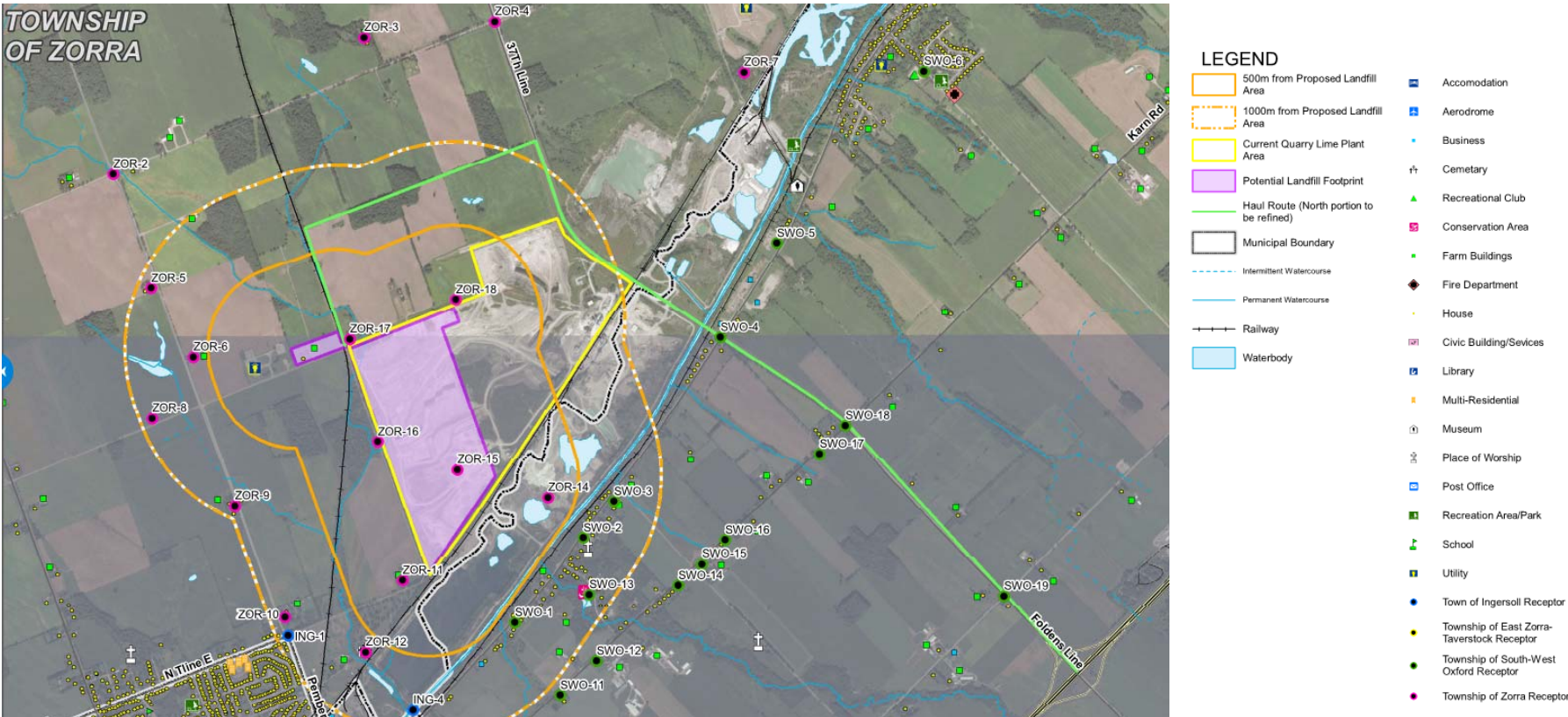


Exhibit 6-2: Common Receptors for the Study

7 Methodologies

7.1 Study Scope of Work and Approach

The traffic assessment was conducted generally following the Ministry of Transportation Traffic Impact Guidelines; however, the report structure and documentation of the study traffic assessment findings may not exactly follow the same exact sections as in a Traffic Impact Study considering that this report was prepared for the EA.

The proposed scope of work and assumptions for the traffic assessment was documented in **Traffic Study Assessment Work Plan** dated August 2017 and prepared by HDR, based on consultations and feedback received from Oxford County, City of Ingersoll, the Ontario Ministry of Transportation (MTO) and local community members. The scope of work and assumptions are summarized below:

Study Area	Primary Haul Route, comprising County Road 6 between Highway 401 Interchange and the Proposed Private Site Access Road on County Road 6. The study area for the traffic assessment also includes County Road 6 northerly to Highway 2 (Dundas Street).
Intersections to be analyzed	<ul style="list-style-type: none">• Highway 401 / County Road 6 Interchange South Ramp Terminal Intersection (County Road 6 / Eastbound On Ramp & Eastbound Off Ramp)• Highway 401 / County Road 6 Interchange North Ramp Terminal Intersection (County Road 6 / Westbound On Ramp & Westbound Off Ramp)• County Road 6 / Clarke Road• County Road 6 / Karn Road• County Road 6 / Beachville Road (County Road 9)• County Road 6 / Proposed Private Site Access Road• County Road 6 / Highway 2
Other Roads to be reviewed	Highway 401 / County Road interchange ramps
At-Grade Rail Crossing to be analyzed	County Road 6 / CP Rail Line (Operated by OSR)
Analysis Scenarios	<ul style="list-style-type: none">• Existing 2018 Traffic Conditions• Build-out of the proposed landfill + 5 years (based on Build-out in 2023):<ul style="list-style-type: none">○ 2028 Background Traffic Conditions <i>Includes general background traffic growth in the vicinity of the site.</i>

- 2028 Total Traffic Conditions
Includes 2028 background plus the proposed development
- Build-out of the proposed landfill + 10 years:
 - 2033 Background Traffic Conditions
Includes general background traffic growth in the vicinity of the site.
 - 2033 Total Traffic Conditions
Includes 2028 background plus the proposed development

- Analysis Time Periods (Traffic Peaks)**
- Weekday AM peak hour (typically from 7:00 am to 9:00 am)
 - Weekday PM peak hour (typically from 3:00 pm to 6:00 pm)
 - Saturday mid-day peak hour (typically from 12:00 to 2:00 pm)

School Bus Routes to be analyzed All school bus routes within or in the vicinity of the County Road 6 operated by Southwestern Ontario Student Transportation Services.

- Safety / Collision Analysis**
- All Intersections on County Road 6 within the study area
 - All Road Segments on County Road 6
 - Highway 401 Interchange
 - At-Grade Rail Crossing

- Sight Distance Analysis**
- At-Grade Rail Crossing
 - Proposed Landfill Site Entrance

Highway 401 EDR Review Review of Highway 401 Emergency Detour Route (EDR) Usage History from Ministry of Transportation

- Road / Pavement Condition Review**
- Highway 401 Interchange
 - County Road 6

7.2 Traffic Projections

For the preferred haul route, HDR estimated the increase in background traffic and project-generated traffic (for trucks and for all vehicles, including any construction-related traffic during the operational period) based on existing traffic volumes, annual traffic growth rates, future baseline land use, and trip generation and distribution patterns for the proposed landfill.

The future background traffic was derived by reviewing historic traffic growth and estimating increases in traffic based on historic trends and/or increase in population and employment in Oxford County.

The horizon years for traffic projections and analysis in 2028 and 2033 was based on opening day of the proposed landfill in 2023, as required by the Traffic Impact Guidelines of the Ministry of Transportation.

7.3 Traffic Operations Analysis

The traffic operation analysis for signalized and unsignalized intersections was undertaken using Synchro Version 9 software, following the analysis methodology outlined in the Highway Capacity Manual 2010. Key performance indicators utilized for intersections are volume-to-capacity (v/c) ratios, level-of-service (LOS), delays (which are captured by the LOS), and 95th percentile queues.

Key inputs for the Synchro analysis included traffic volumes, heavy vehicle percentages, peak hour factors, and intersection geometry. Traffic volumes, peak hour factors and heavy vehicle percentages are based on existing traffic counts. Other analysis parameters in Synchro are based on default parameters where existing observed data are not available to modify the defaults. For example, the study did not adjust the default saturation flow rates in Synchro.

The signalized intersection analysis considers two separate measures of performance:

- The capacity of all intersection movements, which is based on a volume to capacity ratio; and,
- The level of service for all intersection movements, which is based on the average control delay per vehicle for the various movements through the intersection.

The unsignalized intersection analysis for two-way / all-way stop-controlled intersections also considers two separate measures:

- The capacity of the critical movements, which is based on a volume to capacity ratio; and,
- The level of service for the critical movements, which is based on the average control delay per vehicle for the various critical movements within the intersection.

The volume to capacity (v/c) ratio is a measure of the degree of capacity utilized at an intersection. Level of service is based on the average control delay per vehicle for a given moment. Delay is an indicator of how long a vehicle must wait to complete a movement and is represented by a letter between 'A' and 'F', with 'F' being the longest delay. There are 6 categories of LOS as shown below.

Table 7-1: Level of Service Definitions

Level of Service	Delay in Seconds ² (Signalized Intersection)	Delay in Seconds ³ (Unsignalized Intersection)	v/c ratio ⁴ (of link)	Flow Type	Service ⁵
A	≤10	≤10	0 to 0.59	Free Flow	Uncongested
B	> 10 and ≤20	> 10 and ≤15	> 0.60 to 0.69	Stable Flow	Low Potential For Congestion
C	> 20 and ≤35	> 15 and ≤25	> 0.70 to 0.79	Stable Flow	Low Potential For Congestion

² HCM 2000

³ HCM 2000

⁴ Oxford County Transportation Master Plan Study (2009)

⁵ Oxford County Transportation Master Plan Study (2009)



D	> 35 and ≤55	> 25 and ≤35	> 0.80 to 0.89	Unstable Flow	High Potential For Congestion
E	> 55 and ≤80	> 35 and ≤50	> 0.90 to 1.00	Capacity	Congested
F	> 80	> 50	> 1.0	Forced Flow	Congested With High Potential For Diversion In Network That Results In System Wide Failure

7.4 Safety Review

The safety review was based on the field data collection and observations as well as a review of collision rates and patterns at intersections, ramps and midblock sections along the preferred haul route. Particular attention was paid to any collision patterns involving pedestrians, cyclists, domestic animals, wildlife, rail crossings, trucks and farm vehicles. The review of collision patterns included an analysis of collision locations, noting any adjacent sensitive land uses. The collisions were categorized according to the severity: fatal, injury, or property damage. The assessment considered historical collision rates and predicted collision rates based on the existing AADT and safety performance factors.

8 Data Collection

8.1 Background Data

Background data was provided by MTO, Oxford County, and Walker. The following data was provided by MTO:

- Accident Information System (AIS) collision data at Highway 401 / County Road 6 interchange including all the ramps, ramp terminal intersections, on the overpass, and in the 401 weaving section between County Road 6 and the Service Station;
- Removal and new construction drawings for Highway 401 / County Road 6 interchange from Contract 1979-0112 and 1994-0005
- 2014 Traffic counts at the ramp terminal intersections for Highway 401 and Plank Line and Highway 401 and Mill St
- Emergency Detour Routes (EDR) for Highway 401 including IC216 to IC218, IC218 to IC222, and IC222 to IC230
- Historical traffic volumes for Highway 401 and County Road 6 Interchange from 2012, 2011, 2008, 2006 and 2004
- 2009 Pavement Condition Report
- AADT, Summer Average Daily Traffic (SADT), and Design Hour Volumes (DHV) data

The following data was provided by the Oxford County:

- Collision data (2014-2017) along County Road 6
- Intersection base plans and road profile for County Road 6
- County of Oxford Transportation Master Plan Study (2009)
- Oxford County 2019 Transportation Master Plan (Draft)

- Roadway Design Drawings
- Aerial photography
- Population Growth and Employment Growth Data

The following data was provided by Southwestern Ontario Student Transportation Services (SOSTS):

- School Bus Route and Time Information

The following data was provided by Walker:

- Proposed landfill generated trucks per day and type of trucks
- Proposed landfill generated cars per day
- Landfill trip generation and traffic patterns by time of day, day of week, and season based on the existing Walker Landfill site in Niagara Region
- Estimated trip distribution based on potential sources of waste to be hauled to the proposed landfill
- Data from the Walker environmental baseline conditions study

8.2 Field Data

HDR conducted field visits on July 12th, 2017 and April 3rd, 2019. The following road characteristics and conditions were reviewed:

- Horizontal and vertical alignment
- Road cross-section
- Roadside clear zone width
- Road cross-section shoulder condition (paved, gravel, or partially paved)
- Intersection configurations
- Rail crossings, crossing treatment, and number of tracks
- Potential conflict points with trucks, pedestrians, cyclists, trail users, and farm vehicles
- Road pavement conditions
- Existing signs, signals, pavement markings, and illumination
- Residential and commercial driveways
- Sensitive land uses along the route, including facilities where groups of people can gather, such as churches, schools, day care facilities, parks, hospitals, cemeteries, senior citizen centres, community centres, etc.
- Turning and minimum sight distance / visibility deficiencies
- Length of the route (km)

9 Existing Baseline Environmental Conditions

9.1 Existing Road Network

The existing road network in the study area is described below.

- County Road 6** County Road 6 is under the jurisdiction of Oxford County. County Road 6 has a posted speed limit of 80 km/h throughout the study area. It is a north-south, 2-lane arterial road, except between Karn Road and Beachville Road, where the road is widened to a three-lane cross-section. The two-lane and three-lane cross sections have 2.5-metre gravel shoulders on both sides of the road.
- County Road 2 / Dundas Street** County Road 2 (Dundas Street) is a 2-lane arterial road under the jurisdiction of Oxford County. County Road 2 has a posted speed limit of 60 km/h within the study area. The two-lane cross section has 3-metre gravel shoulders on both sides.
- County Road 9 / Beachville Road** County Road 9 (Beachville Road) is under the jurisdiction of Oxford County. Beachville Road has a posted speed limit of 60 km/h within the study area. It is a 2-lane east-west arterial road connecting the communities of Ingersoll, Beachville, and Woodstock. The two-lane cross section has 2.5-metre gravel shoulders on both sides.
- Karn Road** Karn Road is a two-lane County local road that intersects County Road 6 south of Beachville Road. It has a speed limit of 60 km/h within the study area. The two-lane cross section does not have any shoulders.
- Clarke Road** Clarke Road is a two-lane County local road that intersects County Road 6. It has a speed limit of 80 km/h within the study area. The two-lane cross section has 1.5-metre gravel shoulders on both sides.
- Highway 401** Highway 401 is a controlled-access divided provincial highway under the jurisdiction of the Ministry of Transportation of Ontario. It has a six-lane cross section with a speed limit of 100 km/h in the study area.

The horizontal alignment along County Road 6 generally consists of straight sections of road, except for two major horizontal curves. One is located just north of Karn Road. The other is located around 1 km north of Beachville Road.

The vertical profile of County Road 6 from Highway 401 northerly to 250 metres south of Beachville Road has a 1% downgrade. The profile from 250 metres south of Beachville Road to Beachville Road has an approximate 6% downgrade. Then the profile reverses from Beachville Road to 1km north of Beachville Road with a 5% upgrade. County Road 6 from 1km north of Beachville Road northerly to County Road 2 has an approximate 1% upgrade.

No horizontal or vertical alignment issues were observed along County Road 6 within the study area. There are no horizontal or vertical alignment improvements planned along County Road 6 according to the Oxford County 2019 Transportation Master Plan.

The existing road network lane configurations and intersection traffic controls along Oxford County Road 6 are illustrated in **Exhibit 9-1**.

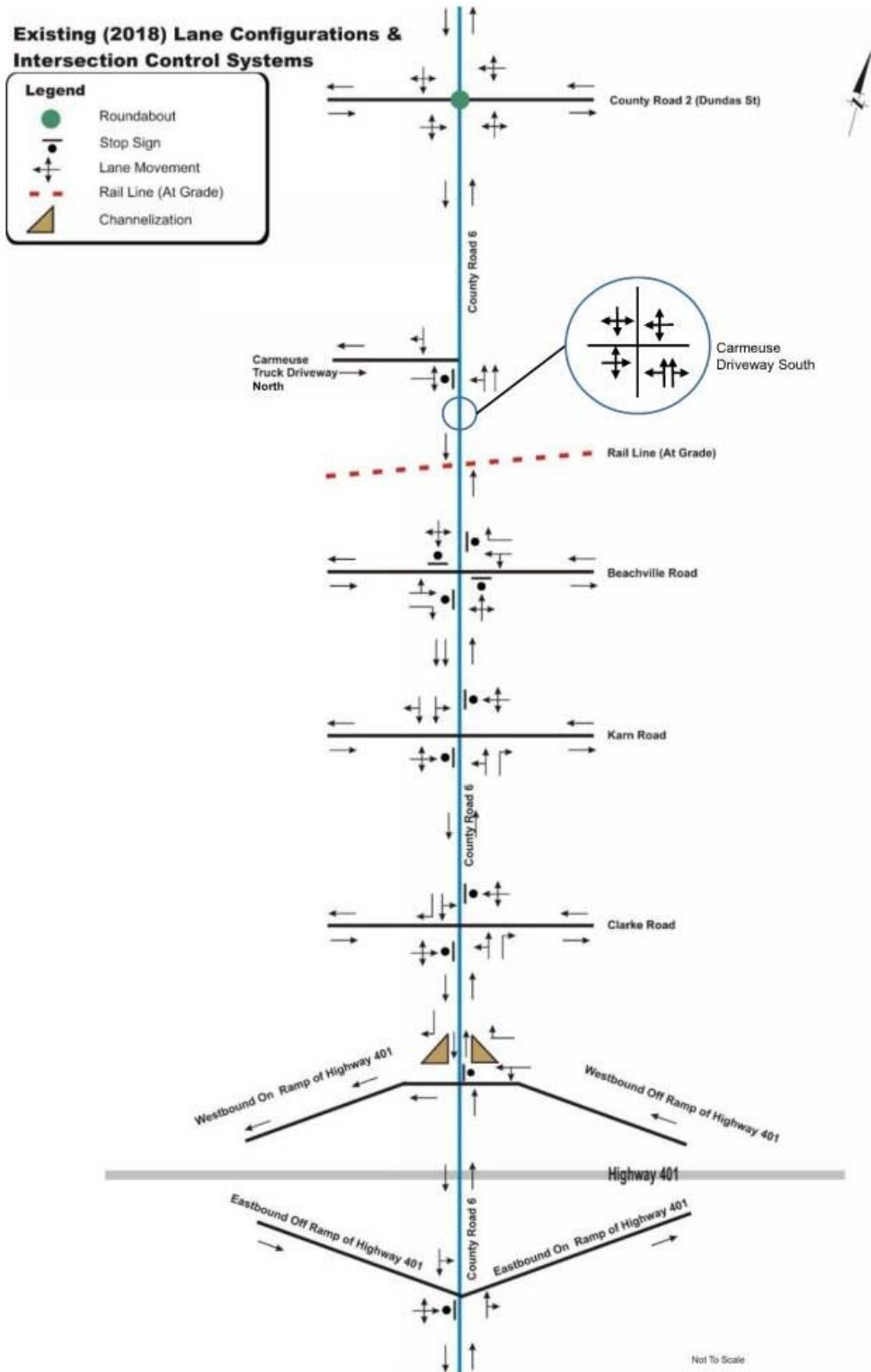
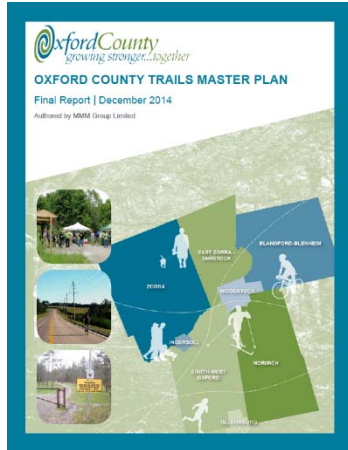


Exhibit 9-1: Existing Study Area Road Network Lane Configuration

9.2 Existing Trail Routes (Walking, Cycling, Snow Mobiles)



Based on the 2014 Oxford County Trails Master Plan, no trails are currently on, or cross, County Road 6 within the study area. However, there are proposals to construct new trails along Karn Road and Beachville Road, and along County Road 6 – from Karn Road to Curry Road within the study area. Of the proposed trails, only Beachville Road has priority status to construct a paved shoulder as part of the trail. Trails with priority status have not yet been implemented as of the date of this report. No cyclists or pedestrians were observed during our field visits.

Separate motorized routes for Snowmobiles and All-Terrain Vehicles (ATV) are privately owned and operated, and therefore, are not identified in the Oxford County Trails Master Plan. However, it should be noted that these motorized routes may operate on overlapping route segments that are used by cyclists and pedestrians.

There were no observations conducted during winter conditions, including observations of snowmobiles. The study was focussed on typical road traffic conditions during spring/fall as specified in the proposed workplan for the traffic assessment.

9.3 Existing Farm Vehicle Routes

There are occasional farm vehicles travelling on County Road 6 in the study area. During the field visits conducted by HDR during June 2017, large farm vehicles were observed moving slowly and were travelling on the shoulders and lanes of County Road 6. However, queuing was rarely observed behind slow moving farm vehicles. The 24-hour Automatic Traffic Recorder (ATR) link counts and the intersection Turning Movement Counts (TMC) received from MTO and the County of Oxford did not specifically include farm vehicles as a classification or category and therefore the number of farm vehicles cannot be differentiated from the overall heavy vehicle category in the traffic counts provided by the various agencies.

9.4 Transit Routes and Stops

There are no local transit services along County Road 6 within the study area. GO Transit also offers no service in the vicinity of the study area. VIA passenger rail service is provided out of two stations below. Based on field observations, the frequency of the train arrival is 1-2 trains per day

- Woodstock (100 Victoria Street South); and,
- Ingersoll (1 Thames Street North).

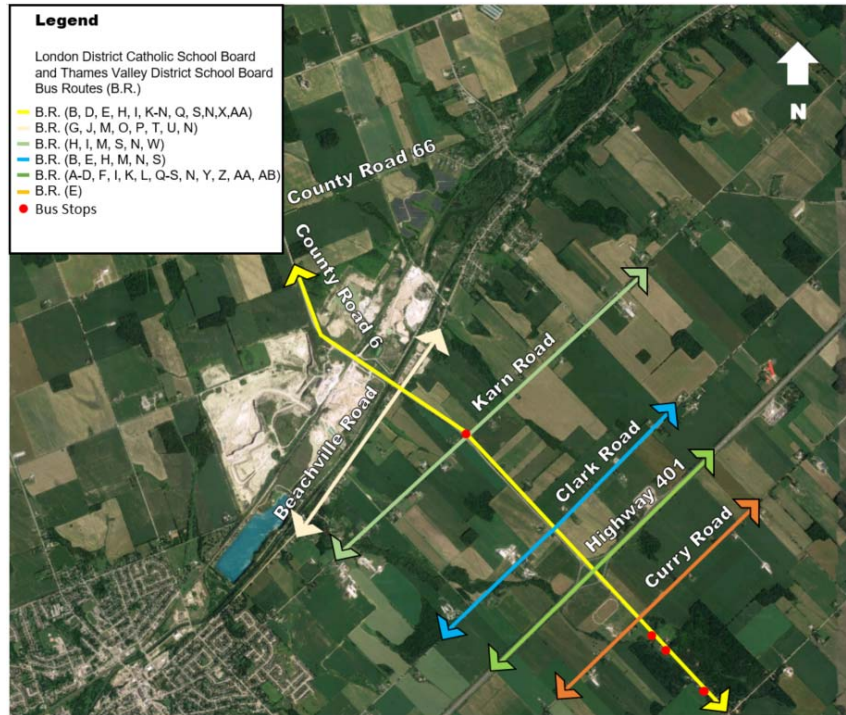
9.5 School Bus Routes and Stops

School buses are operated by Southwestern Ontario Student Transportation Services (SOSTS). The school bus routes that travel either on County Road 6 or on the cross streets within the study area are listed below:

- | | |
|---------------------------|-------------------|
| 1) College Avenue | 7) Holy Family |
| 2) East Oxford | 8) Laurie Hawkins |
| 3) Harrisfield/St. Jude's | 9) H.B. Beal |

- | | |
|----------------------------------|---------------------------------------|
| 4) Ingersoll District C.I. | 10) Catholic Central Secondary School |
| 5) Roch Carrier | 11) Woodstock Collegiate Institute |
| 6) St. Mary's Catholic Secondary | |

School bus routes which cross or travel on County Road 6 are summarized in **Exhibit 9-2**.



Bus Name	Bus Route ID
CATHOLIC CENTRAL SECONDARY SCHOOL BUS 27	A
COLLEGE AVE BUS 12	B
COLLEGE AVENUE BUS 13	C
COLLEGE AVENUE BUS 7	D
EAST OXFORD BUS 1	E
H.B. BEAL BUS 9	F
HARRISFIELD/ST JUDES BUS 10	G
HARRISFIELD/ST JUDES BUS 6	H
HOLY FAMILY BUS 3	I
HOLY FAMILY BUS 5	J
HOLY FAMILY BUS 7	K
INGERSOLL DISTRICT C.I. BUS 10	L
INGERSOLL DISTRICT C.I. BUS 11 E	M
INGERSOLL DISTRICT C.I. BUS 9	N
LAURIE HAWKINS BUS 2	O
LAURIE HAWKINS BUS 3	P
ROCH CARRIER BUS 1	Q
ROCH CARRIER BUS 10	R
ROCH CARRIER BUS 12	S
ROCH CARRIER BUS 2	T
ST MARYS CATHOLIC SECONDARY BUS 10	U
ST MARYS CATHOLIC SECONDARY BUS 13	N
ST MARYS CATHOLIC SECONDARY BUS 7	W
ST MARYS CATHOLIC SECONDARY SCHOOL BUS 2	X
ST MARYS CATHOLIC SECONDARY SCHOOL BUS 5	Y
ST MARYS CATHOLIC SECONDARY SCHOOL BUS 6	Z
ST MARYS CATHOLIC SECONDARY SCHOOL BUS 8	AA
WOODSTOCK C.I. BUS 2	AB

Exhibit 9-2: Existing School Bus Routes

School buses which travelled on County Road 6 during the AM and PM peak periods were counted and summarized in **Exhibit 9-3**.

The school bus routes, provided by SOSTS, were analysed in detail and the following observations were made from the most probable location and times of the bus routes:

- The morning school buses left and right turning hours are concentrated mostly between 6:30 – 8:30 am (i.e. 2 hour duration).
- The most critical hour for the school buses in the morning is between 7:30- 8:30 am with a maximum of 17 left and right turning movements.
- The afternoon school buses left and right turning hours are spread between 2:30 – 5:30 pm (i.e. 3 hour duration).
- The most critical hour for the school buses in the afternoon is between 4:00- 5:00 pm with a maximum of 13 left and right turning movements.

The surveyed traffic counts of existing traffic volumes already considered the existing school buses under medium and heavy vehicle category during the traffic counts. As the existing traffic operations of the overall intersections are currently operating under acceptable performance levels, the school buses also fall within the existing intersection operating conditions.

Existing (2018) School Bus Trips:

Legend

- Roundabout
- ↕ Turning Movement
- Rail Line (At Grade)
- 00 (00) AM (PM) Peak Hour School Bus Trips

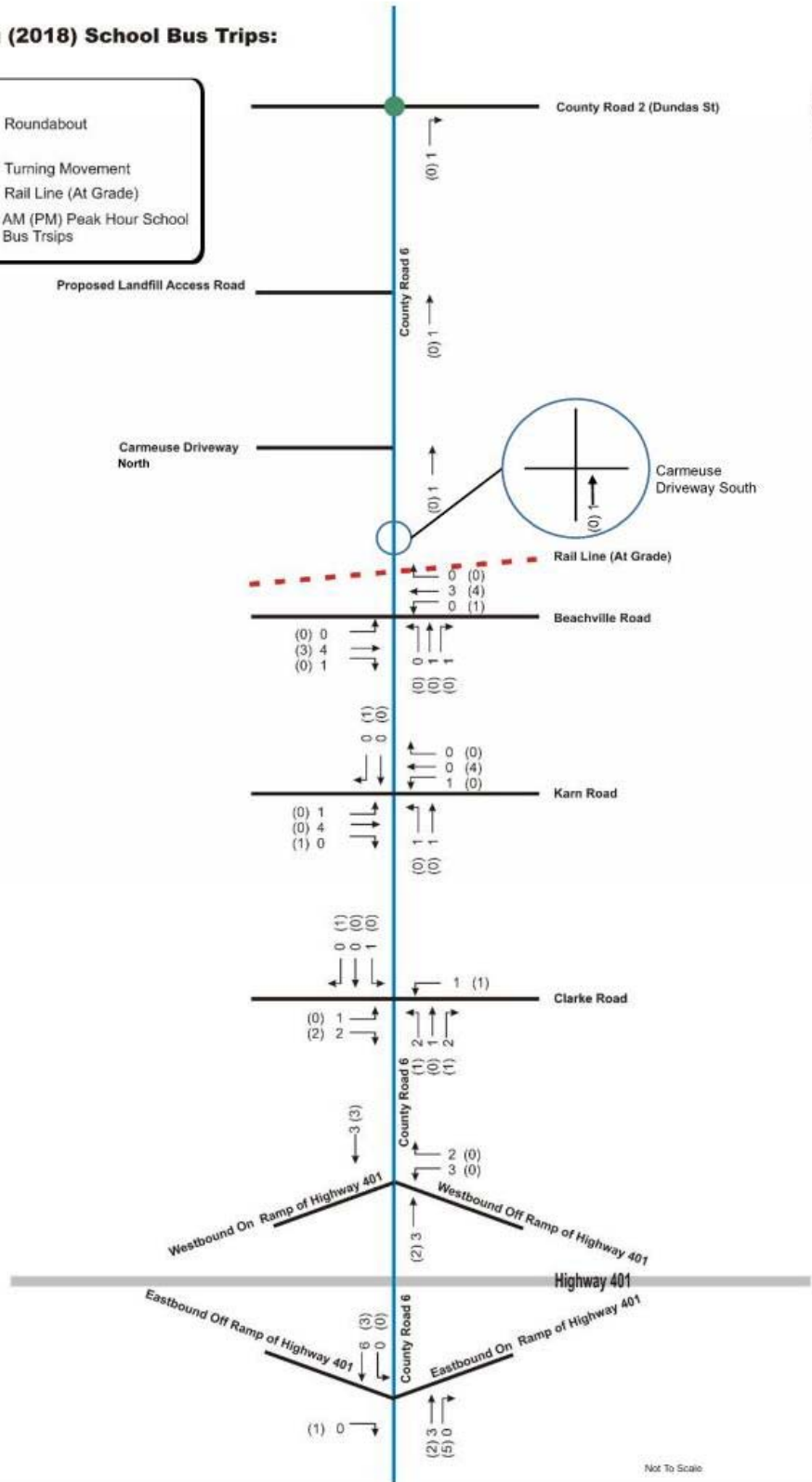


Exhibit 9-3: School Bus Trips on County Road 6

9.6 At Grade Rail Crossing

There is an at-grade rail crossing located 60m north of the intersection of County Road 6 and Beachville Road.

Based on the information provided by Ontario Southland Railway (OSR), with a maximum train length of 3000 ft (914 m) and an assumed average train operating speed of 56 km/hr, the time to cross the County Road 6 roadway width is approximately 1 minute. The rail crossing does not have a dedicated rail gate (as shown in **Exhibit 9-4**).



Exhibit 9-4: At Grade Rail Crossing on County Road 6 (looking south)

HDR commissioned a video recording of traffic passing through the rail crossing for six consecutive days from February 25, 2019 to March 2, 2019. The results for the frequency of train movements and queuing caused by the presence of the train are summarized below:

- The maximum frequency of the trains arrived in one day was two trains per day;
- The maximum road blockage time by a train was 0:01:26 and the minimum road blockage time by a train was 0:00:20;
- The maximum queue was 3 vehicles. The distance between the train track and the intersection is 60 metres, which is sufficient for three observed vehicles;
- On average, 80% of commercial trucks passing through the rail crossing are heavy trucks while 20% are medium trucks.

While there is no formal threshold to warrant a grade-separation of a railway crossing in Canada, most municipalities and road authorities use a rail crossing exposure index (cross-product rule) where 200,000 would be the minimum threshold. This value has been used to estimate the future capacity of the rail crossing before grade separation is warranted.

The Rail Crossing Exposure Index is the cross product of total number of train crossings per day and the AADT based on the below formula:

$$\text{Road Exposure Index} = A \times B$$

Where:

A = Total Number of Train Crossings per Day;

B = Annual Average Daily Traffic (AADT) Volume in passenger car units (pcu)

The existing AADT on County Road 6 near the railway crossing is less than 10,000 vehicles (or about 12,000 pcu's per day). Assuming the acceptable road exposure index is 200,000, then the maximum number of daily train crossings would have to reach 17-20 trains/day under existing or future conditions before the threshold is met. The existing total number of train crossings per day is only 2, which is well below the threshold. Similarly, if there are only 2 train crossings per day and that will not change in the long term, the future AADT on County Road 6 would have to reach 100,000 vehicles per day before the threshold is met. This level of traffic volume is not anticipated based on future growth/traffic projects.

9.7 Existing EDR of Highway 401

An inventory of the existing Emergency Detour Routes (EDR) in the vicinity of the study area was documented in this study based on agency and public feedback in regard to the potential impact of increased trucks during closure events. MTO provided maps of the existing Emergency Detour Routes; the EDR for Highway 401 in the vicinity of the study area is County Road 12 (Sweaburg Road).

Exhibit 9-5, Exhibit 9-6 and **Exhibit 9-7** show the existing EDR routes in the vicinity of the highlighted study area, respectively for the three closest Highway 401 interchanges. The EDR network comprises of County Road 12, County Road 6, and County Road 19 all to the south of Highway 401. Their use during emergency events will depend on the specific Highway 401 segment that is closed and the interchanges involved in managing traffic to and from the EDR. Note that none of the EDR routes fall within the study area or include County Road 6 north of Highway 401.

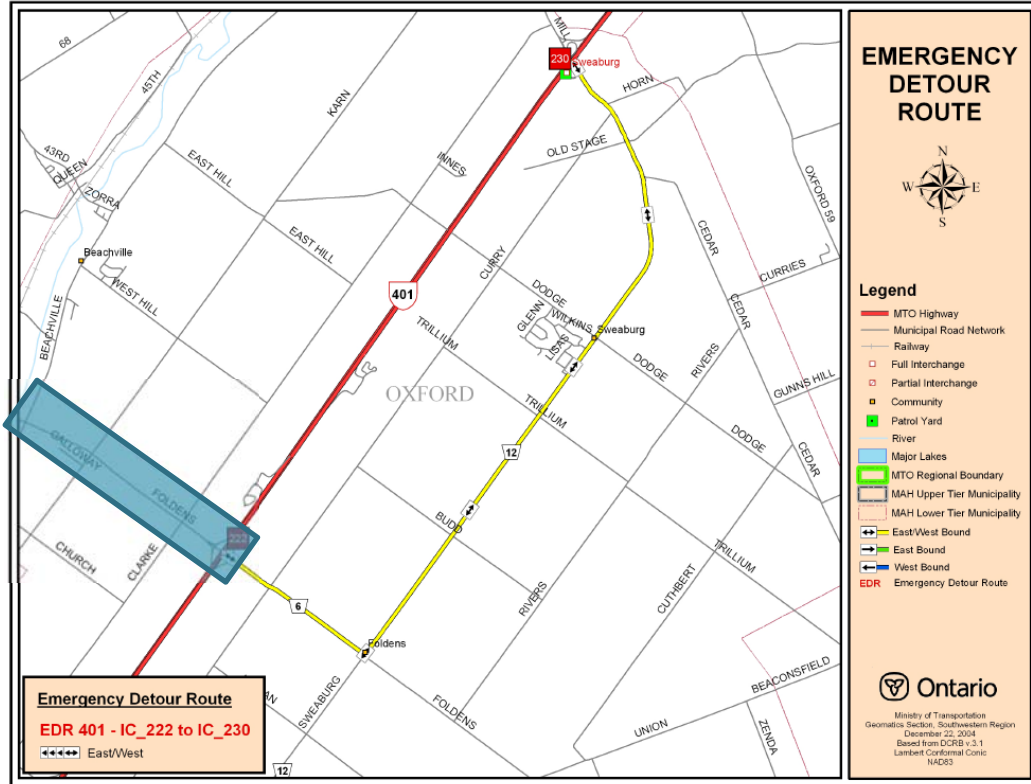


Exhibit 9-5: Emergency Detour Route of Highway 401 between IC_222 and IC_230

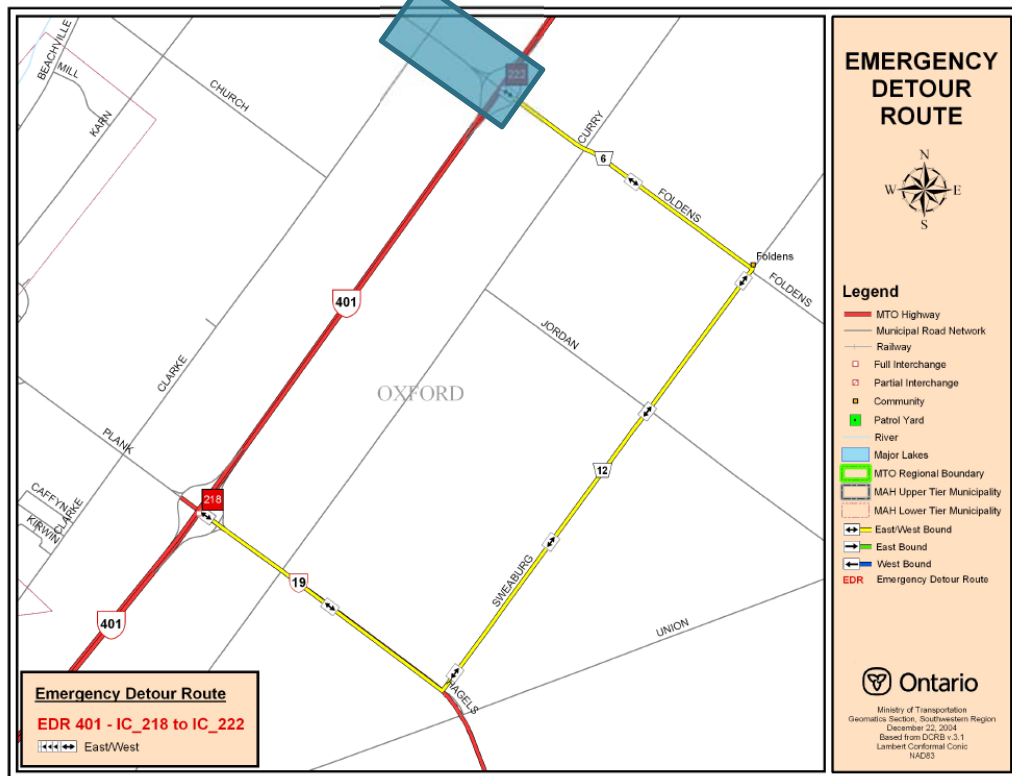


Exhibit 9-6: Emergency Detour Route of Highway 401 between IC_218 to IC_222

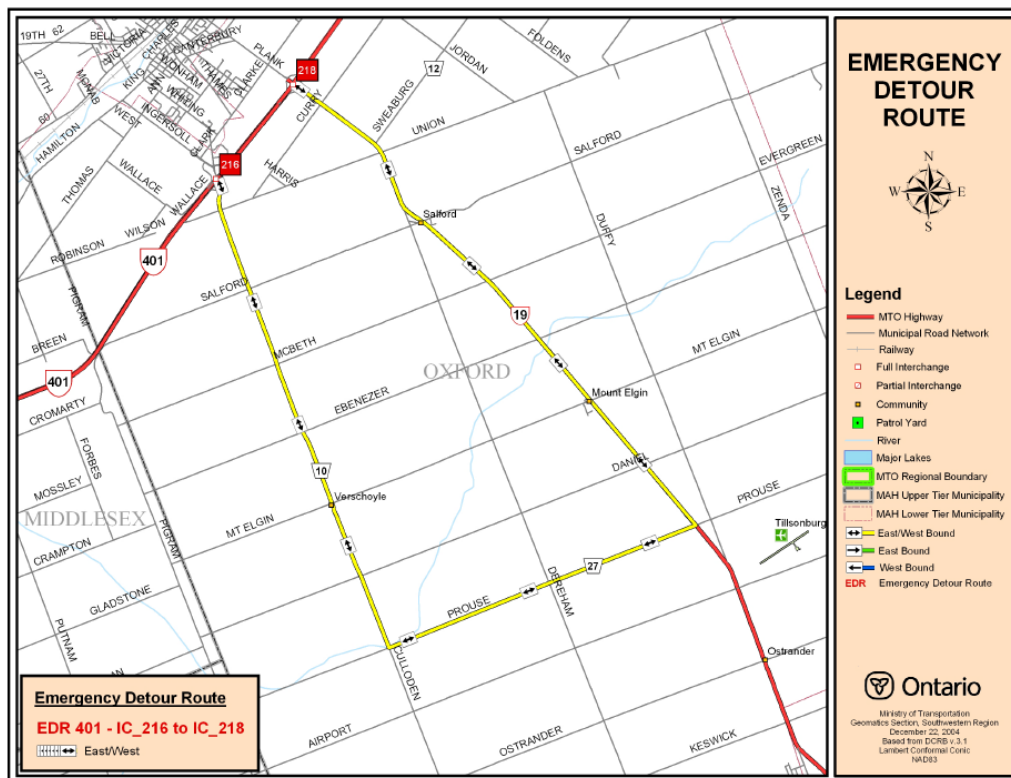


Exhibit 9-7: Emergency Detour Route of Highway 401 between IC_216 to IC_218

Emergency events in which the EDR route was used along Highway 401 from 2013 to 2018 were studied over the past years based on the data provided by MTO. A total of 32 events occurred between 2013 and 2018, including twenty-six events related to collisions, two events related to bridge construction, one event related to animal control, one related to OPP closure, and one related to weather conditions. Other than reporting/documenting these events, this traffic study does not comment or include any analysis of the EDR which are clearly outside the haul route study corridor (i.e. south of Highway 401).

9.8 Existing Sight Distances

During the field investigation, the sightlines were reviewed (e.g. stopping sight distance and turning sight distance) along County Road 6 from a road user point of view to identify if there are any existing potential substandard sightlines. Video footage and photos were recorded during the field investigation which provided the opportunity to review existing sightline conditions multiple times. The following table highlights the intersections where the sightlines were insufficient according to TAC geometric design manual (1999). The minimum turning sight distance was 180 metres at a design speed of 100 metres according to TAC geometric design manual (1999).

Table 9-1: Sightline Assessment on County Road 6

Crossroad	Control Type	Sightline Issue
Dundas St	Yield (Roundabout-40m Diameter)	None (Can view all approaches of intersection)
County Road 66	Stop Control on CR 66	None

Crossroad	Control Type	Sightline Issue
Beachville Road	All Way Stop	EB/WB on Beachville Issue (Trees/Vegetation Obstruct Vision for SB Traffic)
Karn Road	EB/WB Stop Control on Karn Road	EB issue on Karn Road (Road Curvature + Trees block Vision for SB Traffic)
Clarke Road	EB/WB Stop Control on Clarke Road	None
401 WB On/Off Ramp	Stop Control for WB Off Ramp Approach	WB Ramp Issue (Bridge Grade block view of NB Traffic)
401 EB On/Off Ramp	Stop Control for EB Off Ramp Approach	EB Ramp Issue (Bridge Grade block view of SB Traffic)
Curry Road	Stop Control on Curry	None

9.9 Existing Pavement and Pavement Marking Conditions

The existing pavement conditions were classified in three different qualitative levels – “Poor”, “Fair” and “Good”. Beginning in the north end of the study area, the pavement conditions along Country Road 6 are described below:

Dundas Street to South of Beachville Road

As shown in **Exhibit 9-8**, the pavement condition was “good” from Dundas Street to south of Beachville Road, except for:

- o Directly in front of the existing Carmeuse driveways (2) where there are potholes and the condition is “poor”.



Exhibit 9-8: Dundas Street “Good” Pavement Condition

Beachville Road to south of Highway 401

“Fair” from south of Beachville Road to just south of the Highway 401 interchange, except for:

- As shown in **Exhibit 9-9**, The north-south approaches at Beachville Road where the condition is “poor”; there is quite a bit of rutting occurring due to the high number of trucks stopping here;



Exhibit 9-9: County Road 6 and Beachville Road Northbound Rutting

As shown in **Exhibit 9-10**, Potholes, transverse and longitudinal cracking at Clarke Road where the condition is “poor”;



Exhibit 9-10: Clark Road Transverse Cracking

As shown in **Exhibit 9-11**, Potholes, transverse and longitudinal cracking at the Highway 401 interchange where the condition is “poor”;



Exhibit 9-11: Highway 401 Longitudinal Cracking

Highway 401 to Curry Road

“Fair” to the south of the Highway 401 interchange to Curry Road.

Curry Road is unpaved and for this reason Clarke Road would be the preferred alternative route to the east. Traffic volumes are very low on both roadways. Clarke Road does however have a rolling effect due to the vertical curves along the length of the roadway from County Road 6 to the east.

The existing pavement markings are under good condition except at the intersection of County Road 6 and County Road 66, where no pavement markings were observed on County Road 66.

9.10 Road Planning and Scheduled Road Improvements

According to the the County of Oxford 2009 and 2019 Transportation Master Plans (COTMP), no road improvements are planned or scheduled on County Road 6 or on the cross streets within the study area within the time frame of the landfill operation.

9.11 Other Existing Baseline Conditions

Existing signs along County Road 6 were reviewed and no issues were observed.

Lighting conditions throughout the County Road 6 were reviewed. A continuous illumination warrant was conducted along County Road 6 from County Road 2 to Highway 401 interchange. The segment was not warranted. Detail calculations were shown in **Appendix D**.

Residential and commercial driveways were reviewed and no safety/sightline issues were identified at all the driveways along County Road 6 within the study area.

10 Existing 2018 Traffic Conditions

10.1 Existing Traffic Volumes

Existing public streets and site driveway peak hour traffic volumes have been established upon a review of the traffic counts undertaken by HDR Inc. Existing traffic volume information used as a basis for the traffic operation analyses undertaken as part of this study are summarized in

Table 10-2 and

Table 10-2. Existing baseline traffic volumes for AM, PM, and Saturday peak hours adopted for the purpose of this traffic assessment are illustrated in

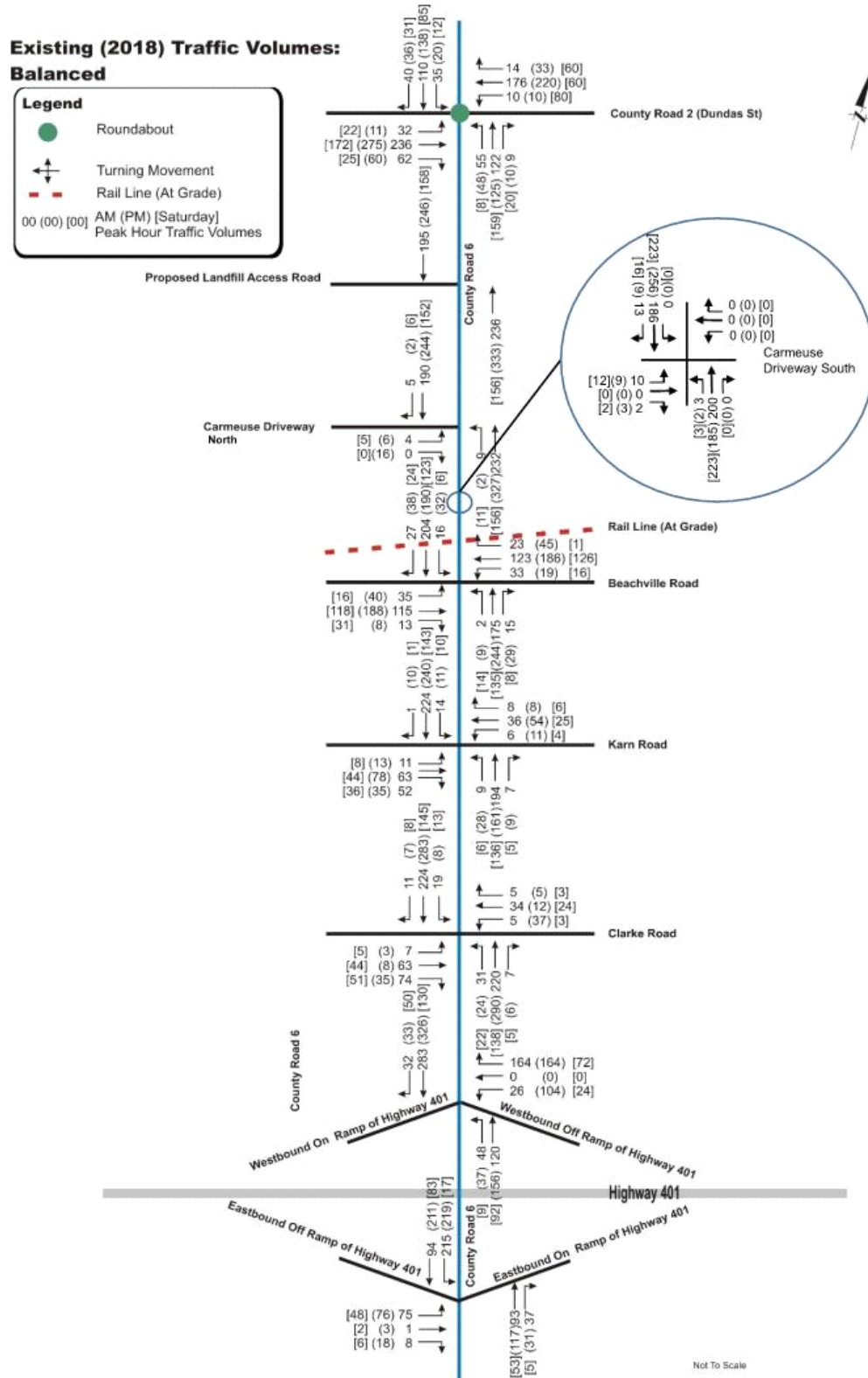


Exhibit 10-1.

Table 10-1: Existing Traffic Counts Collected from Agencies

Road / Intersection	Date	Agency
Highway 401 WB Ramp and County Road 6	October 1 st , 2012 June 28 th , 2011 September 29 th , 2008	MTO
Highway 401 EB Ramp and County Road 6	October 1 st , 2012 June 28 th , 2011 September 29 th , 2008	MTO
County Road 6 between Beachville Road and County Road 2 (Dundas St.)	2016	Oxford County
County Road 6 between Beachville Road and Highway 401	2016	Oxford County

Table 10-2: Existing Traffic Counts Conducted in this Study

Intersection	Date
Karn Road and County Road 6	June 28 th , 2017
Highway 401 WB Ramp and County Road 6	June 28 th , 2017
Highway 401 EB Ramp and County Road 6	June 28 th , 2017
Clarke Road and County Road 6	June 28 th , 2017
Dundas Street and County Road 6	November 8-10 th , 2018
Beachville Road and County Road 6	November 8-10 th , 2018
Carmeuse Driveway and County Road 6	October 17-18 th , 2018

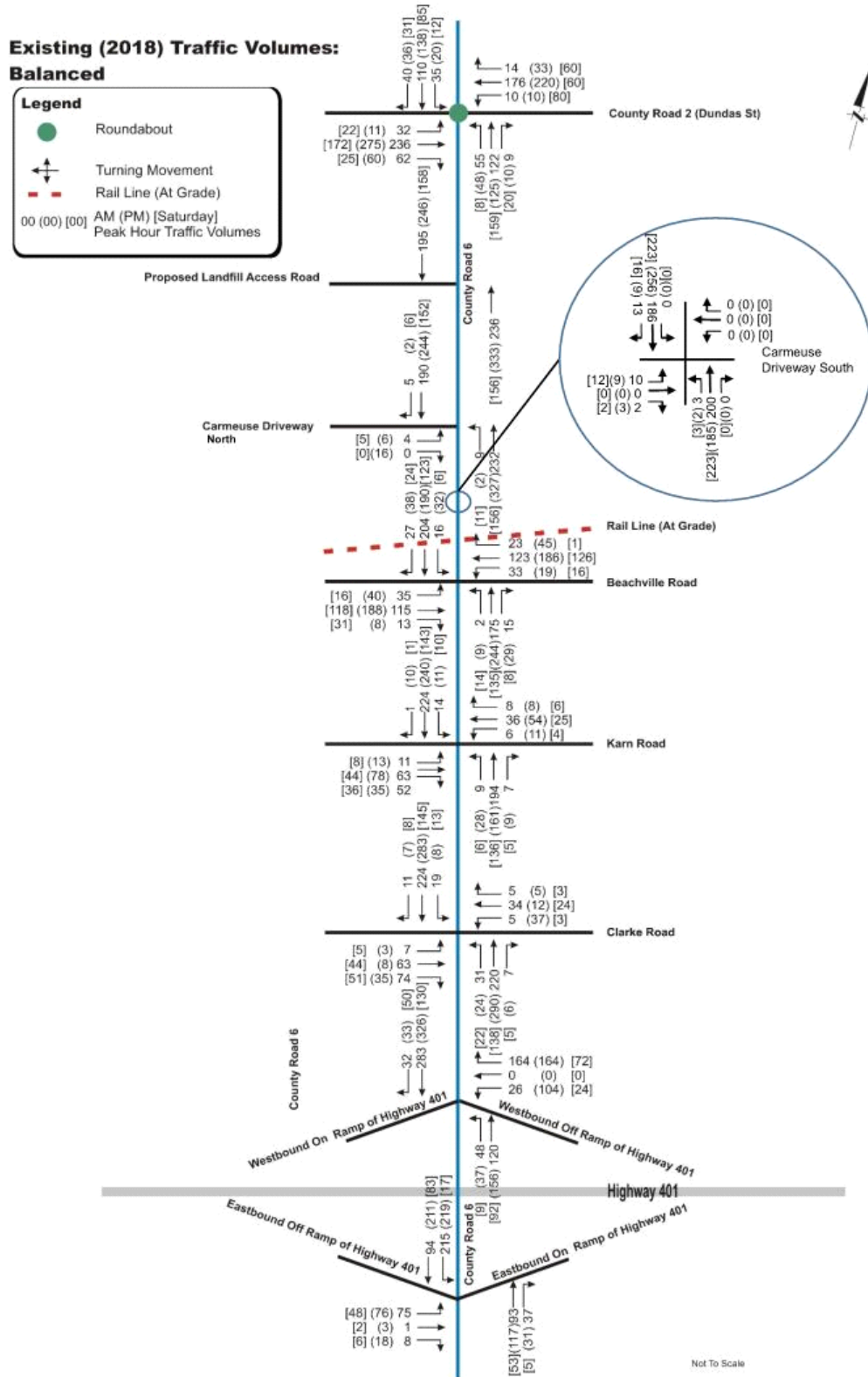


Exhibit 10-1: Existing Traffic Volumes along County Road 6

The medium truck and heavy truck distribution was calculated based on the existing truck volumes. A medium truck for the purposes of this study is classified as a truck with 3 or less axles; whereas a heavy truck comprises trucks with more than 3 axles.

The existing truck percentages (percentage of medium and heavy trucks of the total traffic volume) for all turning movements range from 0% to 50% during the AM peak period, from 2% to 50% during the PM peak period, and from 1% to 50% during the Saturday peak period. The existing truck percentages for northbound and southbound through movements range from 17% to 43% during the AM peak period, from 9% to 38% during the PM peak period, from 1% to 35% during the Saturday peak period. **Table 10-3** shows the medium and heavy truck distribution (share of medium and heavy trucks out of the total number of trucks) at the Beachville / CR 6 intersection and for the study area.

Table 10-3: Existing Medium and Heavy Truck Percentages within the Study Area

Truck Type	Location	AM	PM	SAT
Medium Truck	Passing through Beachville / CR 6	30%	29%	35%
	For entire Study Area Network	29%	28%	37%
Heavy Truck	Passing Beachville / CR 6	70%	71%	65%
	For entire Study Area Network	71%	72%	63%

Exhibit 10-2 and **Exhibit 10-3** show the detailed turning movement counts by medium trucks and heavy trucks at each intersection within the study area.

A 24-hour volume plot was made on County Road 6 south of Beachville Road, including car, medium, and heavy truck volumes. As shown in **Exhibit 10-4**, the average truck percentage at this location is 33% over a 24-hour period.

**Existing (2018) Medium Truck Volumes:
 Balanced**

Legend

- Roundabout
- Turning Movement
- Rail Line (At Grade)
- 00 (00) [00] AM (PM) [Saturday] Peak Hour Traffic Volumes

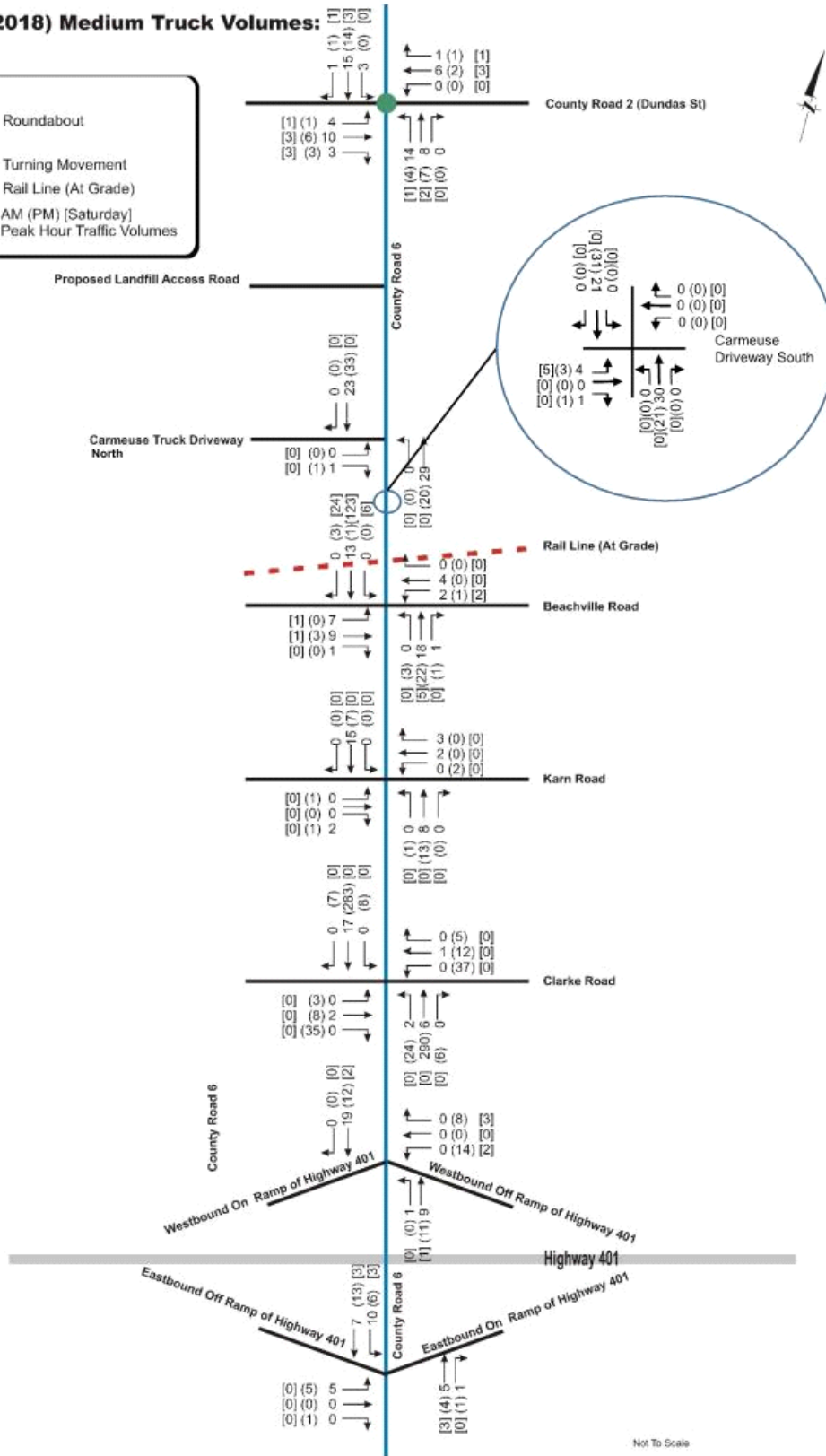


Exhibit 10-2: Existing Medium Truck Volumes within the Study Area

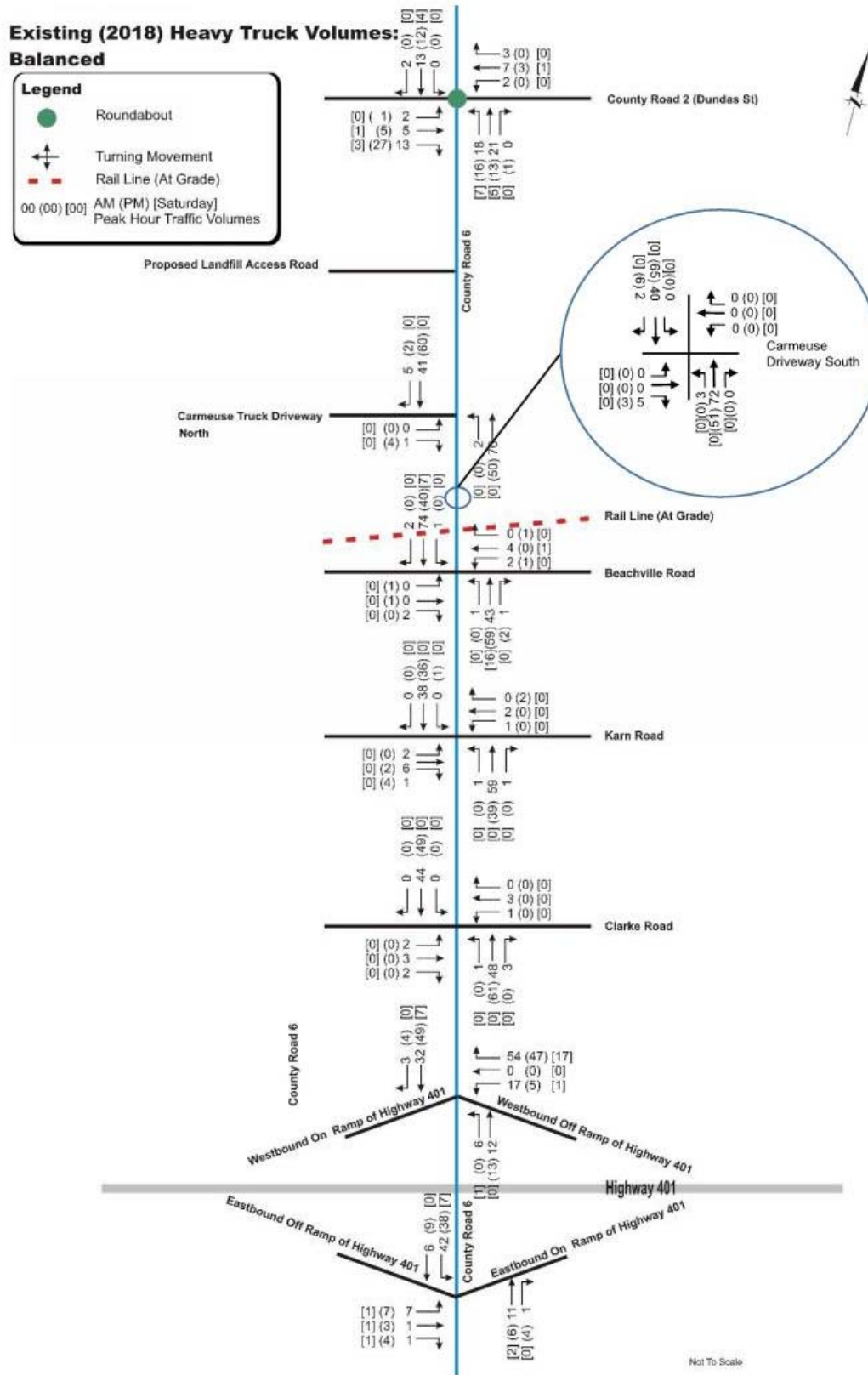


Exhibit 10-3: Existing Heavy Truck Volumes within the Study Area

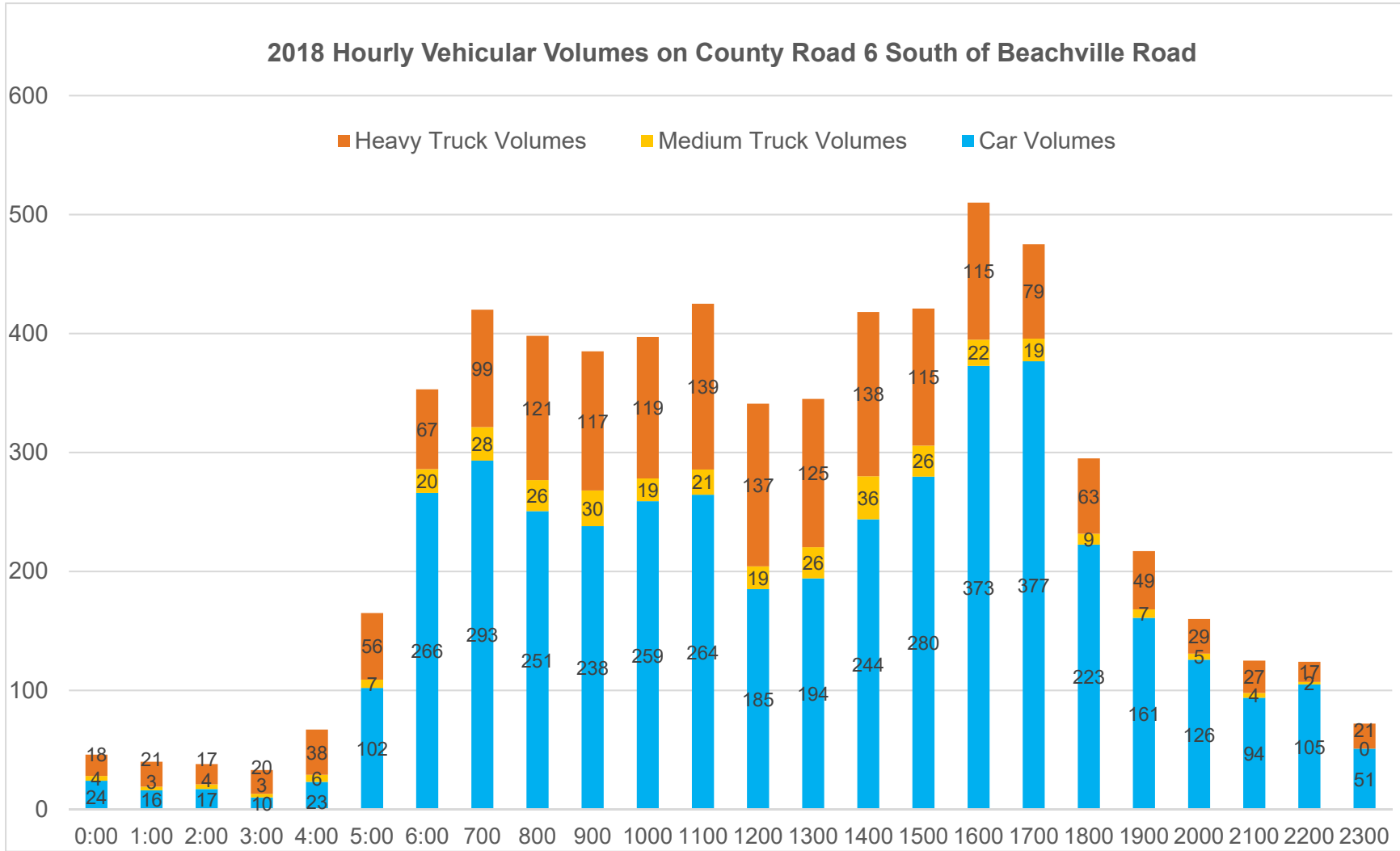


Exhibit 10-4: 2018 Hourly Volume Counts on County Road 6 south of Beachville Road

10.2 Existing Traffic Operations



Based on the existing counts shown in

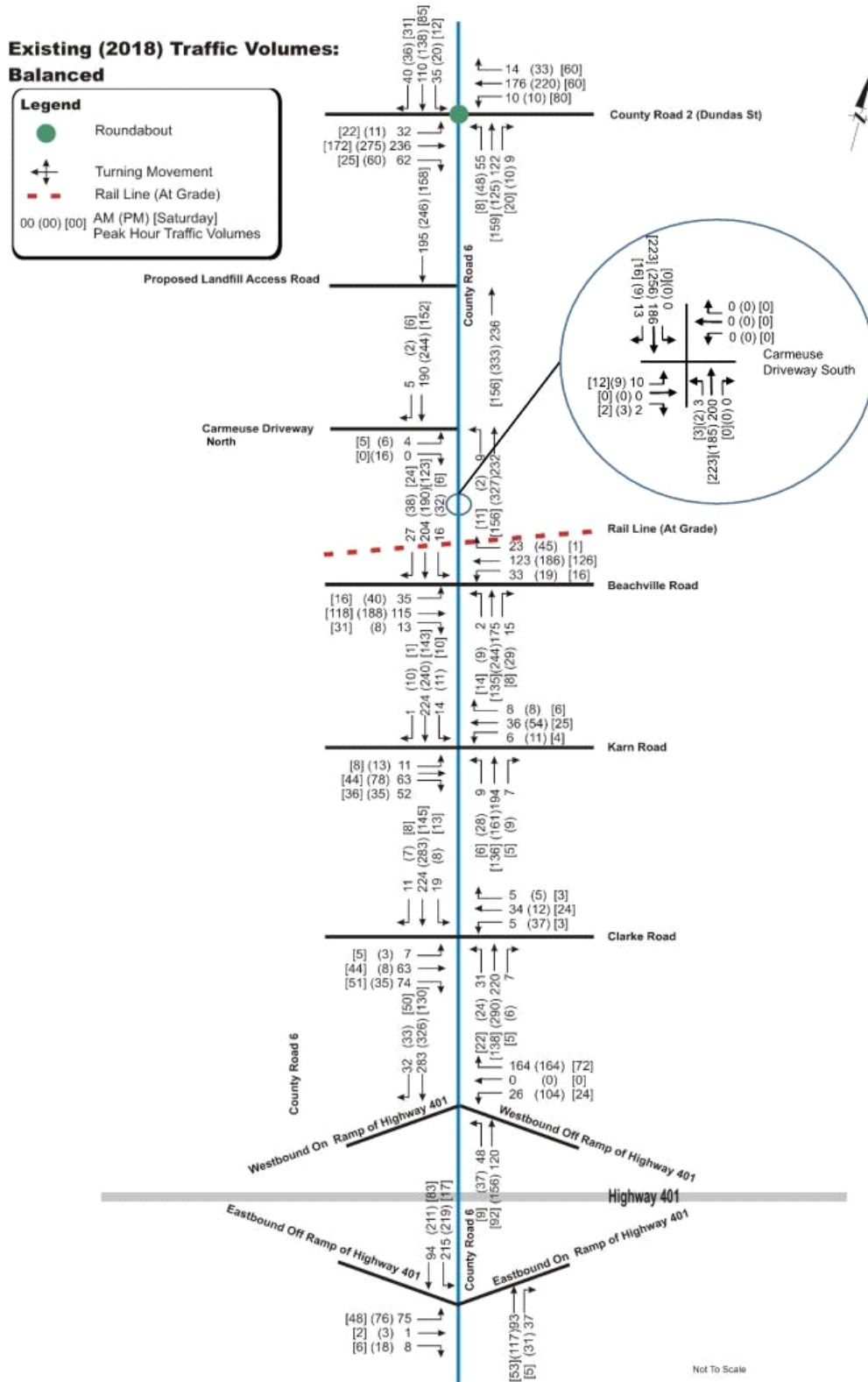


Exhibit 10-1, existing traffic operations were assessed. Intersection operation results are summarized in **Table 10-4**. **Exhibit 10-5** shows the intersection level of service summary. Detailed Synchro results are provided in **Appendix E**.

Table 10-4: 2018 Existing Intersection Operations

Intersection	2018 Existing Condition									
	AM			PM			SAT			
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	
Roundabout : County Road 6 & County Road 2 (Dundas St)	A	0.30		A	0.32		A	0.17		
EB LTR	A	0.30	14	A	0.32	14	A	0.17	6	
WB LTR	A	0.21	11	A	0.23	11	A	0.16	7	
NB LTR	A	0.28	12	A	0.22	9	A	0.15	5	
SB LTR	A	0.20	11	A	0.20	11	A	0.11	5	
County Road 6 & Carmeuse Driveway North	A			A			A			
EB LR	B	0.01	0	B	0.04	1	B	0.01	0	
NB TL	-	0.01	0	-	0.00	0	-	0.01	0	
SB TR	-	0.13	0	-	0.15	0	-	0.10	0	
County Road 6 & Carmeuse Driveway South	A			A			A			
EB LTR	B	0.01	0	B	0.04	1	B	0.01	0	
WB LTR	B	0.01	0	B	0.00	0	B	0.01	0	
NB LTR	A	0.12	0	A	0.13	0	A	0.10	0	
SB LTR	A	0.11	0	A	0.13	0	A	0.11	0	
County Road 6 & Beachville Road	B			C			A			
EB LT	B	0.31	1	C	0.47	2	A	0.22	1	
	R	A	0.02	0	A	0.01	0	A	0.04	0
WB LT	B	0.32	1	B	0.42	2	B	0.24	1	
	R	A	0.04	0	A	0.08	0	A	0.00	0
NB LTR	B	0.39	2	C	0.55	3	A	0.23	1	
SB LTR	B	0.43	2	B	0.47	3	A	0.22	1	
County Road 6 & Karn Road	A			A			A	0.00	0	
EB LTR	B	0.27	8	C	0.30	9	B	0.14	4	
WB LTR	B	0.13	3	C	0.19	5	B	0.06	2	



Intersection		2018 Existing Condition								
		AM			PM			SAT		
		LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
NB	LT	A	0.01	0	A	0.02	1	A	0.00	0
	R	-	0.00	0	-	0.01	0	-	0.00	0
SB	LT	A	0.01	0	A	0.01	0	A	0.01	0
	TR	-	0.07	0	-	0.08	0	-	0.04	0
County Road 6 & Clarke Road		A			A			A		
EB	LTR	C	0.32	10	B	0.08	2	B	0.16	4
WB	LTR	C	0.14	4	C	0.16	4	B	0.06	1
NB	LT	A	0.03	1	A	0.02	1	A	0.02	0
	R	-	0.00	0	-	0.00	0	-	0.00	0
SB	LT	A	0.02	0	A	0.01	0	A	0.01	0
	TR	-	0.01	0	-	0.00	0	-	0.00	0
County Road 6 & Highway 401 WB On Ramp/WB Off Ramp		A			B			A		
WB	LTR	B	0.31	10	C	0.50	21	B	0.12	3
NB	LT	A	0.05	1	A	0.03	1	A	0.01	0
SB	TR	-	0.21	0	-	0.22	0	-	0.11	0
County Road 6 & Highway 401 EB On Ramp/EB Off Ramp		A			A			A		
EB	LTR	C	0.31	10	D	0.37	12	B	0.09	2
NB	TR	-	0.09	0	-	0.09	0	-	0.04	0
SB	LT	A	0.18	5	A	0.17	5	A	0.05	1
County Road 6 & At Grade Rail Crossing *		A	0.20		A	0.21		A	0.10	
EW	T	-	-	-	-	-	-	-	-	-
NB	T	A	0.18	46	A	0.21	59	A	0.10	27
SB	T	A	0.20	51	A	0.17	47	A	0.09	27

LOS – Level of Service v/c – Volume to Capacity Ratio 95th Queue – 95th Percentile Queue Length in meters

* The rail crossing was analyzed as a hypothetical signalized intersection to simulate train arrival impact

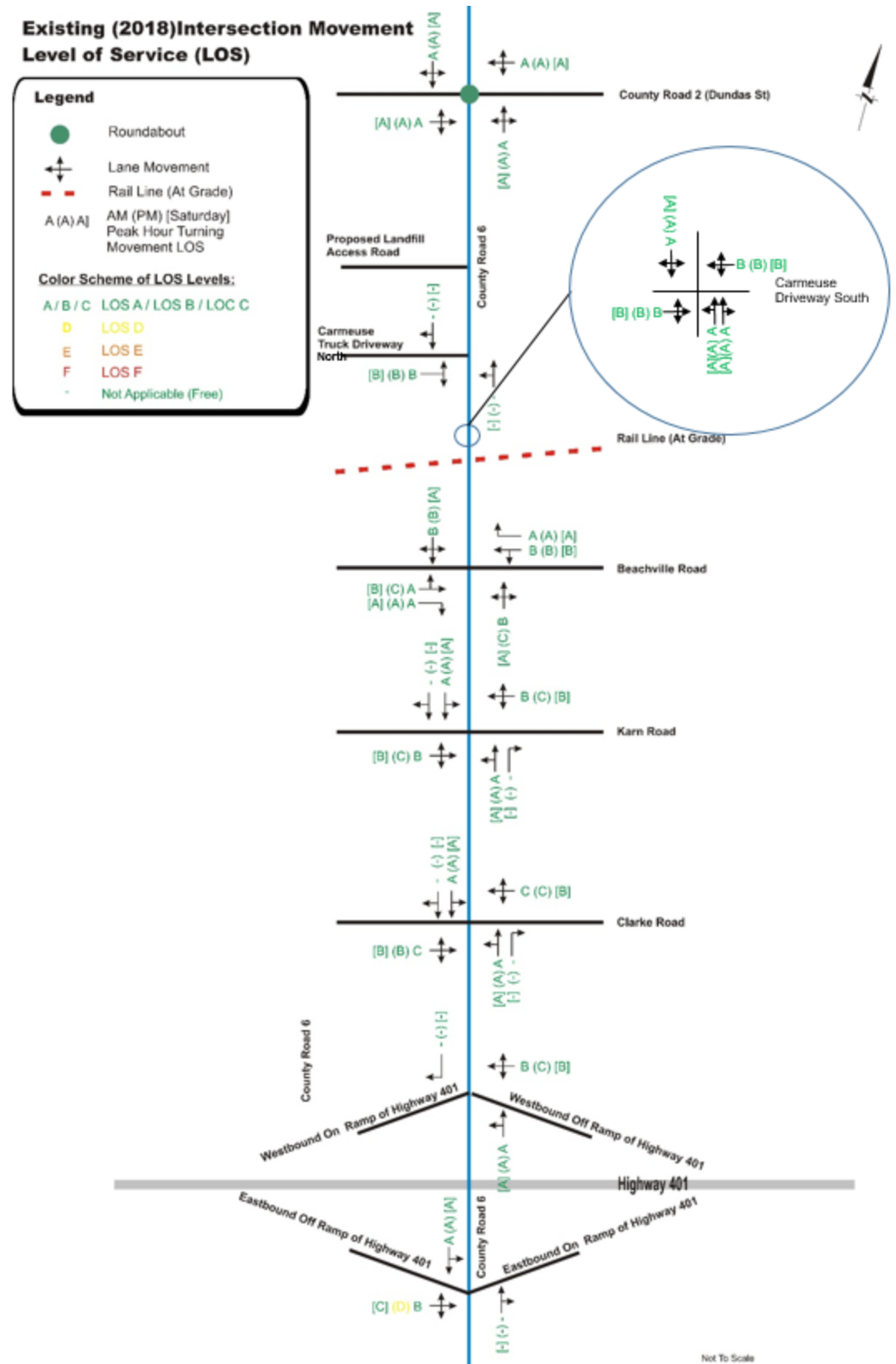


Exhibit 10-5: 2018 Existing Intersection Level Of Service

Under existing conditions, all the movements at each intersection within the study area are currently operating with residual capacity (volume to capacity ratios of 0.50 or better) and at level of service C or better during the AM, PM, and Saturday peak hours except for EBLTR movement, which operates at LOS D but with a low v/c ratio of 0.37. The 95th percentile queues are being accommodated within the existing storage lanes.

There are no operational concerns or capacity deficiencies under existing conditions.

10.3 Road Safety Review

The road safety review included collision analysis using a macro and micro approach. The macro analysis reviewed the corridor as a whole to assess the safety performance of the corridor and to identify collision-prone locations, while the micro analysis identified the underlying causes and factors at these locations. Collision analyses for Highway 401 between County Road 6 and Woodstock On-Route Service Station and County Road 6 are discussed below.

10.3.1 County Road 6 Collision Analysis

Collision Distribution Patterns

The historical collision data (2014-2017) on County Road 6 was reviewed to identify potential safety issues. **Exhibit 10-6** provides the summary of the total number of reported collisions by severity. There were 53 collisions recorded during the four-year analysis period with 39 (or 76%) Property-Damage-Only (PDO) and 14 (or 24%) non-fatal injury collisions. No fatal collisions were recorded.

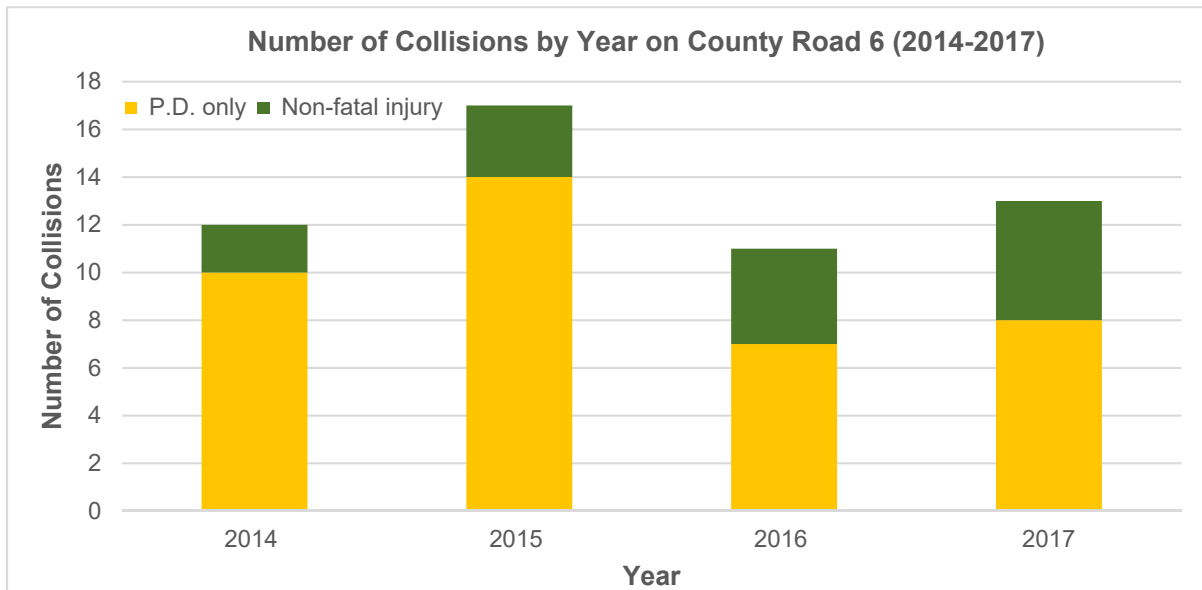


Exhibit 10-6: Number of Collisions by Year on County Road 6

The number of collisions are summarized by month in Exhibit 10 7. Collisions occurred more frequently during the winter months.

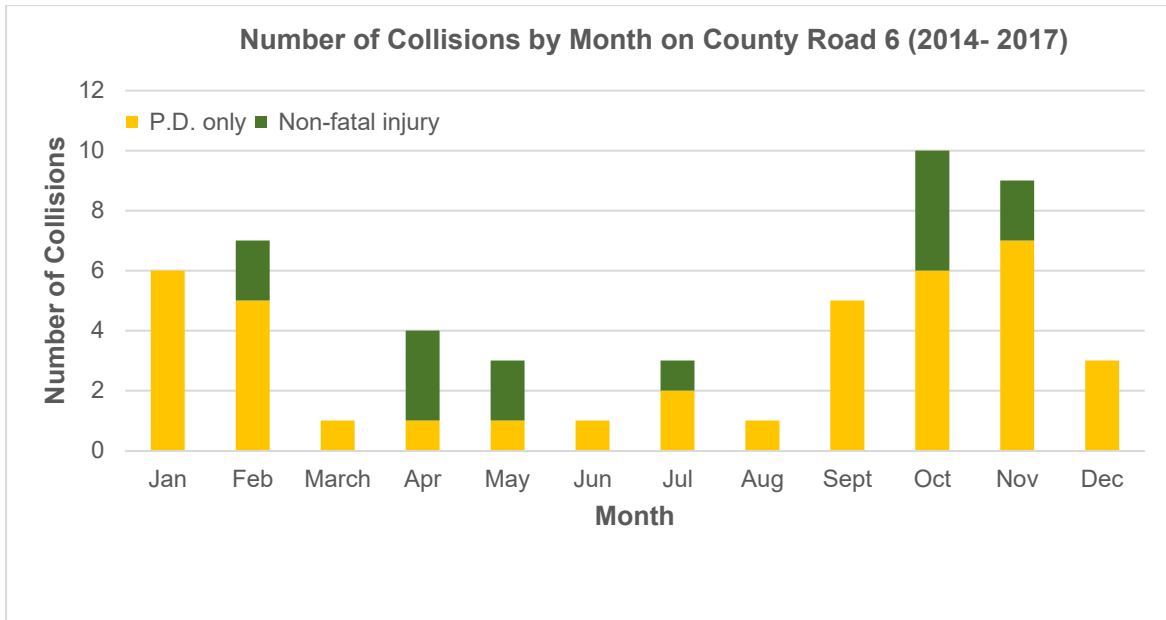


Exhibit 10-7: Number of Collisions by Month on County Road 6

The number of collisions by hour is shown in **Exhibit 10-8**. There are generally more collisions during the PM period and into the evening. The high proportion of collisions that occurred during the PM period could be attributed to higher levels of traffic congestion.

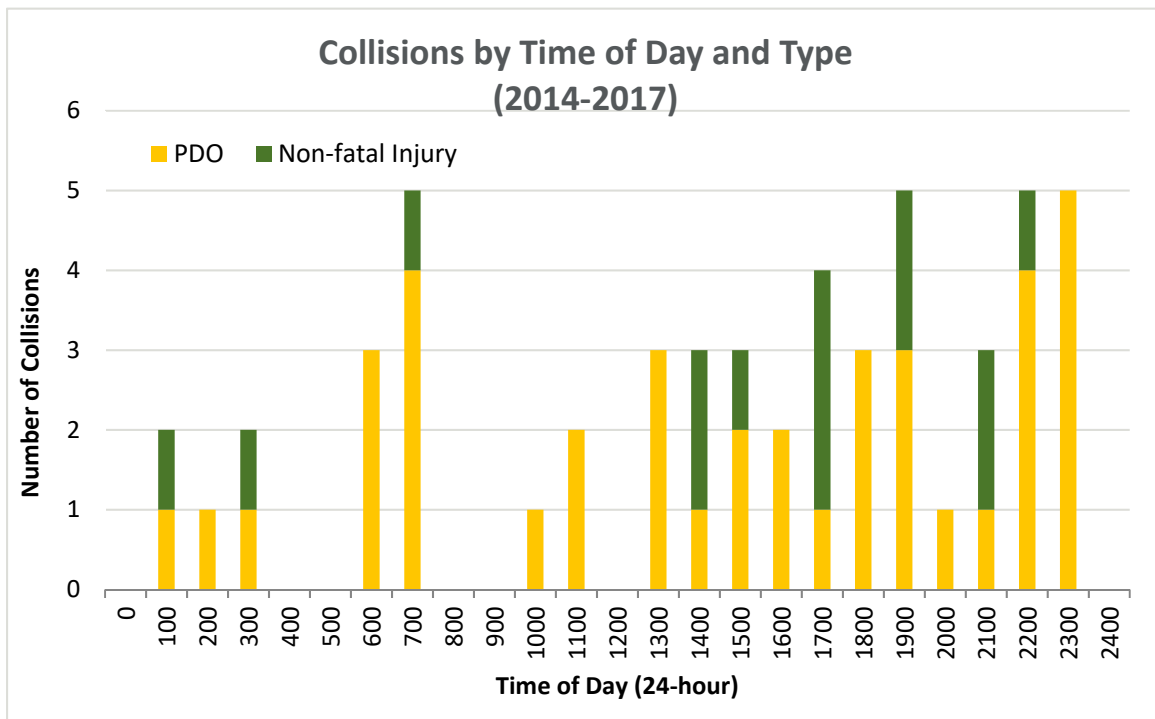


Exhibit 10-8: Number of Collisions by Time of the Day on County Road 6

Table 10-5 and **Exhibit 10-9** provides a summary of the total number of reported collisions by impact type. As shown, single motor vehicle (SMV) collisions (51%) and angle collisions (21%) are the dominant collision types.

Table 10-5: Number of Collisions by Impact Type

Initial Impact Type	2014	2015	2016	2017	Total	Percentage
Angle	3	3	1	4	11	21%
Approaching	1				1	2%
Other	1				1	2%
Rear end		1	3	2	6	11%
Sideswipe		1		1	2	4%
SMV	6	11	5	5	27	51%
Turning	1	1	2	1	5	9%
Total	12	17	11	13	53	

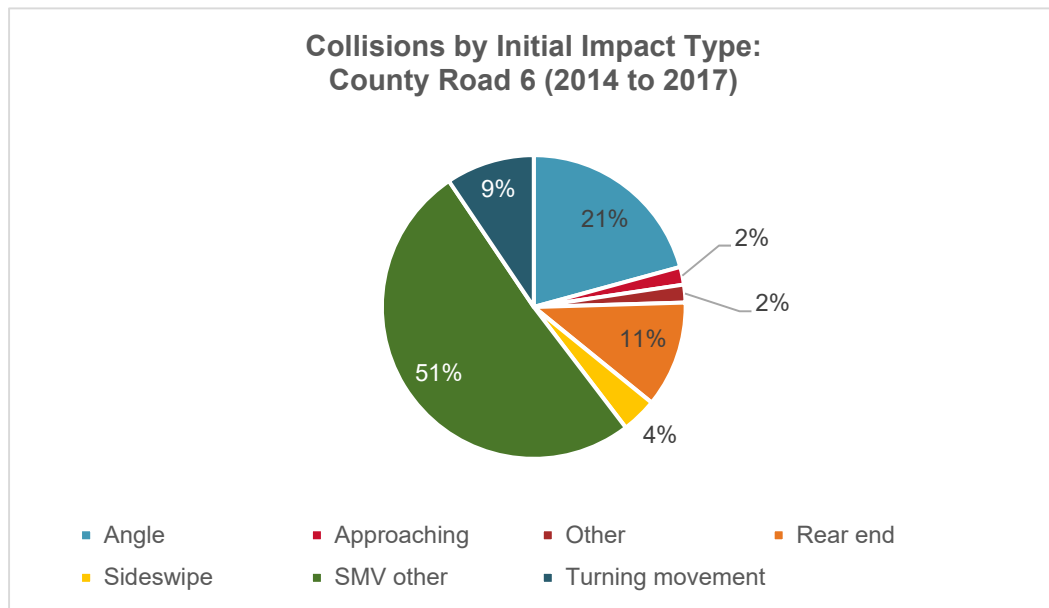


Exhibit 10-9: Collisions by Initial Impact Type

Exhibit 10-10 provides the summary of the total number of reported collisions by environmental condition. As shown, 70% of the collisions occurred under clear condition.

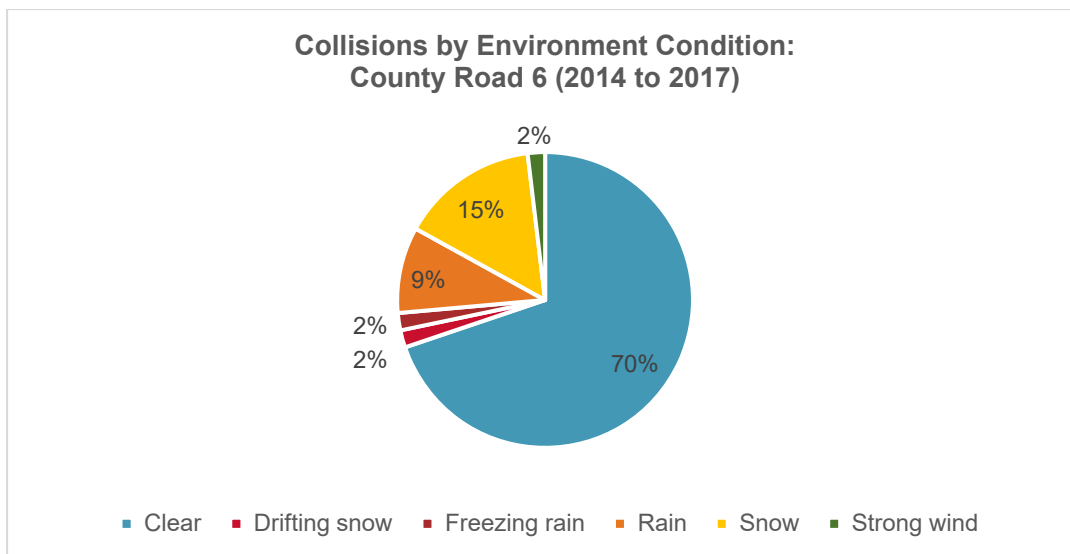


Exhibit 10-10: Collisions by Environmental Condition

Corridor Level Collision Analysis

Average collision rates per intersection and average collision rates per-1km sections were calculated by using the following equations:

- Average collision rate per intersection:

$$\text{Average Collision Rate Per Intersection} = \frac{\text{Number of Collisions within } X \text{ years} \times 1,000,000 \text{ vehicles}}{\text{Existing AADT} \times 365 \text{ Days} \times X \text{ years}}$$

- Average collision rate per segment:

$$\text{Average Collision Rate Per Segment} = \frac{\text{Number of Collisions within } X \text{ years} \times 1,000,000 \text{ vehicles}}{\text{Existing AADT} \times 365 \text{ Days} \times X \text{ years} \times \text{Length of the Segment}}$$

The calculated collision rates are summarized in **Table 10-6** and **Table 10-7**. Beachville Road and County Road 6 has the highest collision rate (0.91) among all the intersections within the study area. The provincial average collision rate is 0.7 collisions per million vehicle-kilometres. The only road segment of County Road 6 that has a higher collision rate than the provincial average is from Clarke Road to the Highway 401 Westbound Ramp.

Table 10-6: Intersection average collision rates along County Road 6

Intersection	Total Number of Collisions (2014-2017)	2018 AADT	4 Year Collision Rate	Average Collision Rate (Collisions per million vehicle per year)
County Road 6 & County Road 2 (Dundas St)	0	9435	0.00	0.00
Beachville Road & County Road 6	12	9045	3.63	0.91
Karn Road & County Road 6	6	6915	2.38	0.59

Intersection	Total Number of Collisions (2014-2017)	2018 AADT	4 Year Collision Rate	Average Collision Rate (Collisions per million vehicle per year)
Clarke Road & County Road 6	4	7090	1.55	0.39
Highway 401 WB Ramp & County Road 6	0	7465	0.00	0.00
Highway 401 EB Ramp & County Road 6	0	5990	0.00	0.00

Table 10-7: Road segment average collision rates along County Road 6

Road Segment	Total Number of Collisions (2014-2017)	2018 AADT	4 Year Collision Rate	Average Collision Rate (Collisions per million vehicle per year)
County Road 2 (Dundas St) to Beachville Road	18	5470	2.37	0.59
Beachville Road to Karn Road	2	4620	1.32	0.33
Karn Road to Clarke Rd	4	4620	1.69	0.42
Clarke Rd to Highway 401 WB	7	4620	5.19	1.30

10.3.2 Highway 401 Interchange Collision Analysis

Collision Distribution Pattern

The historical collision data (2012-2015) was reviewed to identify the collision history in vicinity of the interchange. A total number of four collisions occurred at the interchange (on the EB on or WB off ramps) as summarized below:

- One sideswipe collision occurred under snow weather conditions;
- Two single-vehicle collisions occurred under snow weather conditions;
- One single-vehicle collision occurred under clear weather and icy road surface condition;

10.3.3 Summary of the Collision Analysis

Main findings are summarized below:

- Collisions occurred more frequently during the winter months;
- Almost half of the collisions occurred during the night time indicates that illumination could be a potential problem along the corridor;
- Single vehicle collisions and angle collisions are the predominant collision types along County Road 6;
- Very few collisions occurred at the Highway 401 interchange. Single vehicle collisions and sideswipe collisions were the predominant collision types on the ramps;

- Over 50% of the single vehicle collisions occurred along Highway 401 under snow or rain conditions. This indicates that poor environmental conditions appear to be a contributing factor to SMV collisions; and,
- No fatal collisions were observed on both corridors.

11 Potential Environmental Effects of the Undertaking

Section 6.1(2)(c)(i) of the Act requires a “*description of the environment that will be affected or might reasonably be expected to be affected, directly or indirectly*”. Section 8.2 of the ToR describes the methodology by which the environment potentially affected by the proposed landfill is to be developed, notably including both the existing environment as well as the environment that would be expected to exist in the future without the proposed undertaking (i.e., the environmental baseline conditions, or the “*do nothing*” alternative).

11.1 Baseline Assumptions

11.1.1 Land Use Forecast

A common set of assumptions were provided by MHBC Planning on behalf of Walker regarding the forecast land uses in the area, so that this study could reflect any reasonably foreseeable changes in the uses of the land on and around the proposed landfill site (including the expected ongoing operation of the quarries and lime plants in the vicinity of the site). These assumptions are detailed in Walker’s *Environmental Assessment Report*.

In this report, the increases in traffic related to growth are based on the recent County of Oxford Draft Transportation Master Plan (2019).

11.1.2 Climate Change Forecast

Another set of common assumptions that were established for the purpose of this EA is the potential for climate change, so that these could be considered in the individual studies of the potential effects of the proposed landfill. These assumptions are detailed in Walker’s *Environmental Assessment Report* and adopt the guidance in the Ontario Ministry of Natural Resources and Forestry’s *Climate change projections for Ontario: An updated synthesis for policymakers and planners*.

The Minister’s amendment #12 to the *Approved Amended Terms of Reference* required that climate change should be considered in this environmental assessment. The following table summarizes the mean climate change (temperature and precipitation) assumptions to be considered for this EA; however, **climate change does not affect the traffic forecasts and analysis**.

Table 11-1: Climate Change Forecast

	Temperature (°C)			Precipitation (mm)		
	Annual	Summer	Winter	Annual	Summer	Winter
2011-2040	+2.3	+2.0	+2.2	+52.0	-2.7	+28.3
2041-2070	+3.9	+3.2	+4.5	+87.0	-2.5	+34.9
2071-2100+	+4.8	+4.1	+5.5	+89.0	-4.4	+46.8

Source: McDermid, J., S. Fera and A. Hogg. 2015. *Climate change projections for Ontario: An updated synthesis for policymakers and planners*. Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Peterborough, Ontario. Climate Change Research Report CCRR-44.

12 Evaluation of the Proposed Landfill

Section 6.1 (2)(c) and (d) of the *Environmental Assessment Act*, and the Southwestern Landfill Approved Amended Terms of Reference require an evaluation of:

- The environment potentially affected;
- The effects that will be caused on the environment;
- The actions necessary to prevent, change, mitigate or remedy the effects on the environment;
- An evaluation of the advantages and disadvantages (net effects) to the environment.

This section describes the predicted traffic increases and impacts with respect to the potential for traffic collisions and the disruption to local traffic networks that would result from the operation of the proposed landfill, as discussed in the previous sections.

12.1 Proposed Southwestern Landfill Traffic

12.1.1 Trip Generation

Trip generation for the proposed Southwestern Landfill was provided by Walker. **Table 12-1** shows the truck trips generated by time periods for a typical weekday during the operating hours (from 7am to 5pm). On a Saturday, the truck trip generation has been prorated based on the shortened operating hours from 7am to 1pm, with the peak hours being from 7-8 am and 12-1pm.

Table 12-1: Trucks Trips Generated by Southwestern Landfill

Required Service	Trips/day	7-9am	9am-12pm	12-2pm	2-3:30pm	3:30-5pm
Waste Import (Long-haul)	79	18	12	18	12	18
Waste Import (Short-haul)	74	17	11	17	11	17
Soil Import (Long-haul)	21	5	3	5	3	5
Soil Import (Short-haul)	7	1	1	2	1	2
Construction Material (Long-haul)	12	3	2	3	2	3
Total	193	45	29	45	29	45

In addition, 15 car trips will also be generated by the landfill during the weekday. All the car trips have been assumed to travel in the northbound direction on County Road 6 from Highway 401 to the site during the AM peak period, and in the southbound direction on County Road 6 from the site to Highway 401 during the PM peak period.

All the car trips during the Saturday peak period (12-1pm) have been assumed to exit the landfill (end of their work day) and travel on County Road 6 from the site to Highway 401.

12.1.2 Trip Distribution and Assignment to the Road Network

The trip distributions for the proposed landfill were estimated by Walker. **Table 12-2** and **Table 12-3** show the future landfill trip distributions by short-haul and long-haul trucks.

The trip generation and distribution for the proposed landfill will be the same every weekday and every year during the operational period. The Saturday trip generation and distribution will also be the same every Saturday and every year. Therefore, the landfill traffic forecasts are the same for the 2028 and 2033 analysis scenarios.

Table 12-2: Future Landfill Short-Haul Distribution

Direction	Distribution
To/From 401	65%
To/From the East via Highway 2	10%
To/From the West via Highway 2	15%
To/From the East via Beachville Rd	5%
To/From the West via Beachville Rd	5%
Total	100%

Table 12-3: Future Landfill Long-Haul Distribution

Direction	Distribution
To/From 401	100%
To/From the East via Highway 2	0%
To/From the West via Highway 2	0%
To/From the East via Beachville Rd	0%
To/From the West via Beachville Rd	0%
Total	100%

12.1.3 Future Year Traffic Growth

Population and employment growth from the 2019 Oxford County Updated Forecasts and Area Municipal Growth Allocations were used to calculate an estimated future traffic growth rate. This annual growth rate was calculated by averaging the annual population and employment growth rate within Oxford County. **Table 12-4** shows the calculated traffic growth rates assuming a one-to-one linear relationship with population and employment growth rate.



Table 12-4: Estimated Traffic Growth Rates based on Population and Employment Growth

Municipality	Compound Annual Growth Rates (CAGR)				
	2018	2023	2028	2033	2038
Reference Year	2016	2018	2018	2018	2018
	2 year Growth Rate	5 year Growth Rate	10 Year Growth Rate	15 Year Growth Rate	20 Year Growth Rate
Blandford-Blenheim	3%	4%	7%	10%	14%
East Zorra - Tavistock	3%	6%	10%	15%	20%
Ingersoll	3%	7%	12%	18%	25%
Norwich	3%	3%	6%	9%	13%
South West Oxford	3%	2%	4%	6%	9%
Tillsonburg	3%	5%	9%	14%	19%
Woodstock	3%	10%	18%	26%	34%
Zorra	3%	3%	5%	7%	10%
Total	3%	6%	11%	16%	21%
CAGR for Zorra, Woodstock and Ingersoll	1.60%	1.29%	1.10%	1.05%	1.03%
CAGR for Ingersoll	1.62%	1.37%	1.17%	1.12%	1.11%
CAGR for Oxford County	1.41%	1.21%	1.09%	1.02%	0.94%

An annual growth rate of 1.09% per annum was applied to all existing 2018 turning movements to derive the 2028 future background traffic forecasts. An annual growth rate of 1.02% per annum was applied to existing 2018 movements to derive the 2033 future background traffic forecasts. Future traffic patterns were assumed to remain identical to existing observed traffic patterns.

A 1% growth rate was also applied to future truck growth except for background truck traffic generated by the Carmeuse quarry. Based on the information provided by Carmeuse's Beachville operations, no changes are expected for their truck volumes traveling on County Road 6 or Beachville Road in the next 10-20 years.

The truck volumes on County Road 6 in 2028 are shown from **Exhibit 12-1** to **Exhibit 12-6**.

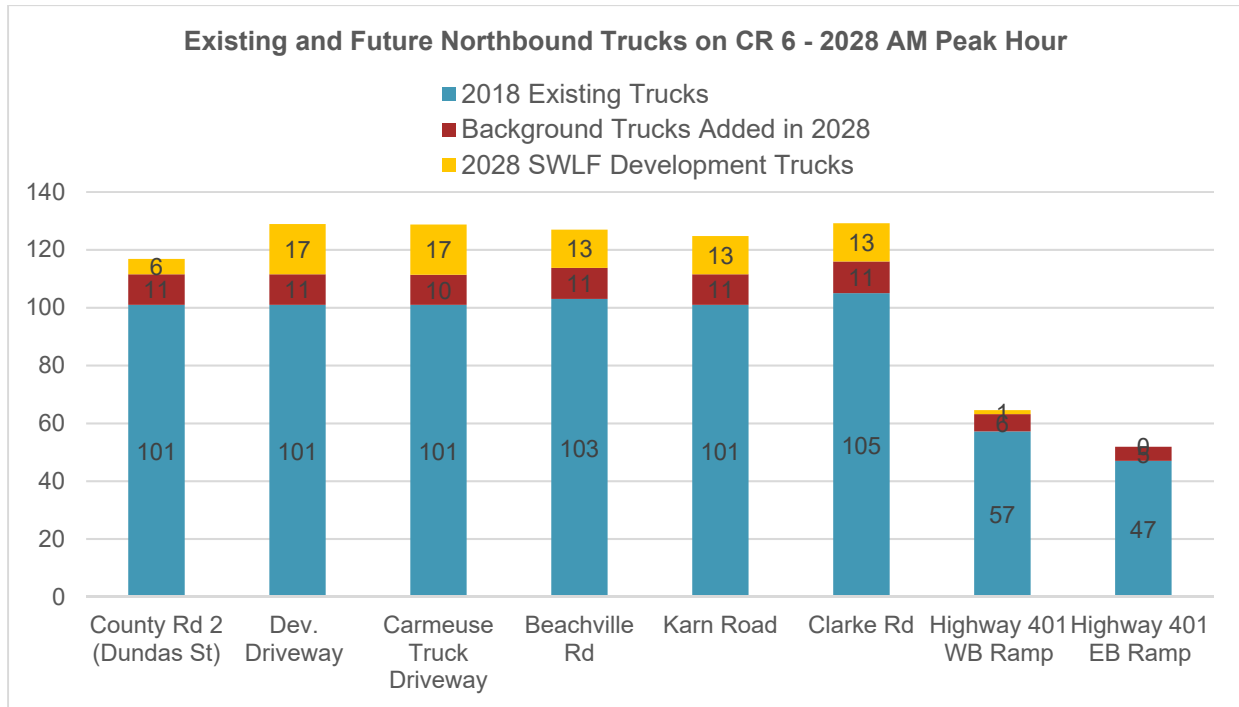


Exhibit 12-1: Existing and Future Northbound Trucks on County Road 6 (2028 AM peak hour)

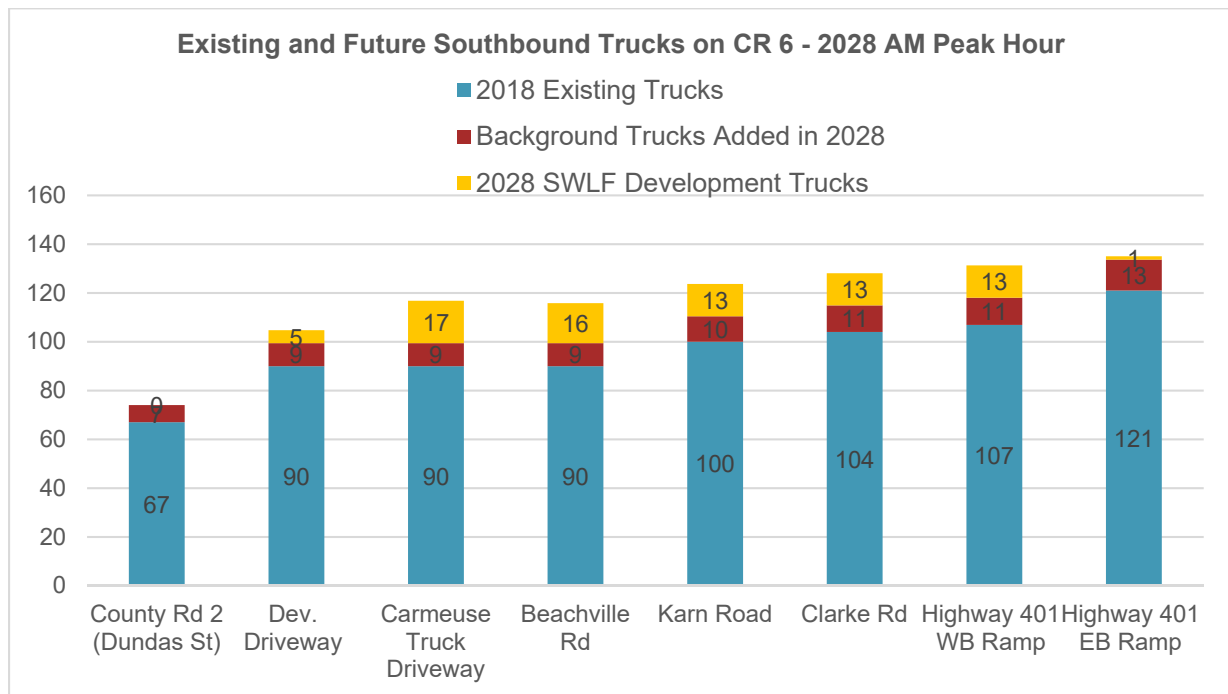


Exhibit 12-2: Existing and Future Southbound Trucks on County Road 6 (2028 AM peak hour)

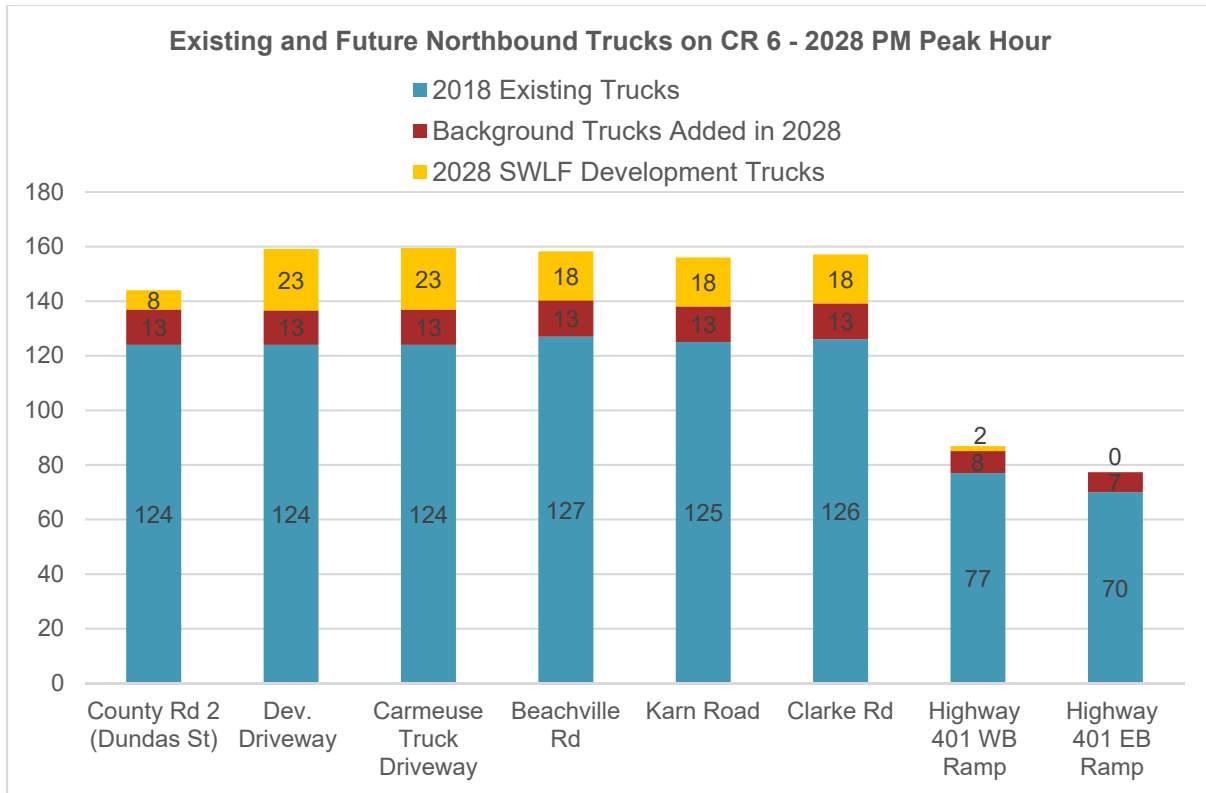


Exhibit 12-3: Existing and Future Northbound Trucks on County Road 6 (2028 PM peak hour)

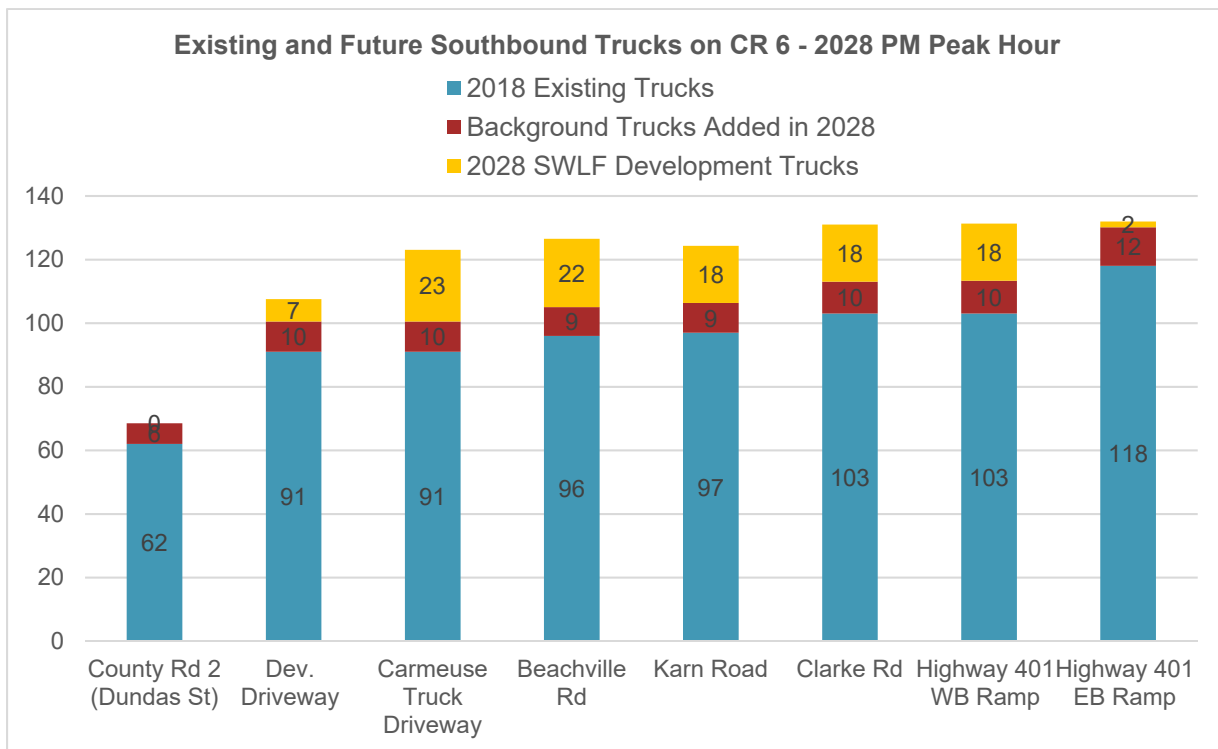


Exhibit 12-4: Existing and Future Southbound Trucks on County Road 6 (2028 PM peak hour)

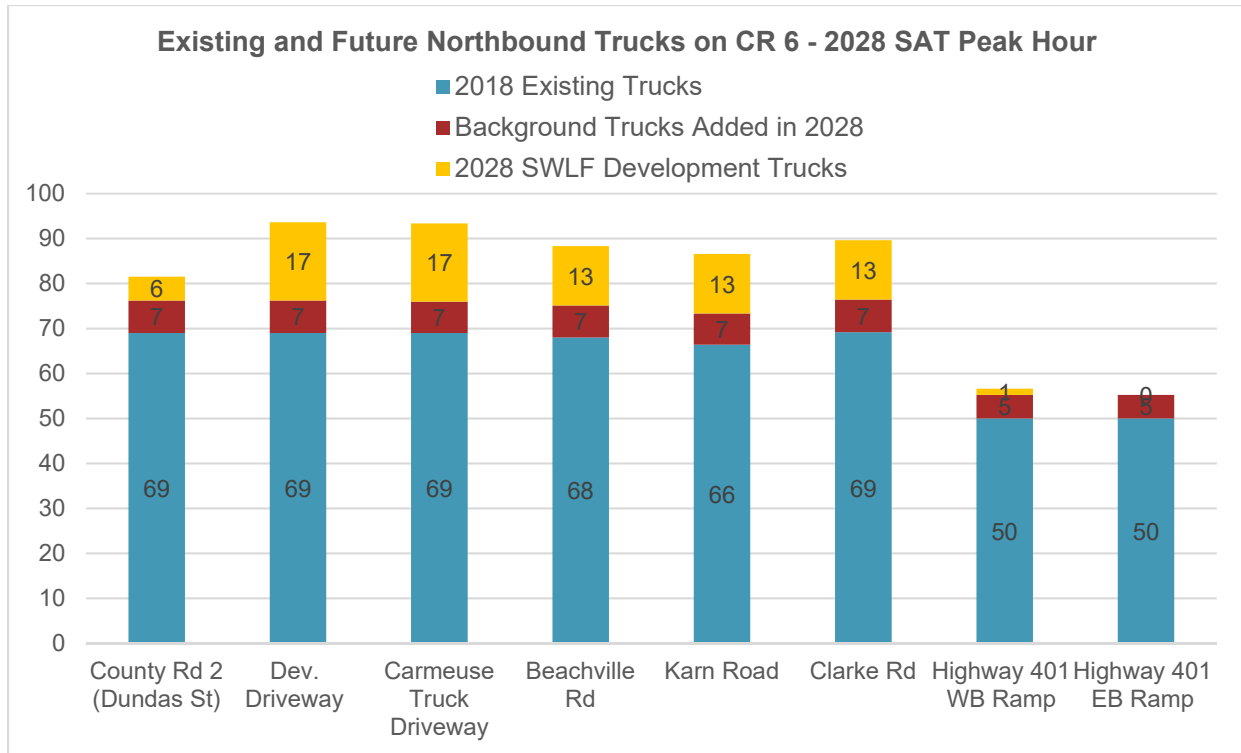


Exhibit 12-5: Existing and Future Northbound Trucks on County Road 6 (2028 SAT)

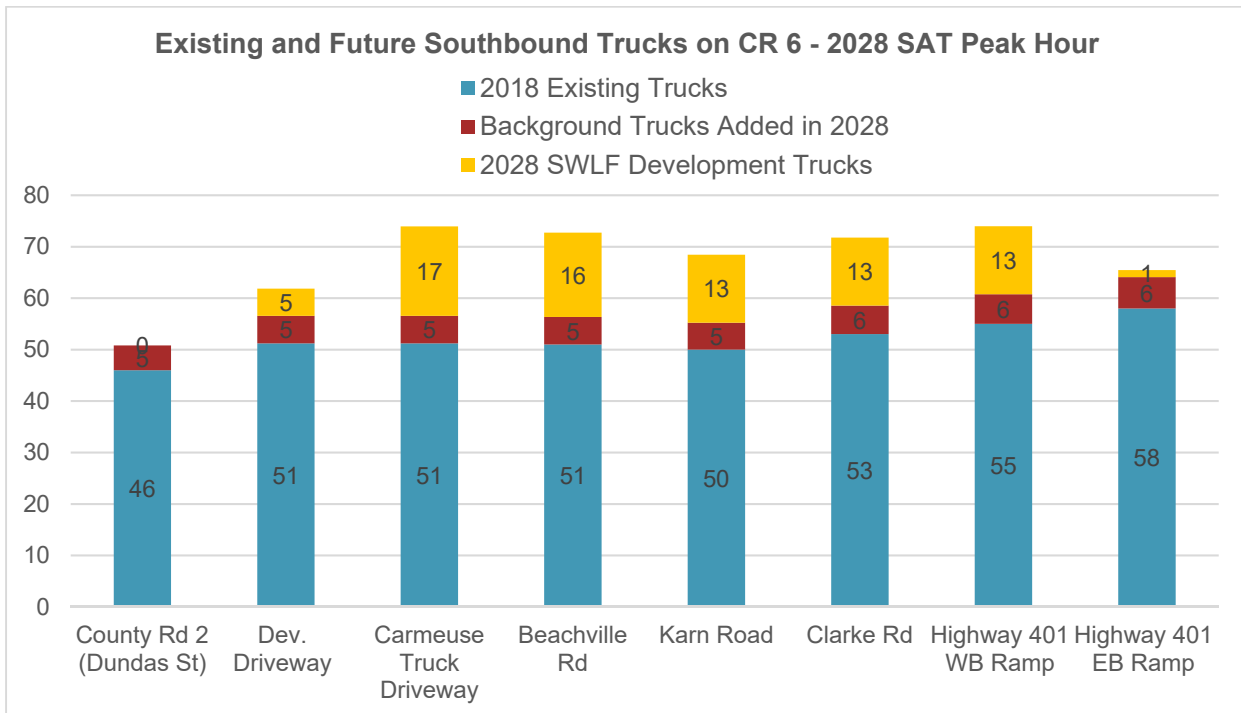


Exhibit 12-6: Existing and Future Southbound Trucks on County Road 6 (2028 SAT)

The truck volumes on County Road 6 in 2033 are shown from **Exhibit 12-7** to **Exhibit 12-12**.

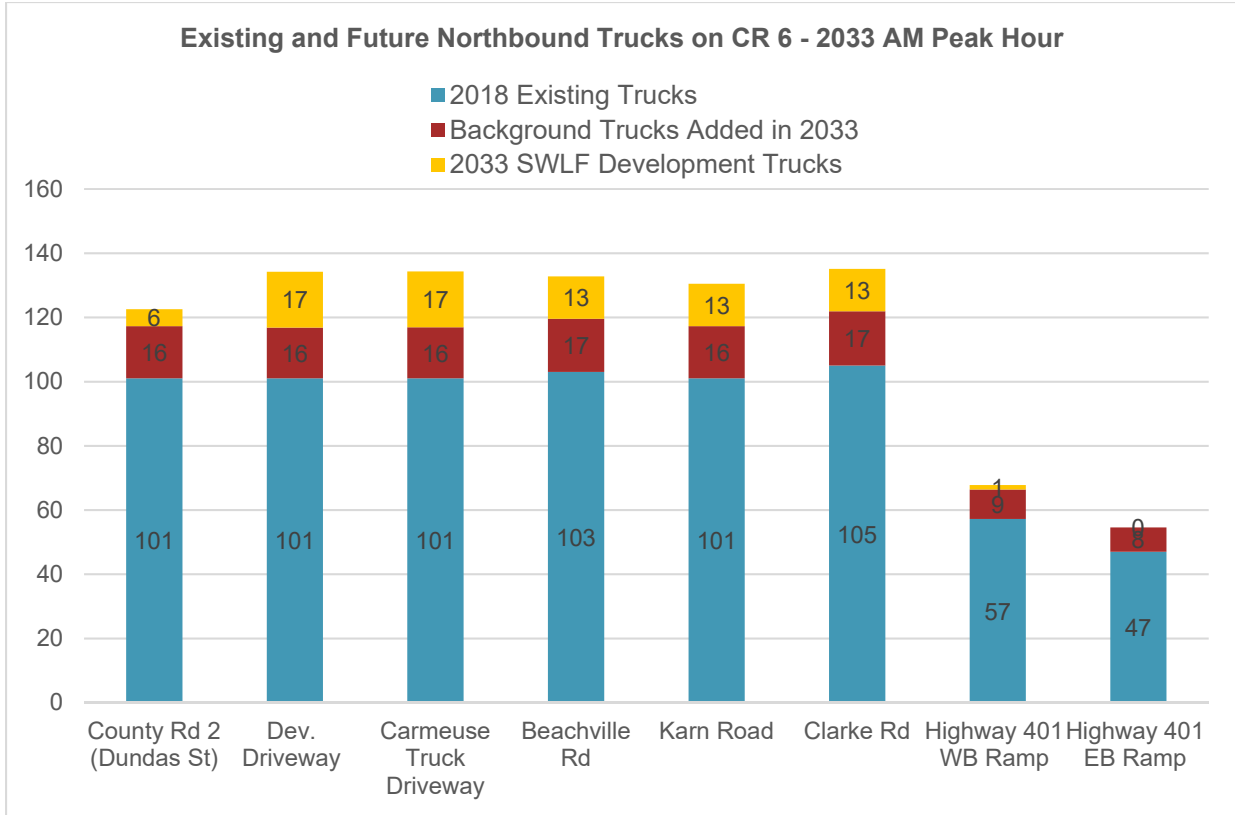


Exhibit 12-7: Existing and Future Northbound Trucks on County Road 6 (2033 AM peak hour)

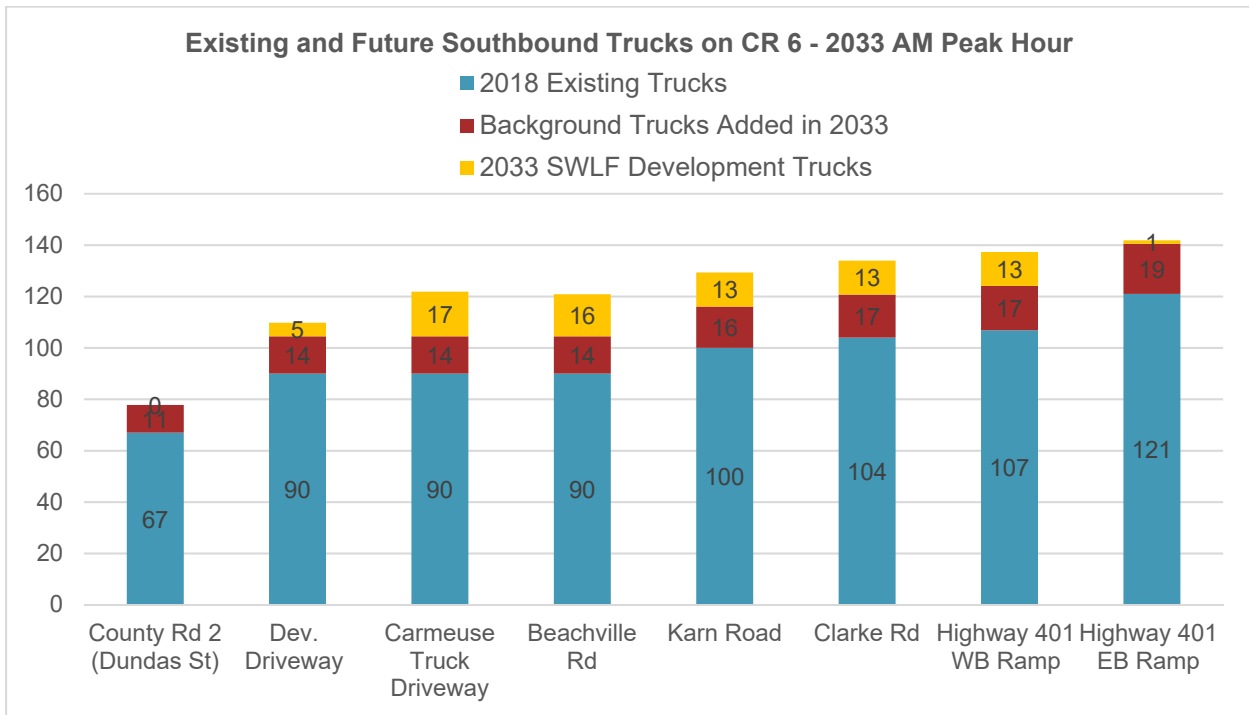


Exhibit 12-8: Existing and Future Southbound Trucks on County Road 6 (2033 AM peak hour)

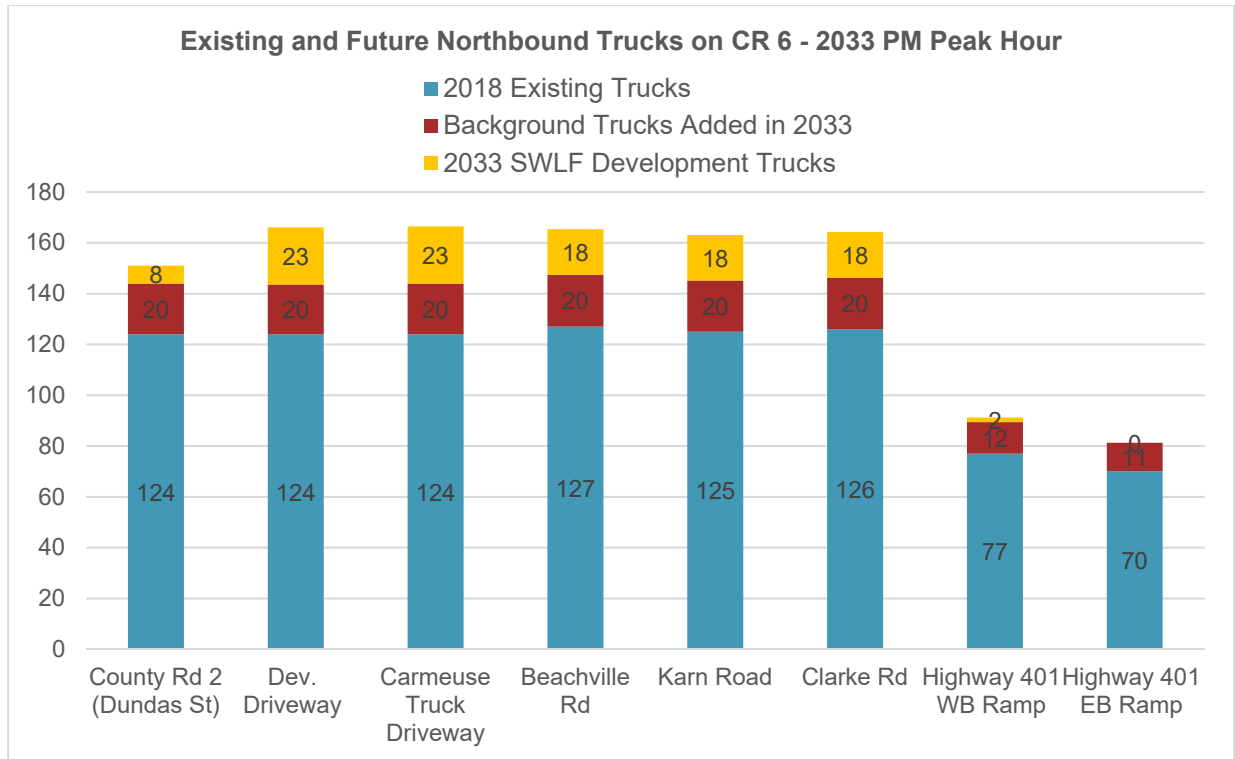


Exhibit 12-9: Existing and Future Northbound Trucks on County Road 6 (2033 PM peak hour)

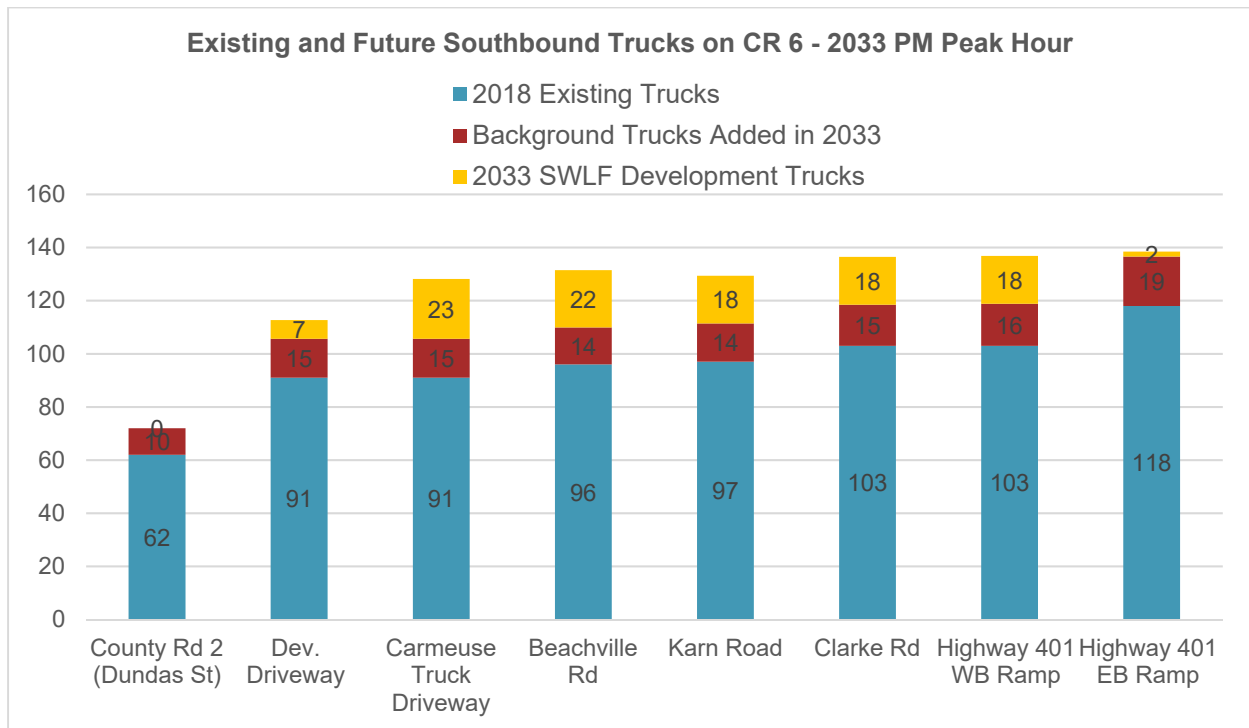


Exhibit 12-10: Existing and Future Southbound Trucks on County Road 6 (2033 PM peak hour)

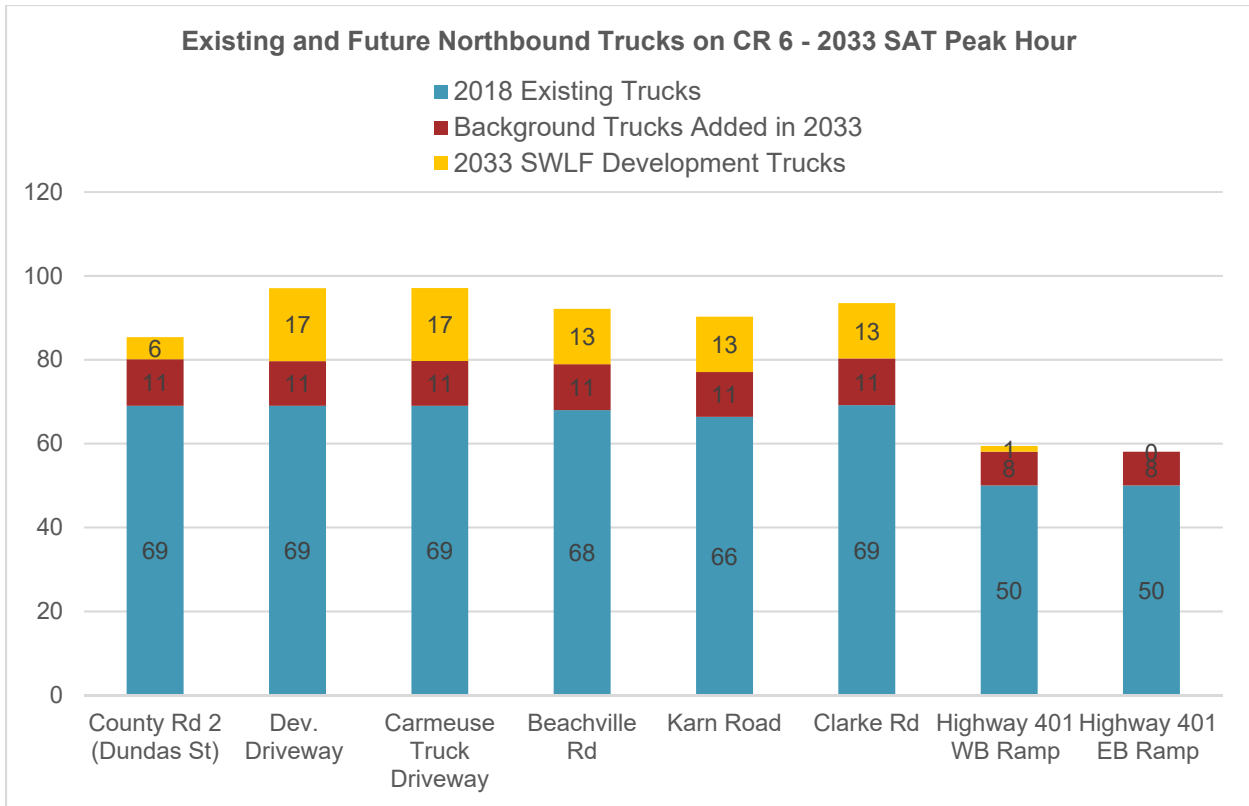


Exhibit 12-11: Existing and Future Northbound Trucks on County Road 6 (2033 SAT)

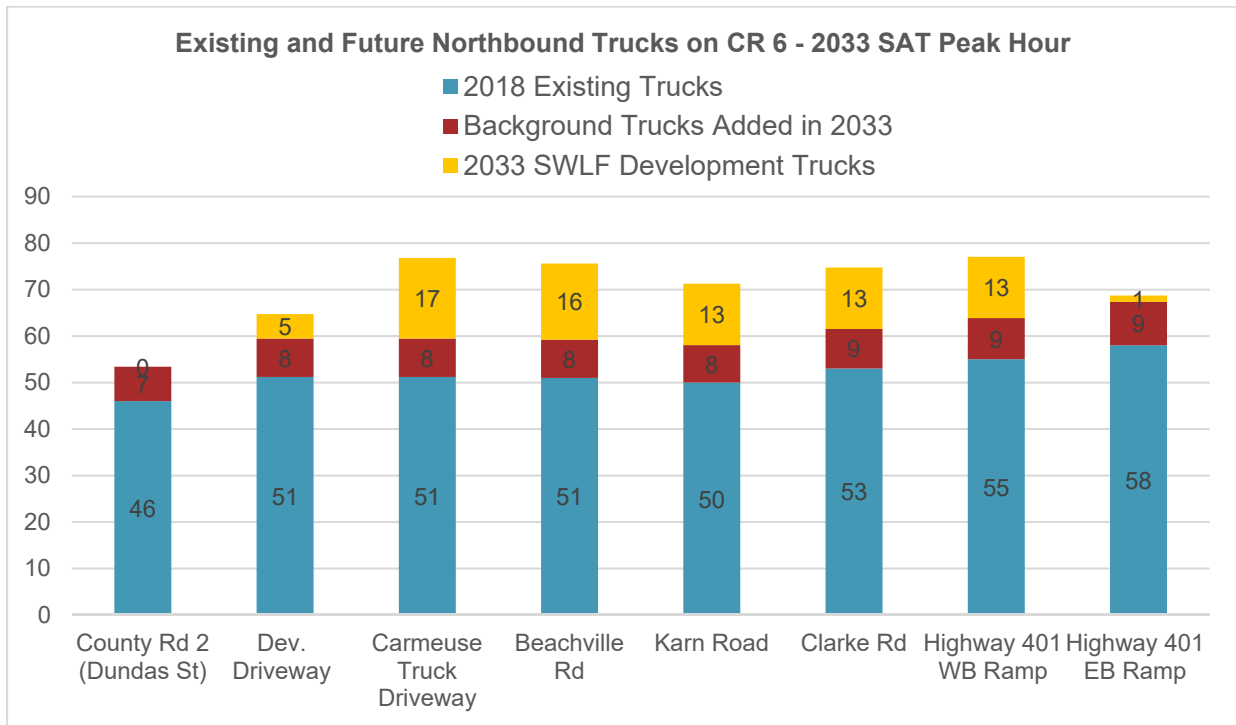


Exhibit 12-12: Existing and Future Southbound Trucks on County Road 6 (2033 SAT)

Exhibit 12-13 shows the future traffic volumes generated by the landfill within the study area.

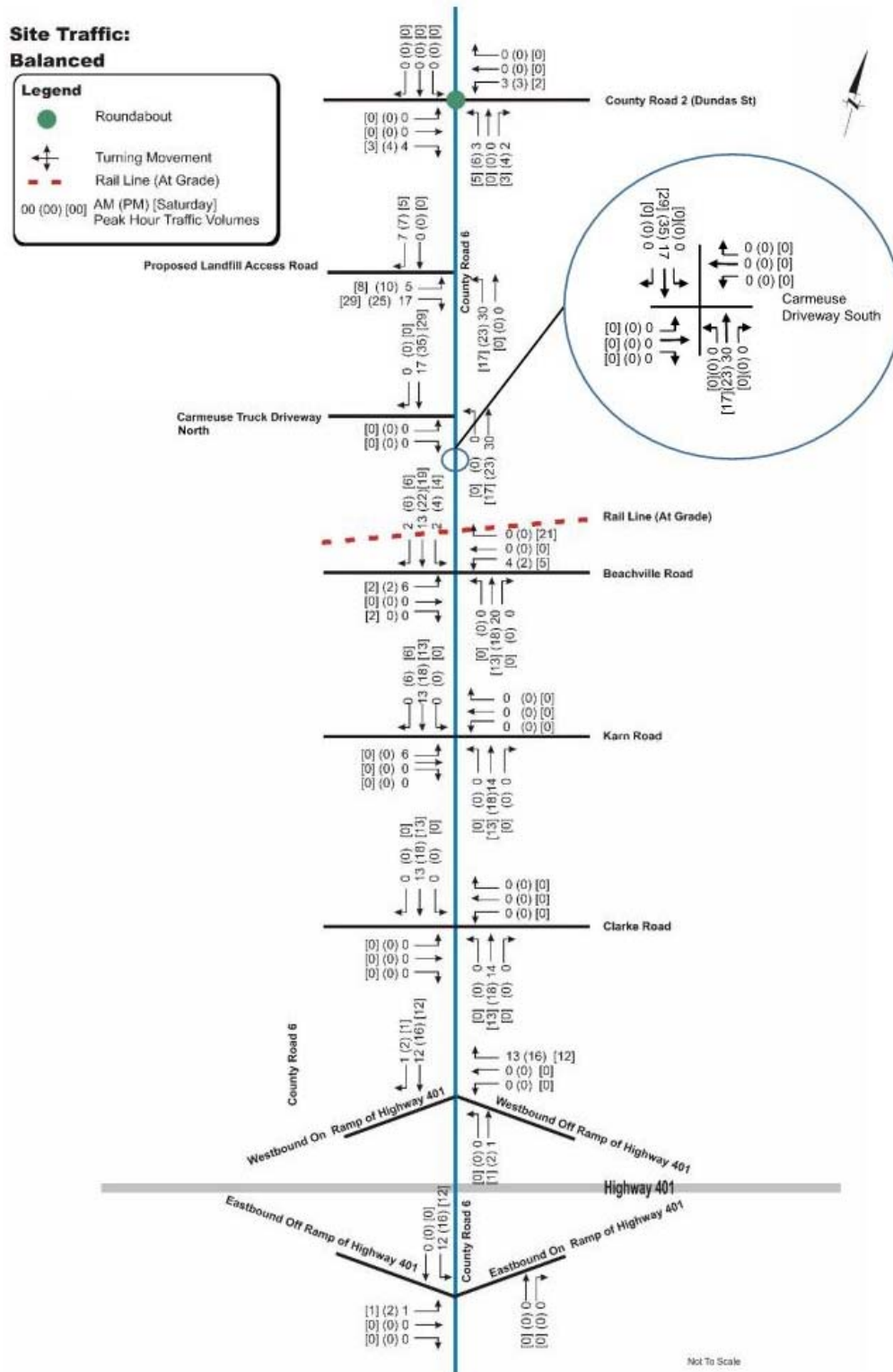


Exhibit 12-13: Future SWLF Development Traffic Volumes (applicable to all years)

12.2 Future 2028 Traffic Conditions

12.2.1 Planned Network Improvements

No planned road network improvements were identified within the study area.

12.2.2 Background Traffic Volumes

Future background traffic volumes are comprised of existing traffic volumes plus background traffic growth (based on population and employment growth), plus truck volumes associated with Carmeuse, which have been already discussed in previous **Sections 12.1. Exhibit 12-14** shows the 2028 background traffic volumes.

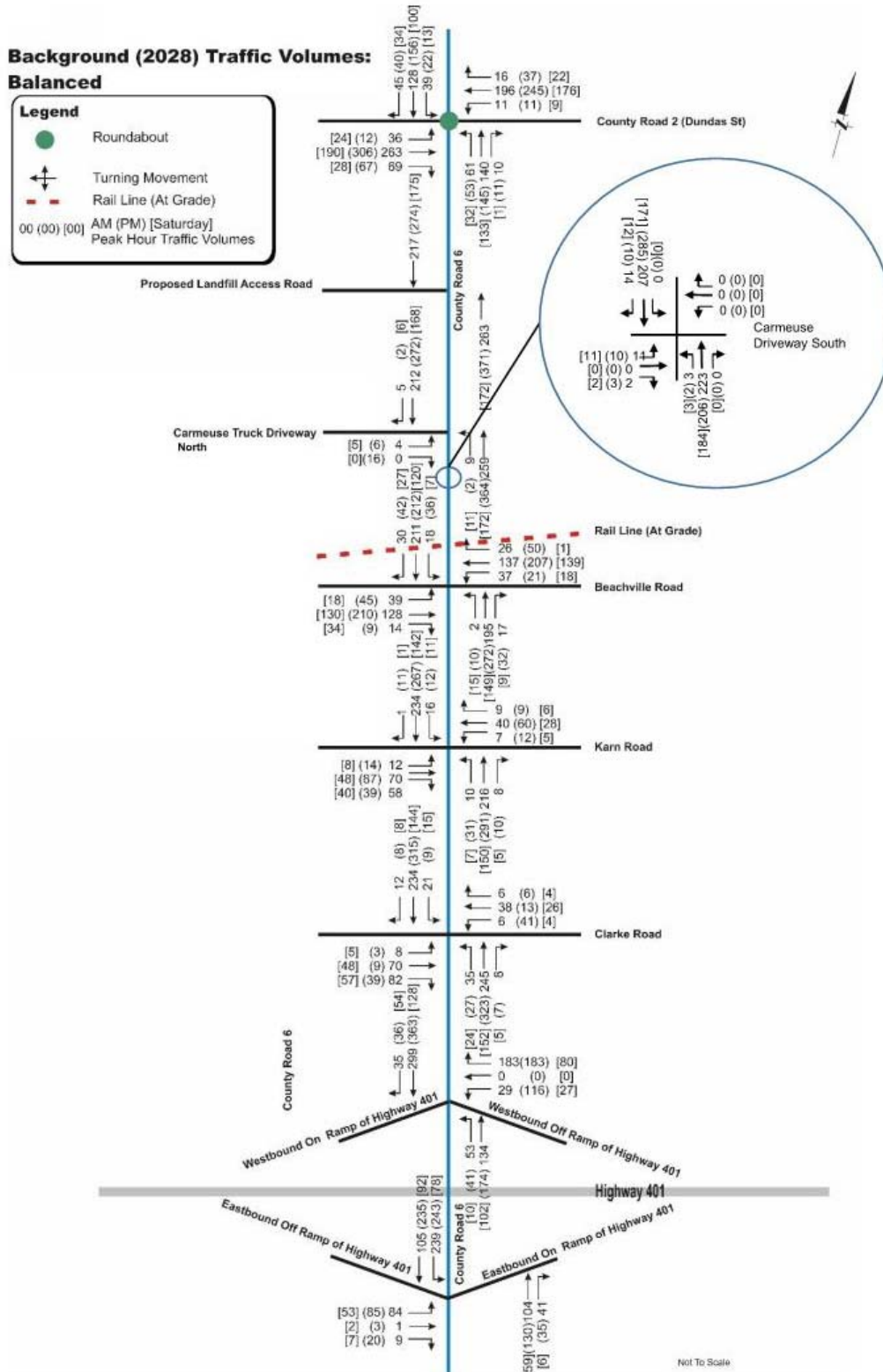


Exhibit 12-14: 2028 Background Traffic Volumes

12.2.3 Total Traffic Volumes

Total traffic volumes are comprised of the background traffic plus truck volumes generated by the proposed site. **Exhibit 12-15** shows the 2028 total traffic volumes.

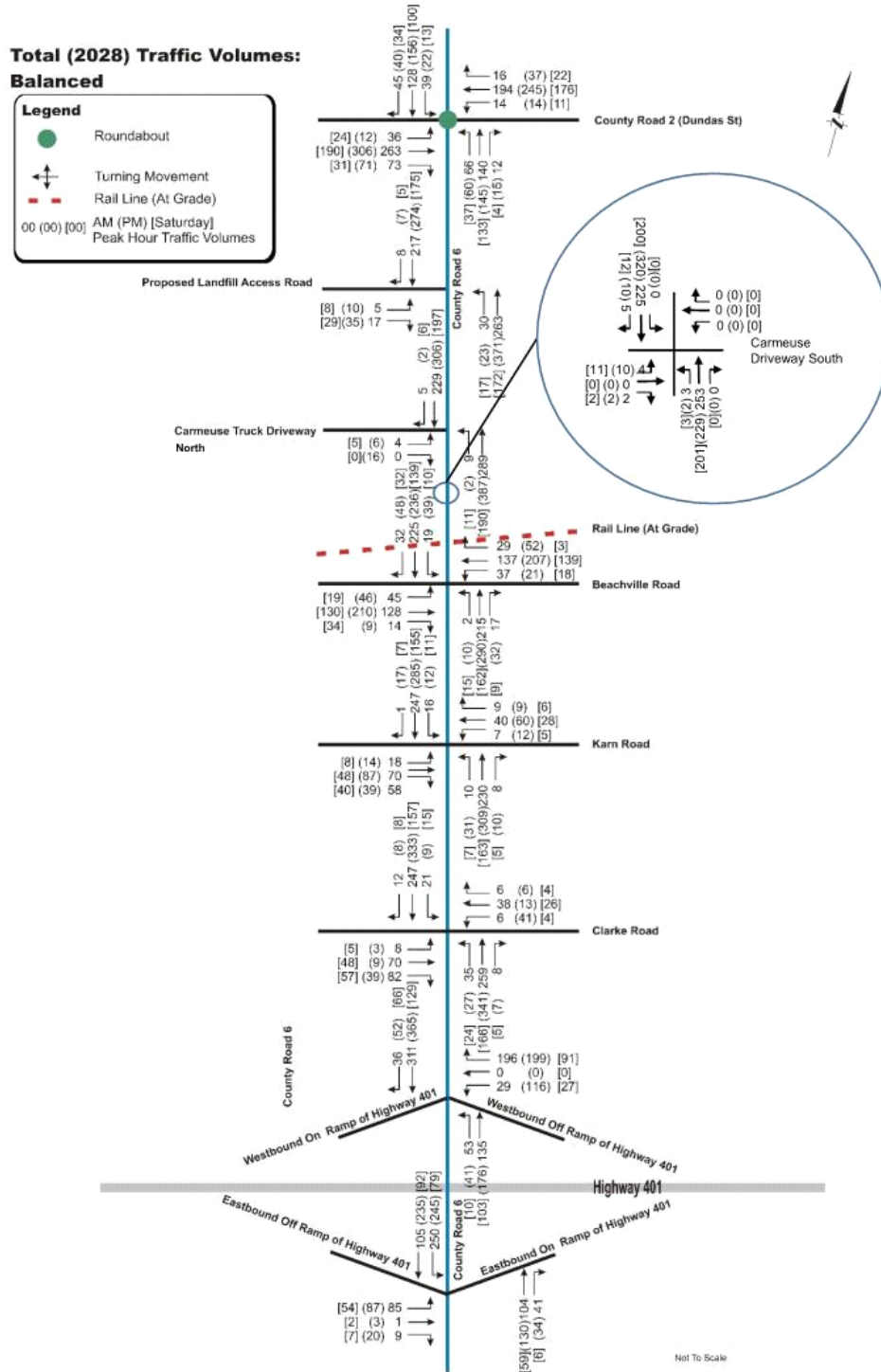


Exhibit 12-15: 2028 Total Traffic Volumes

Exhibit 12-16 and Exhibit 12-17 show the medium and heavy truck volumes in 2028.

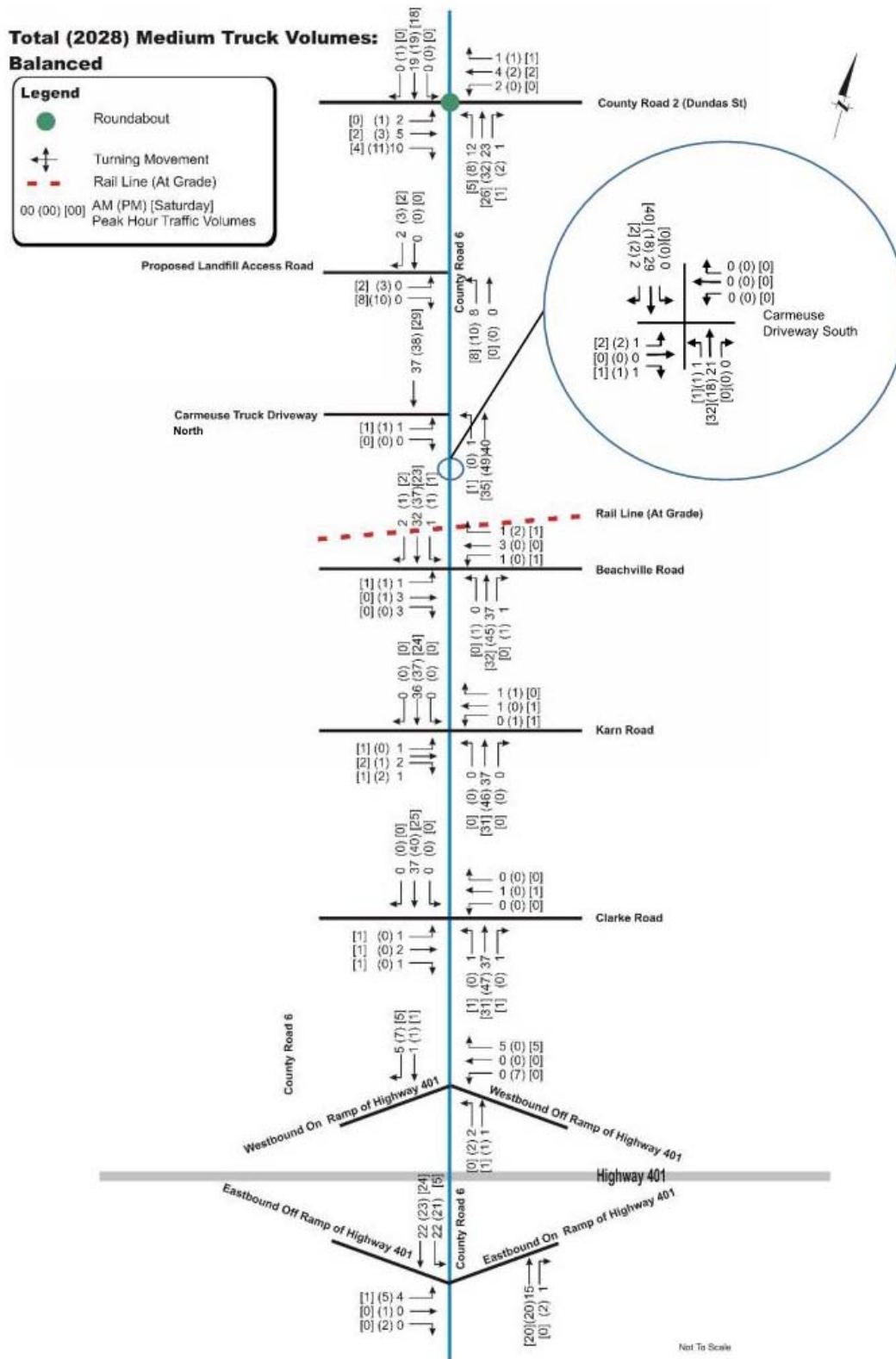


Exhibit 12-16: 2028 Medium Truck Volumes

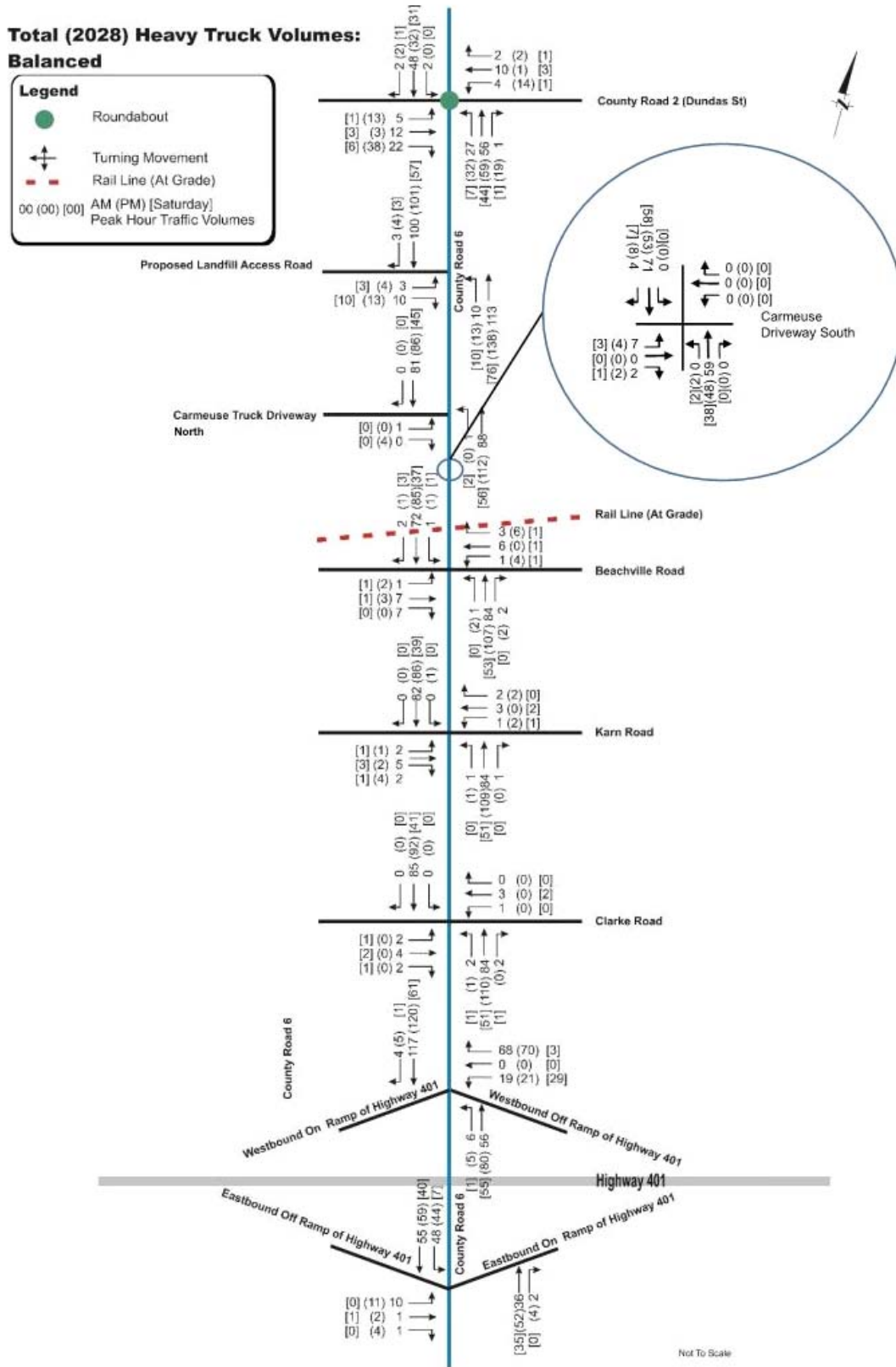


Exhibit 12-17: 2028 Heavy Truck Volumes

12.2.4 Background and Total Traffic Operations

Intersection operations for both background traffic and total traffic are summarized in **Table 12-5**, **Exhibit 12-18** and **Exhibit 12-19** show the background and total intersection movement level of service. Detail Synchro results are provided in **Appendix E**.

Table 12-5: Intersection Operation Summary for 2028 Background and Total Traffic Conditions

Intersection	AM						PM						SAT					
	2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition		
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
Roundabout : County Road 6 & County Road 2 (Dundas St)																		
Overall	A	0.36		A	0.37		A	0.38		A	0.38		A	0.20		A	0.20	
EB LTR	A	0.36	18	A	0.37	18	A	0.38	19	A	0.38	19	A	0.20	7	A	0.20	8
WB LTR	A	0.26	14	A	0.26	14	A	0.28	15	A	0.29	15	A	0.19	9	A	0.20	9
NB LTR	A	0.35	17	A	0.35	17	A	0.27	12	A	0.28	12	A	0.18	6	A	0.18	6
SB LTR	A	0.25	14	A	0.25	14	A	0.25	14	A	0.26	14	A	0.13	6	A	0.13	6
County Road 6 & Landfill Access Road																		
Overall	-	-	-	A			-	-	-	A			A			A		
EB LR	-	-	-	B	0.05	1.2	-	-	-	B	0.09	2.3	-	-	-	B	0.06	1.4
NB TL	A	0.00	0.0	A	0.03	0.8	A	0.00	0.0	A	0.03	0.6	A	0.00	0.0	A	0.02	0.4
SB TR	A	0.14	0.0	A	0.15	0.0	A	0.17	0.0	A	0.17	0.0	A	0.11	0.0	A	0.11	0.0
County Road 6 & Carneuse Gate 2 Driveway																		
Overall	A			A			A			A			A			A		
EB LR	B	0.01	0.2	B	0.01	0.2	B	0.04	0.9	B	0.04	1.0	B	0.01	0.2	B	0.01	0.2



Intersection		AM						PM						SAT					
		2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition		
		LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
NB	TL	A	0.11	0.2	A	0.13	0.2	A	0.15	0.0	A	0.16	0.0	A	0.07	0.2	A	0.08	0.2
SB	TR	A	0.14	0.0	A	0.15	0.0	A	0.17	0.0	A	0.19	0.0	A	0.11	0.0	A	0.12	0.0
County Road 6 & Beachville Road																			
	Overall	C			C			C			D			B			B		
EB	LT	B	0.36	1.6	B	0.39	1.8	C	0.56	3.3	C	0.59	3.8	B	0.25	1.0	B	0.27	1.1
	R	A	0.03	0.1	A	0.03	0.1	A	0.02	0.1	B	0.02	0.1	A	0.05	0.2	A	0.05	0.2
WB	LT	B	0.38	1.7	B	0.40	1.8	C	0.50	2.7	C	0.53	3.0	B	0.27	1.1	B	0.28	1.1
	R	A	0.05	0.1	A	0.06	0.2	B	0.10	0.3	B	0.11	0.4	A	0.00	0.0	A	0.00	0.0
NB	LTR	B	0.45	2.3	C	0.51	2.9	C	0.65	4.6	D	0.72	5.8	B	0.26	1.0	B	0.29	1.2
SB	LTR	B	0.51	2.8	C	0.57	3.6	C	0.56	3.5	C	0.66	4.8	B	0.25	1.0	B	0.31	1.3
County Road 6 & Karn Road																			
	Overall	A			A			A			A			A			A		
EB	LTR	C	0.32	10.4	C	0.35	12.0	C	0.37	12.5	C	0.39	13.6	B	0.15	4.1	B	0.16	4.3
WB	LTR	C	0.16	4.2	C	0.16	4.4	C	0.24	7.0	C	0.26	7.6	B	0.07	1.8	B	0.07	1.8
NB	LT	A	0.01	0.2	A	0.01	0.2	A	0.03	0.6	A	0.03	0.6	A	0.01	0.1	A	0.01	0.1
	R	A	0.01	0.0	A	0.01	0.0	A	0.01	0.0	A	0.01	0.0	A	0.00	0.0	A	0.00	0.0
SB	LT	A	0.01	0.3	A	0.01	0.3	A	0.01	0.3	A	0.01	0.3	A	0.01	0.2	A	0.01	0.2
	TR	A	0.08	0.0	A	0.09	0.3	A	0.09	0.0	A	0.10	0.0	A	0.05	0.0	A	0.06	0.2
County Road 6 & Clarke Road																			
	Overall	A			A			B			B			A			A		
EB	LTR	C	0.39	13.7	C	0.40	14.5	B	0.09	2.4	B	0.10	2.4	B	0.18	4.9	B	0.18	5.1

Intersection		AM						PM						SAT					
		2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition		
		LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
WB	LTR	C	0.17	4.7	C	0.18	5.0	C	0.20	5.7	C	0.22	6.1	B	0.07	1.7	B	0.07	1.8
NB	LT	A	0.03	0.8	A	0.03	0.8	A	0.02	0.5	A	0.02	0.5	A	0.02	0.4	A	0.02	0.4
	R	-	0.01	0.0	-	0.01	0.0	A	0.00	0.0	A	0.00	0.0	A	0.00	0.0	A	0.00	0.0
SB	LT	A	0.02	0.4	A	0.02	0.4	A	0.01	0.2	A	0.01	0.2	A	0.01	0.4	A	0.01	0.3
	TR	-	0.01	0.0	-	0.01	0.0	A	0.00	0.0	A	0.00	0.0	A	0.01	0.3	A	0.01	0.0
County Road 6 & Highway 401 WB On Ramp/WB Off Ramp																			
	Overall	A			A			B			B			A			A		
WB	LTR	B	0.36	13.5	B	0.38	13.7	C	0.60	29.3	C	0.63	32.6	B	0.14	3.7	B	0.16	4.2
NB	LT	A	0.05	1.3	A	0.05	1.3	A	0.04	0.9	A	0.04	0.9	A	0.01	0.2	A	0.01	0.2
SB	TR	A	0.23	0.0	A	0.23	0.0	A	0.24	0.0	A	0.26	0.0	A	0.12	0.0	A	0.12	0.0
County Road 6 & Highway 401 EB On Ramp/EB Off Ramp																			
	Overall	A			A			A			A			A			A		
EB	LTR	D	0.42	15.0	D	0.43	15.6	D	0.48	18.1	D	0.48	18.2	B	0.10	2.6	B	0.10	2.6
NB	TR	A	0.10	0.0	A	0.10	0.0	A	0.10	0.0	A	0.10	0.0	A	0.04	0.0	A	0.04	0.0
SB	LT	A	0.25	7.5	A	0.22	6.3	A	0.19	5.5	A	0.19	5.5	A	0.05	1.3	A	0.06	1.5
County Road 6 & Rail Line (At Grade Hypothetical Signal)																			
		A 0.23			A 0.25			A 0.27			A 0.29			A 0.11			A 0.13		



Intersection		AM						PM						SAT					
		2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition			2028 Background Condition			2028 Total Condition		
		LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
EW	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NB	T	A	0.20	52.2	A	0.25	61.6	A	0.26	73.4	A	0.30	82.3	A	0.11	29.8	A	0.13	36.6
SB	T	A	0.22	57.0	A	0.24	61.7	A	0.19	54.2	A	0.25	63.9	A	0.10	29.8	A	0.13	36.4

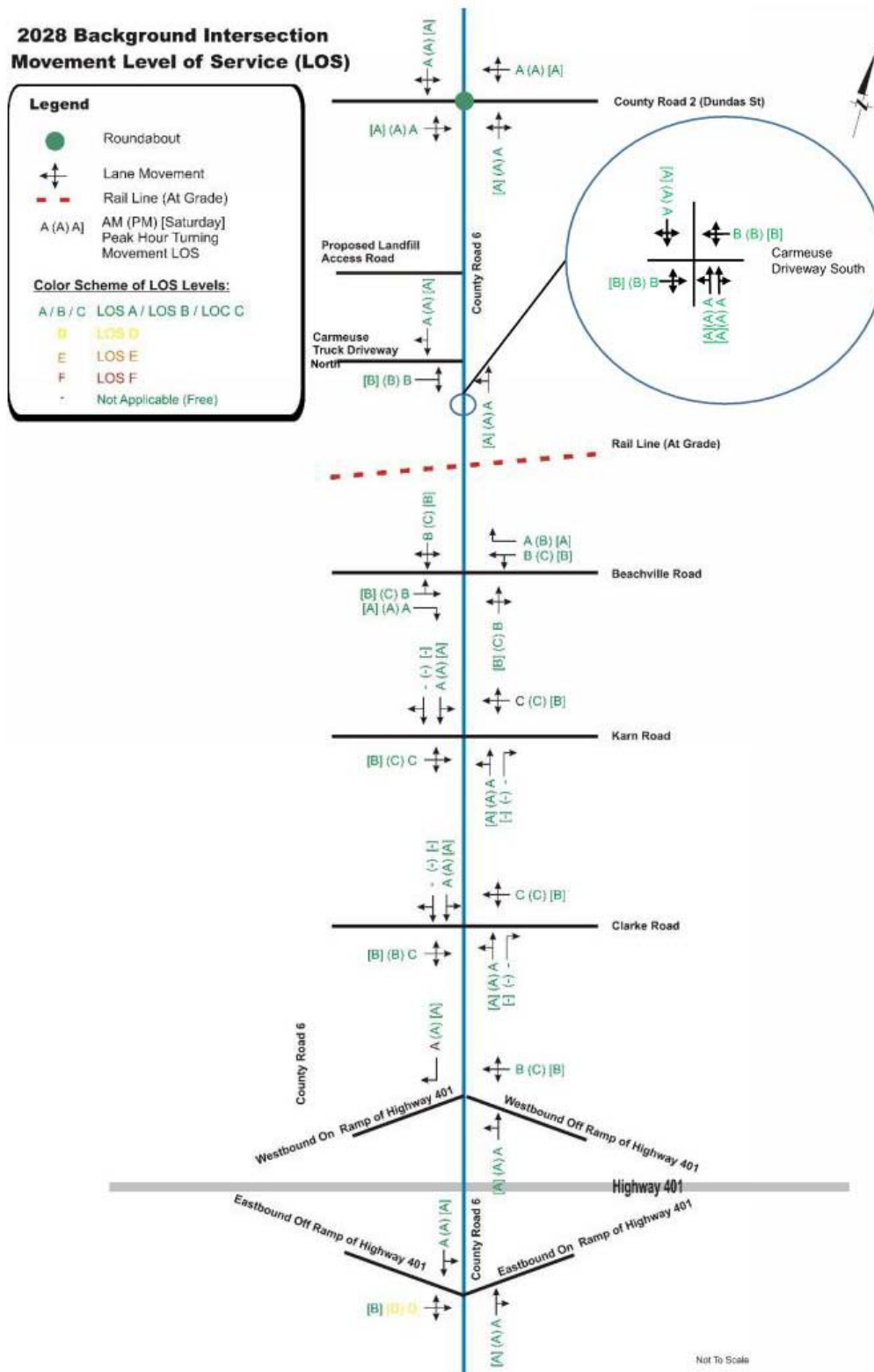


Exhibit 12-18: 2028 Background Intersection Movement Level of Service

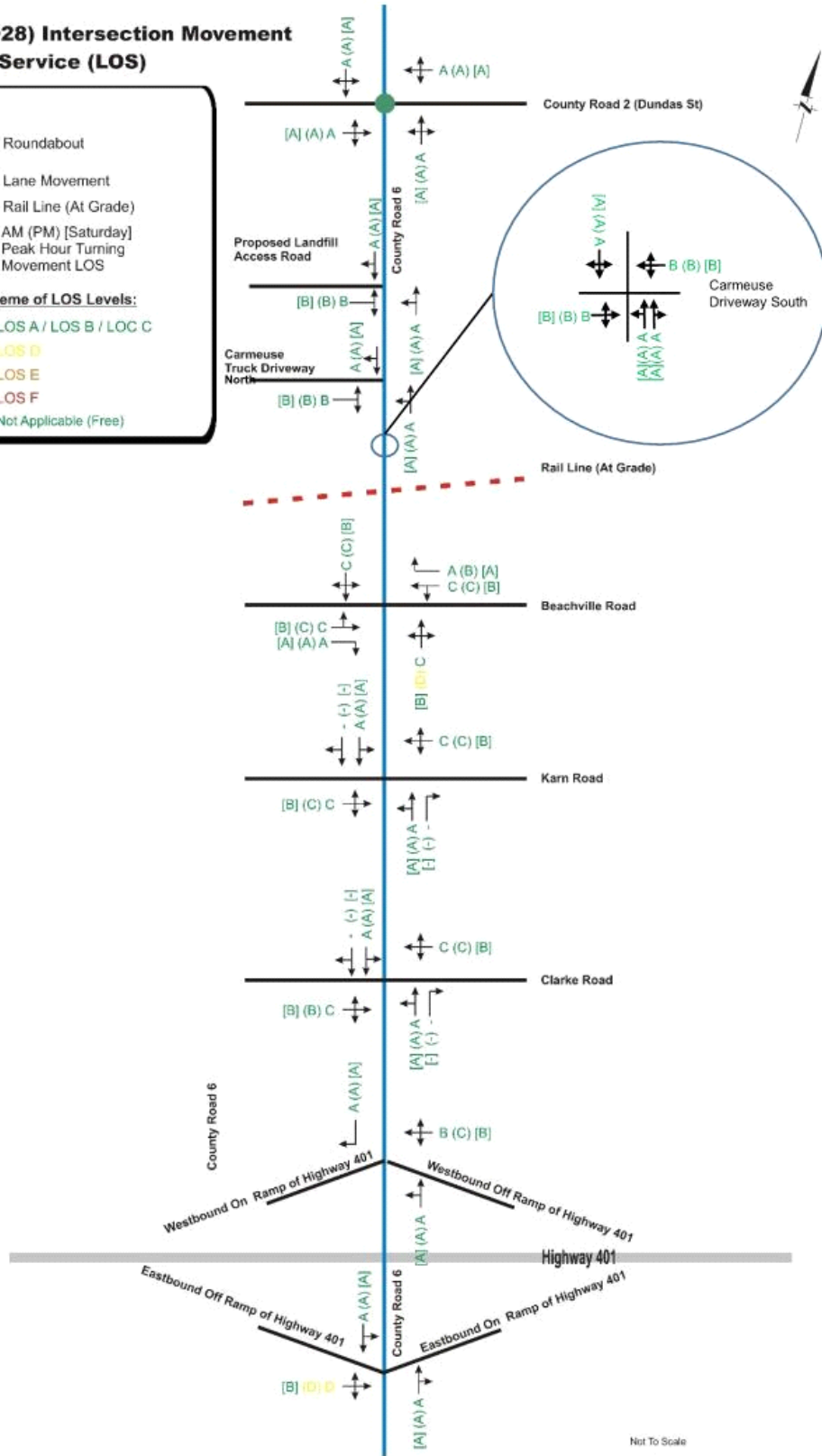
**Total (2028) Intersection Movement
 Level of Service (LOS)**

Legend

- Roundabout
- Lane Movement
- Rail Line (At Grade)
- A (A) A AM (PM) [Saturday] Peak Hour Turning Movement LOS

Color Scheme of LOS Levels:

A / B / C	LOS A / LOS B / LOC C
	LOS D
	LOS E
	LOS F
-	Not Applicable (Free)



Not To Scale

Exhibit 12-19: 2028 Total Intersection Movement Level of Service

Under future background conditions, all movements at each intersection within the study area will continue to operate with residual capacity (volume to capacity ratios of 0.65 or better) and level of service D or better during the AM, PM, and Saturday analysis periods. Only the Highway 401 / CR 6 interchange eastbound off ramp movement and the Beachville / CR 6 northbound movement will operate at LOS D. Queues will be accommodated within the existing on-site storage lanes. There are no operational concerns under future background conditions.

Under future total traffic condition, all movements at each intersection within the study area will continue to operate with residual capacity (volume to capacity ratios of 0.71 or better) and level of service D or better during the AM, PM, and Saturday analysis periods. Only the Highway 401 / CR 6 interchange eastbound off ramp movement and the Beachville / CR 6 northbound movement will operate at LOS D. The proposed landfill will not worsen these movements operating at LOS D relative to future background traffic conditions. Queues will be accommodated within the existing on-site storage lanes.

12.3 Future 2033 Traffic Conditions

12.3.1 Planned Network Improvements

No planned road network improvements were identified within the study area, based on the Oxford County TMP.

12.3.2 Background Traffic Volumes

Future background traffic volumes are comprised of existing traffic volumes plus general background traffic growth, plus truck volumes associated with the proposed landfill.

Exhibit 12-20 shows the 2033 background traffic volumes.

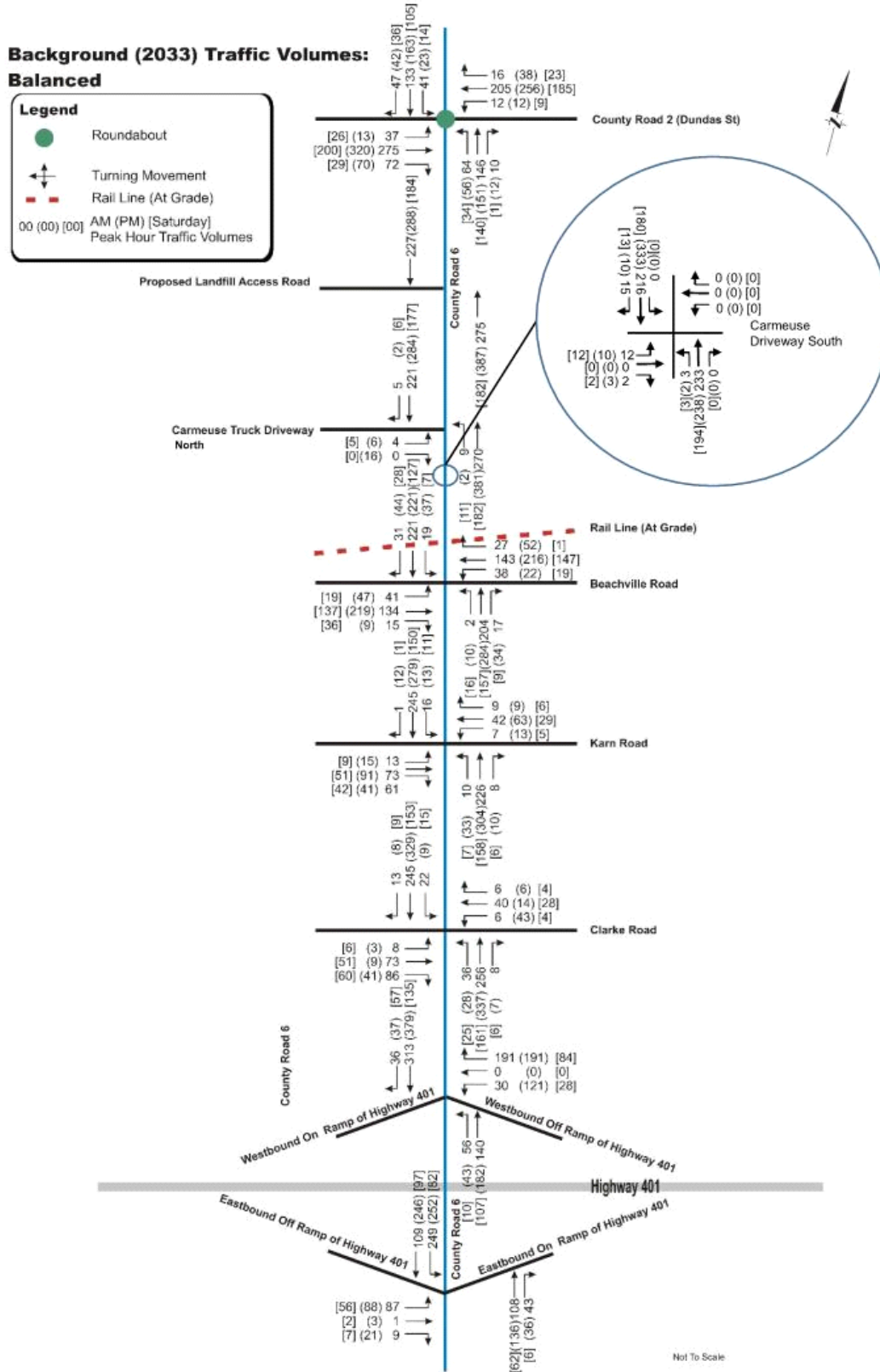


Exhibit 12-20: 2033 Background Traffic Volumes

12.3.3 Total Traffic Volumes

Total traffic volumes are comprised of the background traffic plus truck volumes generated by the site. **Exhibit 12-21** shows the 2033 total traffic volumes.

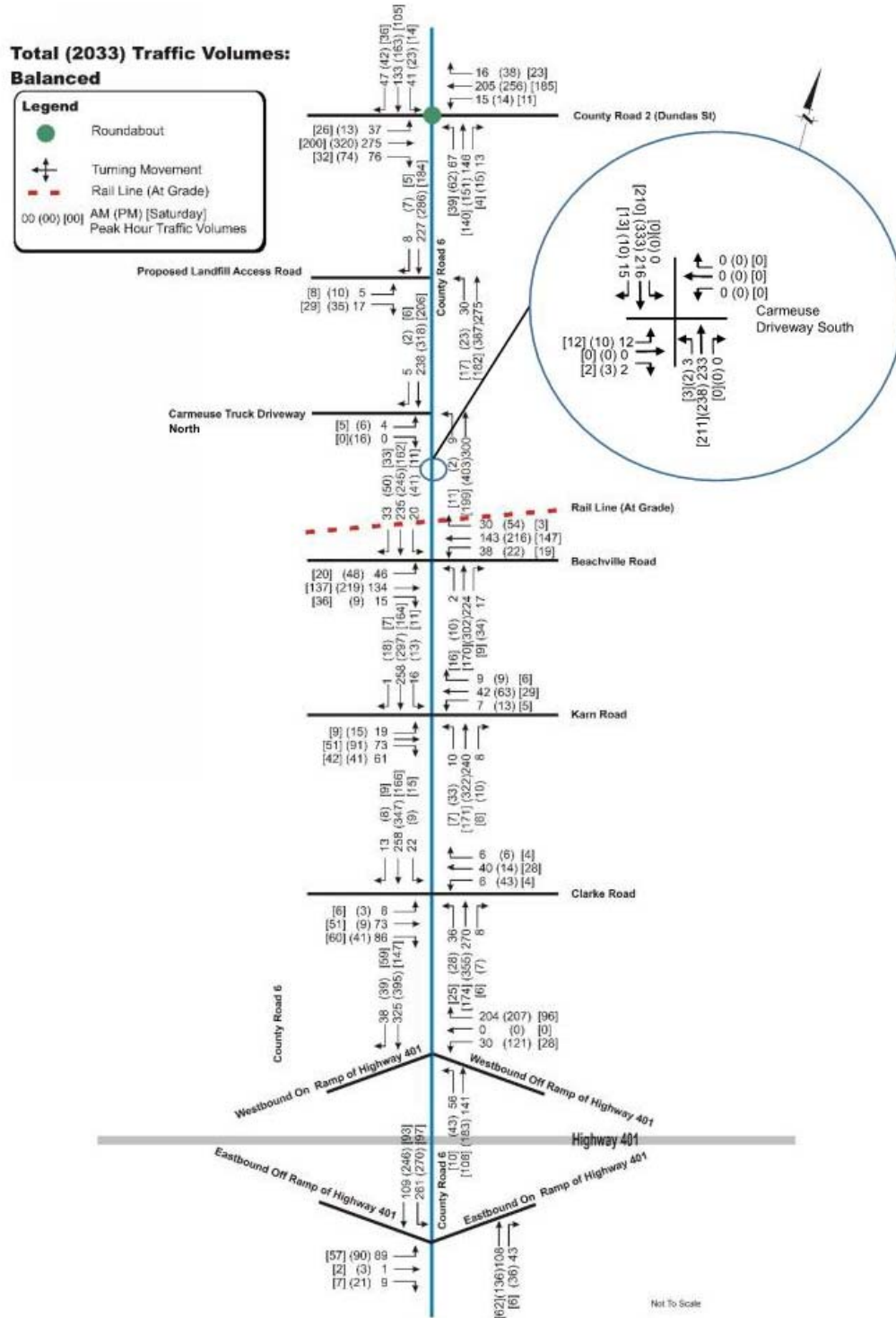


Exhibit 12-21: 2033 Total Traffic Volume

Exhibit 12-22 and Exhibit 12-23 show the medium and heavy truck volumes in 2033.

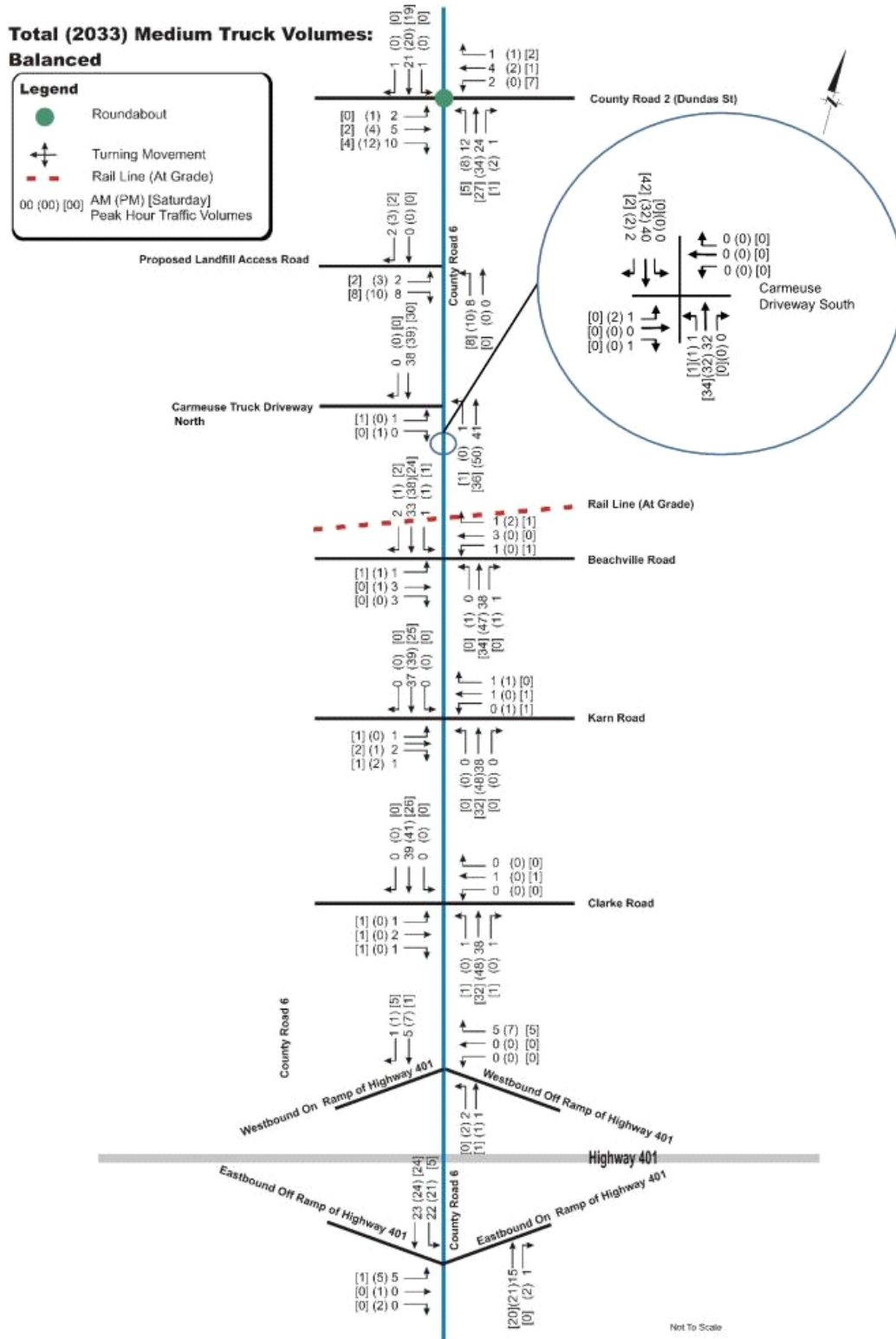


Exhibit 12-22: 2033 Medium Truck Volumes

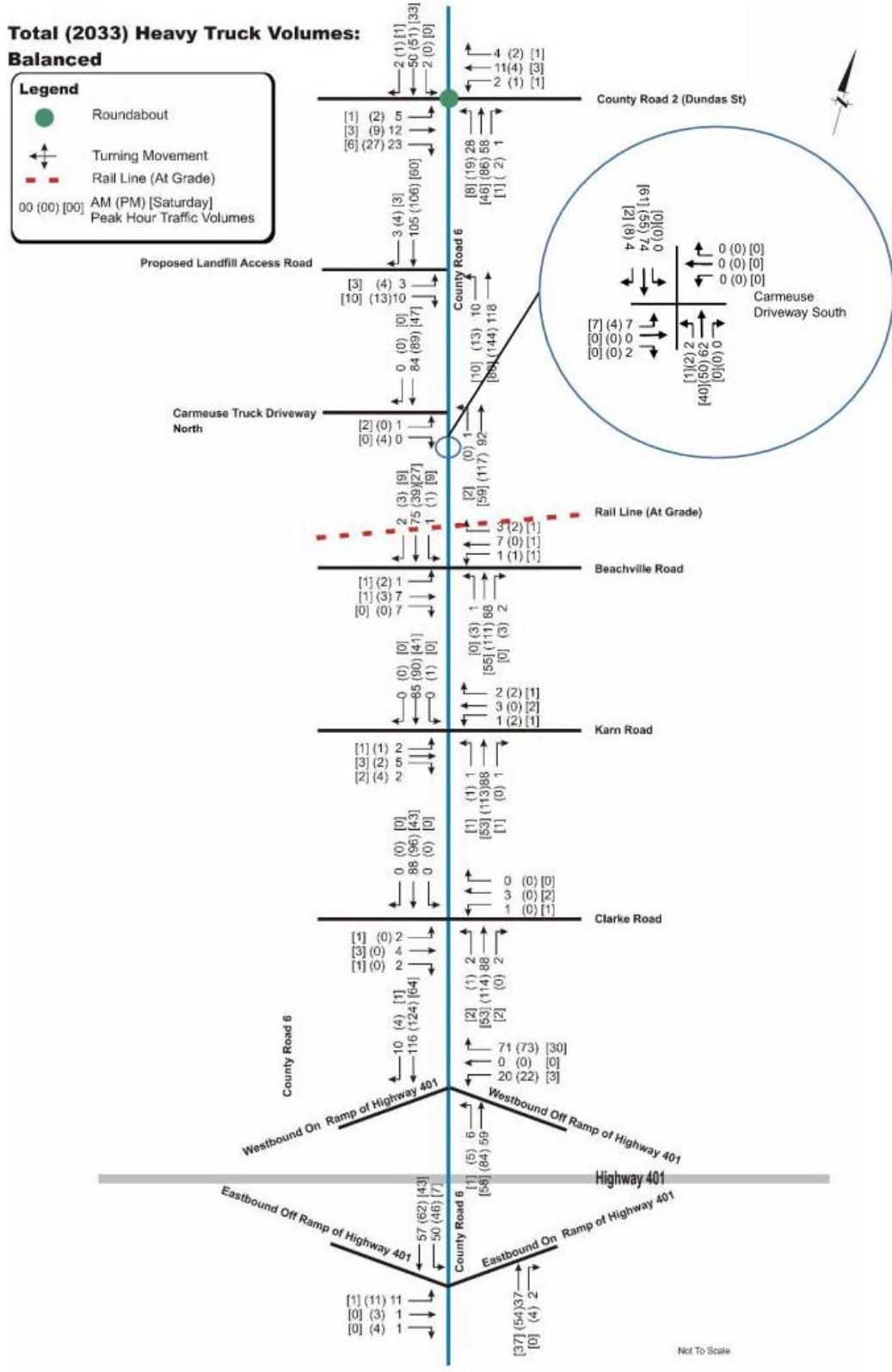


Exhibit 12-23: 2033 Heavy Truck Volumes



12.3.4 Background and Total Traffic Operations

Intersection operations for both background traffic and total traffic are summarized in **Table 12-6. Exhibit 12-24** and **Exhibit 12-25** show the background and total intersection movement level of service. Detail Synchro results are provided in **Appendix E**.

Table 12-6: Intersection Operation Summary for 2033 Background and Total Traffic Conditions

Intersection	AM						PM						SAT						
	2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	
Roundabout : County Road 6 & County Road 2 (Dundas St)																			
Overall	A	0.40		A	0.40		A	0.42		A	0.42		A	0.22		A	0.22		
EB LTR	A	0.40	20	A	0.40	20	A	0.42	21	A	0.42	21	A	0.22	8	A	0.22	8	
WB LTR	A	0.29	16	A	0.29	16	A	0.31	17	A	0.31	17	A	0.21	10	A	0.22	10	
NB LTR	A	0.39	19	A	0.39	20	A	0.30	14	A	0.31	14	A	0.19	7	A	0.20	7	
SB LTR	A	0.28	16	A	0.28	16	A	0.28	16	A	0.29	16	A	0.15	7	A	0.15	7	
County Road 6 & Landfill Access Road																			
Overall	A	-	-	A			A	-	-	A			A			A			
EB LR	-	-	-	B	0.05	1.2	-	-	-	B	0.09	2.3	-	0.00	0.0	B	0.06	1.4	
NB TL	A	0.00	0.0	A	0.03	0.8	A	0.00	0.0	A	0.03	0.7	A	0.00	0.0	A	0.02	0.4	
SB TR	A	0.15	0.0	A	0.15	0.0	A	0.18	0.0	A	0.18	0.0	A	0.11	0.0	A	0.12	0.0	

Intersection	AM						PM						SAT					
	2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition		
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
County Road 6 & Carmeuse Gate 2 Driveway																		
Overall	A			A			A			A			A			A		
EB LR	B	0.01	0.2	B	0.01	0.2	B	0.04	0.9	B	0.04	1.0	B	0.01	0.2	B	0.01	0.2
NB TL	A	0.12	0.2	A	0.01	0.2	A	0.16	0.0	A	0.00	0.0	A	0.01	0.2	A	0.01	0.2
SB TR	A	0.15	0.0	A	0.16	0.0	A	0.18	0.0	A	0.20	0.0	A	0.11	0.0	A	0.13	0.0
County Road 6 & Beachville Road																		
Overall	C			C			C			D			B			B		
EB LT	B	0.39	1.8	C	0.42	2.0	C	0.60	3.9	C	0.64	4.4	B	0.27	1.1	B	0.29	1.2
EB R	A	0.03	0.1	A	0.03	0.1	A	0.02	0.1	B	0.02	0.1	A	0.05	0.2	A	0.06	0.2
WB LT	B	0.40	1.9	C	0.42	2.1	C	0.54	3.2	C	0.57	3.4	B	0.29	1.2	B	0.30	1.3
WB R	A	0.05	0.2	A	0.06	0.2	B	0.11	0.4	B	0.12	0.4	A	0.00	0.0	A	0.00	0.0
NB LTR	C	0.48	2.6	C	0.54	3.2	D	0.71	5.6	D	0.78	6.9	B	0.28	1.1	B	0.30	1.3
SB LTR	C	0.54	3.3	C	0.60	4.0	C	0.61	4.1	D	0.71	5.6	B	0.27	1.1	B	0.33	1.5
County Road 6 & Karn Road																		
Overall	A			A			A			A			A			A		
EB LTR	C	0.35	11.8	C	0.38	13.4	C	0.40	14.4	C	0.42	15.6	B	0.17	4.5	B	0.17	4.7
WB LTR	C	0.17	4.5	C	0.17	4.7	C	0.27	8.0	C	0.28	8.6	B	0.08	1.9	B	0.08	1.9
NB LT	A	0.01	0.2	A	0.01	0.2	A	0.03	0.6	A	0.03	0.7	A	0.01	0.1	A	0.01	0.1
NB R	-	0.01	0.0	-	0.01	0.0	-	0.01	0.0	-	0.01	0.0	-	0.00	0.0	-	0.00	0.0
SB LT	A	0.01	0.3	A	0.01	0.3	A	0.01	0.3	A	0.01	0.3	A	0.01	0.2	A	0.01	0.2



Intersection	AM						PM						SAT						
	2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	
TR	-	0.09	0.0	-	0.09	0.0	-	0.09	0.0	-	0.10	0.0	-	0.05	0.0	-	0.06	0.0	
County Road 6 & Clarke Road																			
Overall	A			A			A			A			A			A			
EB LTR	C	0.42	15.4	C	0.43	16.2	B	0.10	2.5	B	0.10	2.6	B	0.20	5.5	B	0.20	5.7	
WB LTR	C	0.19	5.2	C	0.19	5.4	C	0.22	6.4	C	0.24	6.9	B	0.08	1.9	B	0.08	1.9	
NB	LT	A	0.03	0.8	A	0.03	0.8	A	0.02	0.6	A	0.02	0.6	A	0.02	0.5	A	0.02	0.5
	R	-	0.01	0.0	-	0.01	0.0	-	0.00	0.0	-	0.00	0.0	-	0.00	0.0	-	0.00	0.0
SB	LT	A	0.02	0.5	A	0.02	0.5	A	0.01	0.2	A	0.01	0.2	A	0.01	0.3	A	0.01	0.3
	TR	-	0.01	0.0	-	0.01	0.0	-	0.00	0.0	-	0.00	0.0	-	0.01	0.0	-	0.01	0.0
County Road 6 & Highway 401 WB On Ramp/WB Off Ramp																			
Overall	A			A			A			A			A			A			
WB LTR	B	0.39	13.8	B	0.41	15.0	C	0.64	34.1	D	0.69	39.3	B	0.15	3.9	B	0.16	4.5	
NB LT	A	0.06	1.4	A	0.06	1.4	A	0.04	1.0	A	0.04	1.0	A	0.01	0.2	A	0.01	0.2	
SB TR	A	0.24	0.0	A	0.25	0.0	A	0.25	0.0	-	0.27	0.0	-	0.13	0.0	-	0.14	0.0	
County Road 6 & Highway 401 EB On Ramp/EB Off Ramp																			
Overall	A			A			A			A			A			A			
EB LTR	D	0.45	16.3	D	0.48	18.1	E	0.53	21.2	E	0.62	27.4	B	0.11	2.8	B	0.12	3.0	
NB TR	A	0.10	0.0	A	0.10	0.0	A	0.11	0.0	A	0.11	0.0	A	0.04	0.0	A	0.04	0.0	

Intersection	AM						PM						SAT					
	2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition			2033 Background Condition			2033 Total Condition		
	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue	LOS	v/c	95 th Queue
SB LT	A	0.22	6.3	A	0.23	6.7	A	0.20	5.8	A	0.22	6.3	A	0.06	1.3	A	0.06	1.4
County Road 6 & Rail Line (At Grade Hypothetical Signal)	A	0.23		A	0.26		A	0.27		A	0.31		A	0.11		A	0.16	
EW T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NB T	A	0.21	55.4	A	0.26	65.0	A	0.27	78.4	A	0.31	87.3	A	0.11	31.1	A	0.16	37.2
SB T	A	0.23	60.4	A	0.25	65.3	A	0.20	57.6	A	0.26	67.6	A	0.10	31.4	A	0.16	39.2

**Background (2033) Intersection
Movement Level of Service (LOS)**

Legend

- Roundabout
- Lane Movement
- Rail Line (At Grade)
- A (A) A] AM (PM) [Saturday] Peak Hour Turning Movement LOS

Color Scheme of LOS Levels:

- A / B / C LOS A / LOS B / LOC C
- LOS D
- LOS E
- LOS F
- Not Applicable (Free)

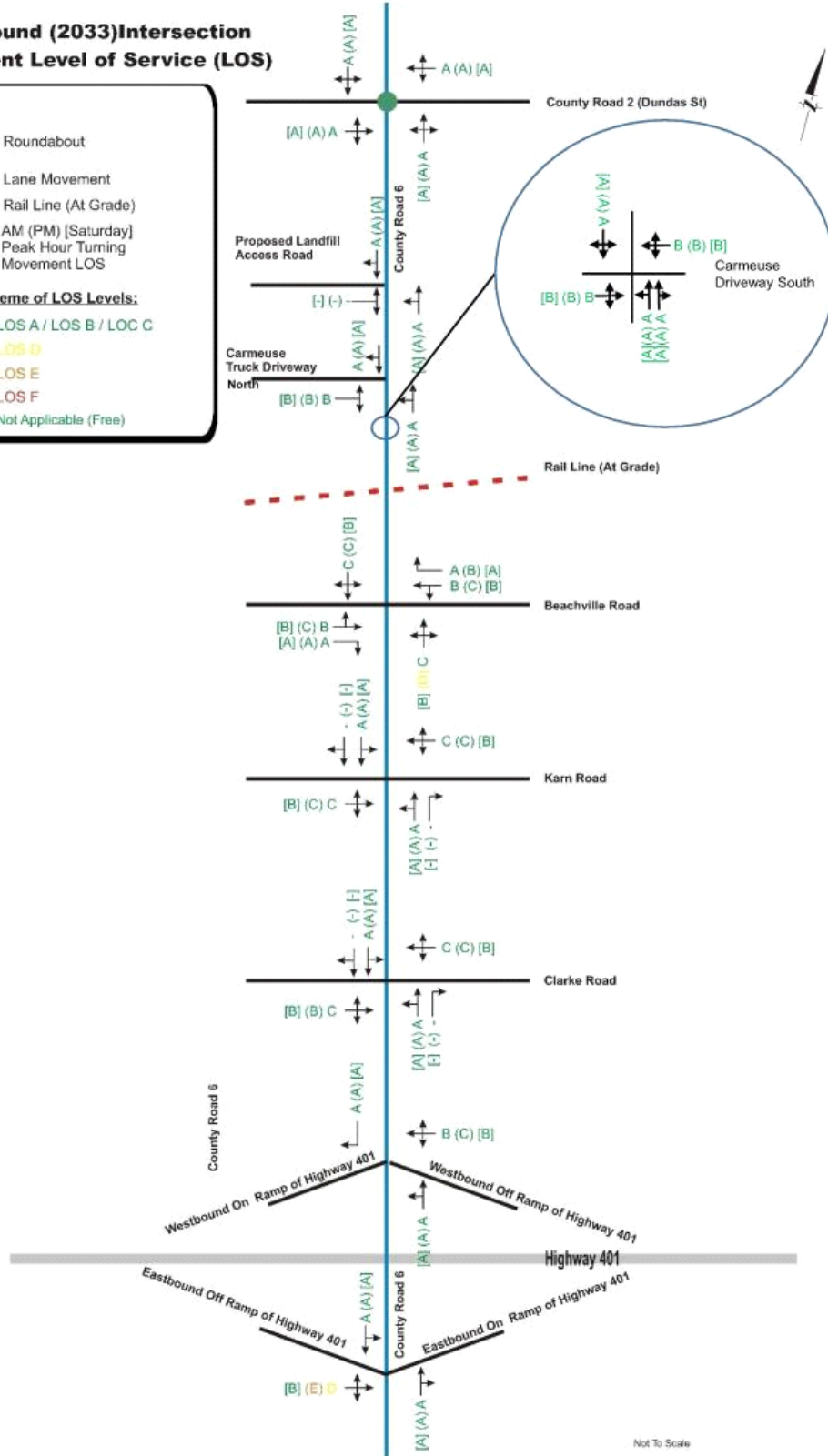


Exhibit 12-24: 2033 Background Intersection Movement Level of Service

Total (2033) Intersection Movement Level of Service (LOS)

Legend

- Roundabout
- \leftrightarrow Lane Movement
- - - Rail Line (At Grade)
- A (A) A] AM (PM) [Saturday] Peak Hour Turning Movement LOS

Color Scheme of LOS Levels:

- A / B / C LOS A / LOS B / LOC C
- D LOS D
- E LOS E
- F LOS F
- Not Applicable (Free)

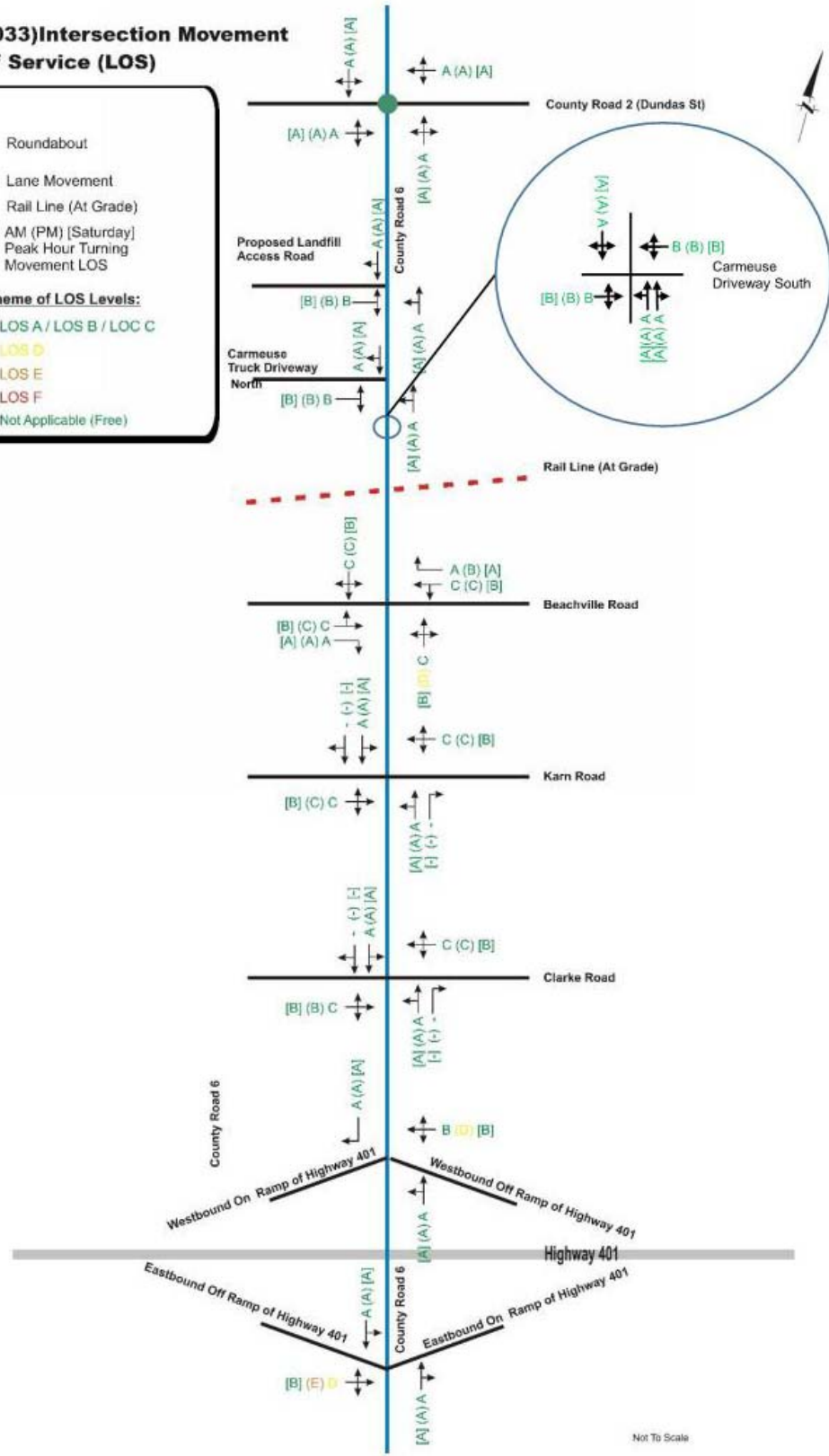


Exhibit 12-25: 2033 Total Intersection Movement Level of Service

Under future background conditions (without the proposed landfill), all movements at each intersection within the study area will continue to operate with residual capacity (**volume to capacity ratios of 0.71 or better**) and **level of service D** or better during the AM, PM, and Saturday analysis periods except the eastbound movement at the intersection of County Road 6 and Highway 401 Eastbound On/Off ramp, which is anticipated to operate at level of service E. Future vehicle queues can be accommodated within the existing on site storage lanes. There are no operational concerns under the future background conditions.

Under future total traffic conditions with the proposed landfill, all movements at each intersection within the study area will continue to operate with residual capacity (**volume to capacity ratios of 0.78 or better**) and **level of service D** or better during the AM, PM, and Saturday analysis periods except the eastbound movement at the intersection of County Road 6 and Highway 401 Eastbound On/Off ramp, which is anticipated to operate at level of service E (with or without the proposed landfill). Future vehicle queues be accommodated within the existing on site storage lanes.

12.4 Potential for Traffic Collisions

12.4.1 Potential Effects

From a transportation network perspective, the proposed landfill will have a relatively small impact on traffic safety in the study area due to the small increase in truck traffic. The percentage truck traffic increase relative to total traffic on County Road 6 is only 5% during peak periods. In addition, there will be minor impact on traffic levels of service within the study area.

Increased trucks will have some potential adverse impacts on the road safety due to their slower speeds and the higher probability that collisions could be more severe, if involved in a rear-end or turning collision. However, the predominant collision type along CR 6 and on Highway 401 in the vicinity of the interchange is the single motor vehicle (SMV) collision and the proposed landfill trucks will not increase the frequency of SMV collisions. It is also possible that more heavy vehicle-related collisions will occur due to the increase of heavy vehicles within the study area.

The future traffic safety performance cannot be quantified without the application of safety performance functions, which are not available for County Road 6. However, it is estimated that a 5% increase in traffic could likely correlate to a 5% increase in collisions.

Increased heavy vehicles by the proposed landfill could also have potential adverse impacts on the pavement condition on CR 6, including the contribution to cracking and rutting on the road surface, depending on the existing pavement condition and season. Since landfill trucks will be travelling throughout the year, CR 6 may be more susceptible to wear and tear on the pavement during winter and early spring due to climate change, and moisture freeze-thaw cycles. However, since the projected increase in traffic will be approximately 5%, the potential for these impacts is anticipated to be limited.

12.4.2 Additional Mitigation Recommendations for Safety

Additional mitigation is required to ensure that all service roads operate safely and efficiently with the proposed landfill. The existing road geometry and signage were reviewed and the following are recommended:

- Adequate signage should be placed on County Road 6 to advise of the new private access road to the landfill – further discussion is provided below.
- The proposed access road should have sufficient queue space for inbound trucks should they need to wait for opening at 7AM. Landfill trucks should not queue on CR 6 in either the southbound or northbound direction.
- To accommodate landfill trucks to turn left from CR 6 and for northbound through traffic to avoid decelerating or rear-end conflicts, the second northbound lane should be extended north of the landfill entrance – further discussion is provided below.
- Periodic road inspection should be conducted in order to monitor the pavement conditions along the primary haul route before the opening day of the landfill (to establish baseline conditions) and during operation of the landfill. Any issues and concerns identified should be discussed with the County of Oxford Public Works Department, which is responsible for County Road 6.

Signage

A truck entrance sign, illustrated in **Exhibit 12-26** is recommended at the landfill entrance. This sign is intended to alert people to exercise caution and slow down to accommodate fully loaded trucks requiring more acceleration time.



Exhibit 12-26: Truck Entrance Sign

Potential northbound left turn lane at the site entrance

A left turn warrant was also conducted at the intersection of County Road 6 and the proposed landfill site entrance, which is approximately 660m north of the existing north-most quarry driveway. A dedicated northbound left turn lane is not warranted at the landfill entrance under future traffic conditions. The warrant is based on the design speed, turning, advancing and opposing volumes. Detailed left turn warrant results are shown in **Appendix D**.

Despite the left turn lane warrant results, we would recommend to extend the second northbound lane on CR6 to accommodate northbound through traffic while allowing decelerating trucks to use the left lane to turn left into the landfill entrance. Today there are two northbound lanes, of which the curb lane tapers and terminates approximately 125m south of the proposed landfill entrance. To avoid merging conflicts at the same time as left

turning landfill trucks, extending the second lane will allow northbound vehicles to merge after the landfill entrance. The proposed extension would be for a minimum of 150m; however, detail design to be carried out in future stages will confirm the exact requirements.



Exhibit 12-27: Proposed Northbound Lane Extension on CR 6

12.4.3 Net Effects

From a transportation network perspective, the proposed landfill will have relatively minor impacts on the potential for traffic collisions in the study area. The future potential for collisions is generally linked with increased traffic; however, the total amount of traffic due to the landfill expansion only represents a 5% increase and incremental impact on the existing transportation network. Implementation of the mitigation measures recommended above will further reduce the potential for collisions with landfill trucks where they slow and turn left from County Road 6. In the 4 years of collision history on County Road 6, there were no fatal collisions, and we do not anticipate this trend will change with the 5% increase in traffic.

12.5 Disruption to Local Traffic Networks

The proposed landfill will have some impacts to the study area road network. However, the incremental impact compared to future background traffic is relatively minor.

12.5.1 Potential Effects

Comparisons of the intersection operations due to the proposed landfill in 2028 and 2033 have been documented in Section 12.2.4 and 12.3.4. The location with the highest change in volume to capacity ratio is the northbound movement at County Road 6 and Beachville Road with a change in v/c ratio of +0.07. The northbound approach will operate at LOS D under 2033 background and total conditions so there is no net impact from level of service perspective. The truck percentages generated by the landfill are approximately 10-15% of total traffic along CR 6.

The amount of trucks generated on Highway 401 will also not be significant compared to the total amount of existing and background trucks.

The public raised concerns regarding Highway 401 operations between the County Road 6 interchange and the rest stop to the east of the interchange.

Walker committed to consult with the MTO about this concern, and a meeting occurred on May 19, 2017. The outcome of consultation with the MTO and the further analysis of additional truck traffic and safety performance is that there is sufficient capacity at the County Road 6 interchange and the weaving section between County Road 6 interchange and the Woodstock On route exit ramp for the additional truck traffic associated with the Southwestern Landfill.

No mitigation measures will be required.

Additional Mitigation Recommendations

Notwithstanding the acceptable operating conditions in 2033 at the intersection of CR 6 and Beachville Road, the following mitigation measures were reviewed and considered in this study:

- Potential signalization at County Road 6 and Beachville Road;
- Potential signalization at Highway 401 EB On/Off Ramp and County Road 6
- Potential SB left turn storage lane on CR 6 at the Highway 401 EB On/Off Ramp

Potential signalization at County Road 6 and Beachville Road

A signal warrant was conducted for the intersection of County Road 6 and Beachville Road. The signal is not warranted at this intersection under future 2033 condition. The summarized results are shown in **Exhibit 12-28**. Detailed signal warrant results are shown in **Appendix D**.

Summary Results				
	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	75 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	36 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	75 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	36 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		19 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Collision Experience		60 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Exhibit 12-28: Summary signal warrant results for County Road 6 and Beachville Road

Although the signal warrants are not met, potential signalization can be considered at this intersection to improve operations by reducing the amount of vehicle stops since this is an all-way stop controlled intersection. Some pros and cons are discussed below:

Pros:

- The signals would be optimized to minimize traffic delays and allow for free flow conditions during green phases; and,
- The signalized intersection would reduce the potential for driver confusion experienced at all-way stop controlled intersections with multi-lane approaches.

Cons:

- The signalization might lead to faster speeds for trucks (since they may not need to stop) and an increase of collisions due to free-flow speed in one direction;
- The signals may have to be interconnected with the railway crossing and include railway pre-emption protocols,
- The benefit-cost ratio for the signalization of this intersection could be low.

Based on the above considerations and that the signals are not warranted now or by 2033, we do not recommend installation of the signals.

Potential signalization at Highway 401 EB on/off ramp and County Road 6

A signal warrant was conducted for the intersection of Highway 401 EB on/off ramp and County Road 6. The signal is not warranted at this intersection under future 2033 conditions. The summarized results are shown in **Exhibit 12-29**. Detailed signal warrant results are shown in **Appendix D**.

Summary Results					
Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A	Total Volume	73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B	Crossing Volume	37 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A	Main Road	61 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B	Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A	Justificaton 1	37 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B	Justification 2	61 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume			14 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Collision Experience			20 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Pedestrians	A	Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B	Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Exhibit 12-29: Summary signal warrant results for County Road 6 and Highway 401 EB Ramp

Similar pros and cons are discussed in the previous section. Based on the above considerations and that the signals are not warranted now or by 2033, we do not recommend installation of the signals.

Potential Southbound Left Turn Lane on County Road 6 and Highway 401 EB on/off ramp

A left-turn warrant was conducted for the intersection of Highway 401 EB on/off ramp and County Road 6. The left turn warrant is not triggered at this intersection under future 2033 condition. PM peak hour volumes in 2033 are used and the design speed for this intersection is 80km/h according to 2015 Road Needs Study – County of Oxford. The left-turn warrant result is shown in **Exhibit 12-30**.

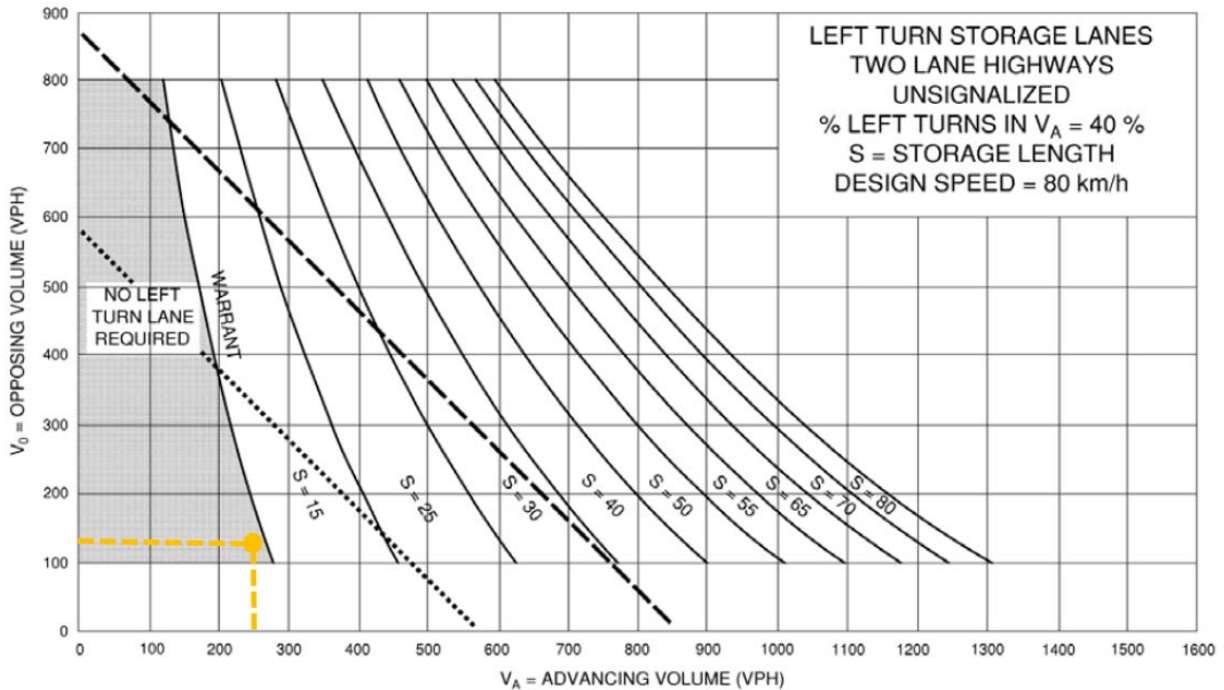


Exhibit 12-30: Left turn warrant result for County Road 6 and Highway 401 EB Ramp

12.5.2 Net Effects

The social and cultural criterion that was investigated by this traffic impact assessment study was the disruption to local traffic networks. The proposed landfill results in a relatively minor impact to the local traffic networks based on volume to capacity ratios and levels of service.

New signalizations are not recommended for the following intersections based on the resulting v/c ratios, levels of service, and signal warrant analyses

- County Road 6 and Beachville Road;
- Highway 401 EB On/Off Ramp and County Road 6

The dedicated southbound left turn lane at Highway 401 EB On/Off Ramp and County Road 6 is also not recommended based on the resulting v/c ratios, level of service, and left turn warrant analysis.

13 Monitoring, Contingency & Impact Management Recommendations

13.1 Monitoring & Contingency Plans

Monitoring is not required due to the traffic impacts. However, as mentioned previously, there will be monitoring programs for leachate, groundwater, surface water, air emissions, gas, noise, and particulates (dust) according to Walker. Monitoring of pavement conditions at the primary entrance of the Landfill is also recommended before and during landfill operations.

Controls on the internal haul road and at the primary entrance will include speed enforcement, regular haul road cleaning (on- and off-site), litter fencing and pick-up, and bird/pest management, with a public complaints reporting and response system.

The landfill is anticipated to receive waste for approximately 20 years commencing in about 2023. After closure, maintenance and operation of the relevant environmental controls and monitoring will carry on during the post-closure period, until there is no further risk of environmental contamination. The end-use is assumed to be passive green space and agriculture, but the design is flexible to accommodate other potential end-uses at the time of closure.

13.2 Impact Management Recommendations

The proposed Southwestern Landfill will generate an approximate 5% incremental impact on future background traffic volumes on the study area road network, which will not result in significant impacts in terms of overall traffic volumes, volumes to capacity ratios, level of service and traffic safety.

To mitigate the increased trucks, the improvements are limited to extending the second northbound lane on CR 6 at the proposed landfill entrance, installation of truck signage at the primary entrance, and future monitoring of pavement conditions.

Signalization at the intersection of County Road 6 and Beachville Road could be re-assessed in consultation with the County if operational issues are observed at this intersection during the operating period of the landfill, if necessary, based on future traffic operations.

14 References

McDermid, J., S. Fera and A. Hogg. 2015. *Climate change projections for Ontario: An updated synthesis for policymakers and planners*. Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Peterborough, Ontario. Climate Change Research Report CCRR-44.

Ontario Ministry of the Environment, January 2012. *Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites*.

Walker Environmental Group Inc., May 10, 2016. *Approved Amended Terms of Reference*.

Walker Environmental Group Inc., in progress. *Environmental Assessment Report, Southwestern Landfill Proposal*.

AECOM Canada Ltd., May 19, 2009, *County of Oxford Transportation Master Plan Study*


MMM Group Limited, December 2014, *Oxford County Trails Master Plan Final Report*

Paradigm Transportation Solutions Limited, 2019 *Oxford County Transportation Master Plan*

R.J. Burnside & Associates Limited, 2015 *Road Needs Study – County of Oxford*

Appendix A Glossary of Terms

Terms	Definition
AIS	Automatic Identification System
AADT	Annual Average Daily Traffic
SADT	Summer Average Daily Traffic
DHV	Design Hourly Volume
MTO	Ministry of Transportation Ontario
ATR	Automatic Traffic Recorder
TMC	Turning Movement Counts
SOSTS	Southwestern Ontario Student Transportation Services
OSR	Ontario Southland Railway
PCU	Passenger Car Unit
EDR	Emergency Detour Routes
TAC	Transportation Association of Canada
PDO	Property Damage Only
SMV	Single Motor Vehicle
LHRS	Linear Highway Referencing System



Appendix B

Environmental Assessment Criteria and Studies (from the Approved Amended Terms of Reference)

Table B-1

Criteria	Definition/ Rationale	Studies Addressing the Criteria											Study Areas			Duration			
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
Public Health & Safety																			
1	Explosive hazard due to combustible gas accumulation in confined spaces.						<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Effects due to exposure to air emissions.		<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Effects due to fine particulate exposure.		<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
4	Effects due to contact with contaminated groundwater or surface water.						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table B-1			Studies Addressing the Criteria											Study Areas			Duration					
			Criteria	Definition/ Rationale	Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
5	Flood hazard.	The construction of a waste disposal facility can disrupt natural surface water drainage patterns, causing a potential for increased flooding.							<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Disease transmission via insects or vermin.	Insects and vermin drawn to a waste disposal facility may have the potential to transmit diseases.					<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Potential for traffic collisions.	The risk of traffic collisions may increase along the haul routes to the waste disposal facility. This includes the risk to pedestrian, bicycle and farm machinery.												<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
8	Aviation impacts due to bird interference.	Birds may be attracted to waste disposal facilities. This can pose a risk of bird strikes on aircraft in the vicinity of the site, especially during take-off and landing altitudes.					<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
Social and Cultural																						
9	Displacement of residents from houses.	Any residents living on a future waste disposal site will have to relocate, which can cause inconvenience and stress to the residents.											<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	Disruption to use and enjoyment of residential properties.	Potential nuisance effects associated with the waste disposal facility operation, or traffic moving to and from the waste disposal facility along the haul route, may disturb the daily activities and uses of residential properties. Disturbances could result from noise, dust, litter, odour, visibility, birds and traffic congestion.											<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table B-1

Criteria	Definition/ Rationale	Studies Addressing the Criteria											Study Areas			Duration			
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
16	Effects on land resources, traditional activities or other interests of Aboriginal Communities.										<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	Displacement/destruction of archaeological resources.			<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
18	Level of public service provided by the waste disposal facility.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	Effects on other public services.						<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	Changes to community character/cohesion.										<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	Compatibility with municipal land use designations and official plans.								<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Table B-1

Criteria	Definition/ Rationale	Studies Addressing the Criteria											Study Areas			Duration			
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
Economics																			
22	Displacement/disruption of businesses or farms.						<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
23	Property value impacts.						<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	Direct employment in waste disposal facility construction and operation.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
25	Indirect employment in related industries and services.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
26	New business opportunities related directly to waste disposal facility construction and operation.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Study that will be primarily responsible for addressing criterion.

Note: Many of the studies will provide key input to criteria that will be address through other impact assessment studies.

Table B-1			Studies Addressing the Criteria											Study Areas			Duration			
			Criteria	Definition/ Rationale	Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area
27	New business opportunities in related industries and services.	New opportunities may be created for local businesses, or as secondary suppliers to industries working for the waste disposal facility (e.g., restaurants, gas stations, machine shops, repair shops, welding shops, equipment rentals, etc.).						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
28	Public costs for indirect liabilities.	Some public services may have to be upgraded to accommodate the establishment and operation of a waste disposal facility (e.g., snow removal, sewer and water connections, etc.).						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29	Effects on the municipal tax base.	A waste disposal facility has the potential to affect municipal tax revenues from the site it occupies.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30	Effect on the cost of service to customers.	The costs of constructing a waste disposal facility will affect the price of tipping fees to the site. This affects the cost of service to customers in Oxford County and the province.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
31	Effects on the provincial/federal tax base.	A waste disposal facility has the potential to affect provincial/federal tax revenues.						<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Natural Environment & Resources																				
32	Loss/displacement of surface water resources.	Construction of a waste disposal facility may cause the removal of all or part of a natural stream or pond.							<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
33	Impact on the availability of groundwater supply to wells.	A waste disposal facility can impact the availability of groundwater supply if groundwater is pumped from aquifers or if recharge to aquifers is reduced.							<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Table B-1

Criteria	Definition/ Rationale	Studies Addressing the Criteria												Study Areas			Duration		
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
34	Effects on stream baseflow quantity/quality.						<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
35	Loss/disturbance of terrestrial ecosystems.					<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
36	Loss/disturbance of aquatic ecosystems.					<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
37	Displacement of agricultural land.	<input checked="" type="checkbox"/>												<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
38	Disruption of farm operations.	<input checked="" type="checkbox"/>												<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
39	Sterilization of industrial mineral resources.											<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
40	Displacement of forestry resources.											<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Study that will be primarily responsible for addressing criterion.

Note: Many of the studies will provide key input to criteria that will be address through other impact assessment studies.

Table B-1

Criteria	Definition/ Rationale	Studies Addressing the Criteria											Study Areas			Duration			
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape	On-Site & Site Vicinity	Along the Haul Routes	Wider Area	Operational Period	Post-Closure Period
41	Loss/disruption of recreational resources.																	✓	✓



Table B-2 – EA Technical Studies Interconnectivity Matrix

Because effectively evaluating the EA criteria provided in Table B-1 may require input from experts in many disciplines, Walker adopted a methodology that facilitates a cross-functional approach among the experts. Each EA criterion has been assigned a 'lead' expert for reporting purposes (see Table B-1). The lead expert is responsible for coordinating efforts with any other expert they determine necessary to effectively report on that criterion as well as providing information to other experts who need input from them to report on any other criteria. Table B-2 provides possible relationships required between experts to effectively report on their respective EA criteria. The actual relationships will be developed during the EA process in consultation with interested parties.

		Reference Studies												
		Agriculture	Air Quality	Archaeology	Cultural Heritage	Ecology	Economic / Financial	Groundwater / Surface Water	Human Health	Land Use	Noise / Vibration	Social	Traffic	Visual / Landscape
Technical Studies	Agriculture		✓							✓	✓		✓	
	Air Quality												✓	
	Archaeology													
	Cultural Heritage									✓		✓		✓
	Ecology		✓								✓		✓	
	Economic / Financial	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
	Groundwater / Surface Water	✓											✓	
	Human Health		✓									✓		
	Land Use													
	Noise / Vibration													
	Social	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
	Traffic	✓									✓			
	Visual Landscape											✓		

Appendix C

Signal Warrants and Left Turn Warrants

Results Sheet

Input Sheet

Analysis Sheet

Proposed Collision

Intersection: County Road 6 / Beachville Rd

Count Date: 2018

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	75	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	36	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	75	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	36	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		19	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	60	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	8:00	9:00	10:00	11:00	15:00	16:00	17:00	18:00		
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
1A	480	720	600	900	451	451	451	451	451	451	451	451	601	75
	COMPLIANCE %				75	75	75	75	75	75	75	75		
1B	120	170	120	170	234	234	234	234	234	234	234	234	800	100
	COMPLIANCE %				100	100	100	100	100	100	100	100		
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
													Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	8:00	9:00	10:00	11:00	15:00	16:00	17:00	18:00		
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
2A	480	720	600	900	217	217	217	217	217	217	217	217	289	36
	COMPLIANCE %				36	36	36	36	36	36	36	36		
2B	50	75	50	75	124	124	124	124	124	124	124	124	800	100
	COMPLIANCE %				100	100	100	100	100	100	100	100		
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
													Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	NOT JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	8:00	217	127	667	19 %	19 %
	9:00	217	127	667	19 %	
	10:00	217	127	667	19 %	
	11:00	217	127	667	19 %	

Justification 5: Collision Experience

Justification	Preceding Months	% Fulfillment	Overall % Compliance
Justification 5	1-12	40 %	60 %
	13-24	60 %	
	25-36	80 %	

Justification 6: Pedestrian Volume

Pedestrian Volume Analysis

8 Hour Vehicular Volume V_8		Net 8 Hour Pedestrian Volume				
		< 200	200 - 275	276 - 475	476 - 1000	>1000
Justification 6A	< 1440					
	1440 - 2600					
	2601 - 7000	Not Justified				
	> 7000					

Pedestrian Delay Analysis

Net Total 8 Hour Volume of Total Pedestrians		Net Total 8 Hour Volume of Delayed Pedestrians		
		< 75	75 - 130	> 130
Justification 6B	< 200	Not Justified		
	200 - 300			
	> 300			

Appendix D

Detail Synchro Report

Existing Condition



Lanes, Volumes, Timings

1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	236	195	0
Future Volume (vph)	0	0	0	236	195	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1830	0	0	1413	1444	0
Flt Permitted						
Satd. Flow (perm)	1830	0	0	1413	1444	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			810.3	378.6	
Travel Time (s)	52.5			36.5	17.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	5%	5%	36%	33%	5%
Adj. Flow (vph)	0	0	0	265	219	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	265	219	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	9	232	190	5
Future Volume (vph)	4	0	9	232	190	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.996
Flt Protected	0.950				0.998	
Satd. Flow (prot)	1217	0	0	1348	1438	0
Flt Permitted	0.950				0.998	
Satd. Flow (perm)	1217	0	0	1348	1438	0
Link Speed (k/h)	60				80	80
Link Distance (m)	169.1				756.3	810.3
Travel Time (s)	10.1				34.0	36.5
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	50%	0%	22%	43%	34%	0%
Adj. Flow (vph)	4	0	10	261	213	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	271	219	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7				0.0	0.0
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	1.6				1.6	1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop				Free	Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	35	115	13	33	123	23	2	175	15	16	204	27
Future Volume (vph)	35	115	13	33	123	23	2	175	15	16	204	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.989			0.985	
Flt Protected		0.989			0.990						0.997	
Satd. Flow (prot)	0	1778	966	0	1760	1633	0	1415	0	0	1380	0
Flt Permitted		0.989			0.990						0.997	
Satd. Flow (perm)	0	1778	966	0	1760	1633	0	1415	0	0	1380	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	3%	8%	69%	12%	7%	0%	50%	36%	13%	6%	43%	7%
Adj. Flow (vph)	39	129	15	37	138	26	2	197	17	18	229	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	15	0	175	26	0	216	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.3%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	63	52	6	36	8	9	194	7	14	224	1
Future Volume (vph)	11	63	52	6	36	8	9	194	7	14	224	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.978				0.850		0.999	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1657	0	0	1474	0	0	1431	1432	0	2968	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1657	0	0	1474	0	0	1431	1432	0	2968	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	35%	14%	0%	24%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	12	71	58	7	40	9	10	218	8	16	252	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	141	0	0	56	0	0	228	8	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	7	63	74	5	34	5	31	220	7	19	224	11
Future Volume (vph)	7	63	74	5	34	5	31	220	7	19	224	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.931			0.984				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1676	0	0	1685	0	0	1508	1142	0	1520	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1676	0	0	1685	0	0	1508	1142	0	1520	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	29%	43%	0%	28%	0%
Adj. Flow (vph)	8	71	83	6	38	6	35	247	8	21	252	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	162	0	0	50	0	0	282	8	0	273	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	26	0	164	48	120	0	0	283	32	
Future Volume (vph)	0	0	0	26	0	164	48	120	0	0	283	32	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.883					0.986			
Flt Protected					0.993					0.986			
Satd. Flow (prot)	0	0	0	0	1219	0	0	1607	0	0	1618	0	
Flt Permitted					0.993					0.986			
Satd. Flow (perm)	0	0	0	0	1219	0	0	1607	0	0	1618	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
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	
Heavy Vehicles (%)	0%	0%	0%	65%	0%	34%	15%	19%	0%	0%	18%	9%	
Adj. Flow (vph)	0	0	0	29	0	184	54	135	0	0	318	36	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	213	0	0	189	0	0	354	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



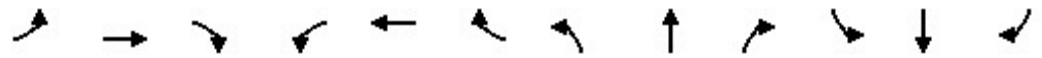
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	75	1	8	0	0	0	0	93	37	215	94	0
Future Volume (vph)	75	1	8	0	0	0	0	93	37	215	94	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987						0.961				
Flt Protected		0.957									0.966	
Satd. Flow (prot)	0	1556	0	0	0	0	0	1626	0	0	1530	0
Flt Permitted		0.957									0.966	
Satd. Flow (perm)	0	1556	0	0	0	0	0	1626	0	0	1530	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		248.2			250.3			441.6			276.1	
Travel Time (s)		17.9			18.0			19.9			12.4	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
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
Heavy Vehicles (%)	16%	100%	13%	0%	0%	0%	0%	17%	5%	24%	15%	0%
Adj. Flow (vph)	84	1	9	0	0	0	0	104	42	242	106	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	0	0	0	146	0	0	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	233	0	0	247	0
Future Volume (vph)	0	0	0	0	1	0	0	233	0	0	247	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1830	0	0	961	0	0	1513	0	0	1413	0
Flt Permitted												
Satd. Flow (perm)	0	1830	0	0	961	0	0	1513	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			756.3	
Travel Time (s)		25.1			28.6			2.9			34.0	
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
Heavy Vehicles (%)	5%	5%	5%	5%	100%	5%	5%	27%	5%	5%	36%	5%
Adj. Flow (vph)	0	0	0	0	1	0	0	262	0	0	278	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	262	0	0	278	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		70.0			70.0			1730.0			1730.0	
Total Split (%)		3.9%			3.9%			96.1%			96.1%	
Maximum Green (s)		60.0			60.0			1724.0			1724.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			1728.3			1728.3	
Actuated g/C Ratio					0.03			0.98			0.98	
v/c Ratio					0.03			0.18			0.20	
Control Delay					839.0			1.1			1.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					839.0			1.1			1.2	
LOS					F			A			A	
Approach Delay					839.0			1.1			1.2	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			1724.0			1724.0	
90th %ile Term Code		Max			Max			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			1724.0			1724.0	
70th %ile Term Code		Max			Max			MaxR			MaxR	
50th %ile Green (s)		0.0			0.0			1724.0			1724.0	
50th %ile Term Code		Skip			Skip			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			1724.0			1724.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			1724.0			1724.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					1			5			5	
Fuel Used(l)					1			2			15	
CO Emissions (g/hr)					13			31			283	
NOx Emissions (g/hr)					3			6			55	
VOC Emissions (g/hr)					3			7			65	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					3.5			0.0			0.0	
Queue Length 95th (m)					11.0			47.9			52.1	
Internal Link Dist (m)		366.1			421.4			40.2			732.3	
Turn Bay Length (m)												
Base Capacity (vph)					33			1487			1389	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.03			0.18			0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	1800
Actuated Cycle Length:	1758
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.20
Intersection Signal Delay:	2.7
Intersection LOS:	A
Intersection Capacity Utilization	76.3%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	1800
70th %ile Actuated Cycle:	1800
50th %ile Actuated Cycle:	1730
30th %ile Actuated Cycle:	1730
10th %ile Actuated Cycle:	1730

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

1730 s	70 s

Lanes, Volumes, Timings

1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	333	246	0
Future Volume (vph)	0	0	0	333	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1830	0	0	1402	1392	0
Flt Permitted						
Satd. Flow (perm)	1830	0	0	1402	1392	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			810.3	378.6	
Travel Time (s)	52.5			36.5	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	37%	38%	5%
Adj. Flow (vph)	0	0	0	347	256	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	347	256	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.9%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	2	327	244	2
Future Volume (vph)	6	16	2	327	244	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.900			0.999		
Flt Protected	0.987					
Satd. Flow (prot)	1388	0	0	1469	1394	0
Flt Permitted	0.987					
Satd. Flow (perm)	1388	0	0	1469	1394	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			756.3	810.3	
Travel Time (s)	10.1			34.0	36.5	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	31%	0%	31%	38%	0%
Adj. Flow (vph)	6	17	2	341	254	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	343	256	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020




















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕↔			↕↔	
Traffic Volume (vph)	40	188	8	19	186	45	9	244	29	32	190	38
Future Volume (vph)	40	188	8	19	186	45	9	244	29	32	190	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.986			0.980	
Flt Protected		0.991			0.995			0.998			0.994	
Satd. Flow (prot)	0	1863	1633	0	1903	1570	0	1410	0	0	1544	0
Flt Permitted		0.991			0.995			0.998			0.994	
Satd. Flow (perm)	0	1863	1633	0	1903	1570	0	1410	0	0	1544	0
Link Speed (k/h)		80			80			80			60	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			3.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	2%	0%	5%	0%	4%	33%	37%	10%	0%	29%	0%
Adj. Flow (vph)	42	196	8	20	194	47	9	254	30	33	198	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	238	8	0	214	47	0	293	0	0	271	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.3%
	ICU Level of Service B
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	78	35	11	54	8	28	261	9	11	240	10
Future Volume (vph)	13	78	35	11	54	8	28	261	9	11	240	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.963			0.986				0.850		0.994	
Flt Protected		0.995			0.993			0.995			0.998	
Satd. Flow (prot)	0	1728	0	0	1608	0	0	1601	1633	0	3096	0
Flt Permitted		0.995			0.993			0.995			0.998	
Satd. Flow (perm)	0	1728	0	0	1608	0	0	1601	1633	0	3096	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	3%	14%	18%	0%	25%	4%	21%	0%	9%	18%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	14	81	36	11	56	8	29	272	9	11	250	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	0	0	75	0	0	301	9	0	271	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	3	8	35	37	12	5	24	290	6	8	283	7
Future Volume (vph)	3	8	35	37	12	5	24	290	6	8	283	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.897			0.988				0.850			0.850
Flt Protected		0.997			0.967			0.996			0.999	
Satd. Flow (prot)	0	1718	0	0	1835	0	0	1517	1633	0	1593	1633
Flt Permitted		0.997			0.967			0.996			0.999	
Satd. Flow (perm)	0	1718	0	0	1835	0	0	1517	1633	0	1593	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	28%	0%	0%	21%	0%
Adj. Flow (vph)	3	8	36	39	13	5	25	302	6	8	295	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	57	0	0	327	6	0	303	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↔			↕			↕		
Traffic Volume (vph)	0	0	0	104	0	164	37	156	0	0	326	33	
Future Volume (vph)	0	0	0	104	0	164	37	156	0	0	326	33	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.917					0.988			
Flt Protected					0.981					0.990			
Satd. Flow (prot)	0	0	0	0	1352	0	0	1628	0	0	1604	0	
Flt Permitted					0.981					0.990			
Satd. Flow (perm)	0	0	0	0	1352	0	0	1628	0	0	1604	0	
Link Speed (k/h)				50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	34%	16%	17%	0%	0%	19%	12%	
Adj. Flow (vph)	0	0	0	108	0	171	39	163	0	0	340	34	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	279	0	0	202	0	0	374	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0				0.0				0.0		0.0		
Link Offset(m)	0.0				0.0				0.0		0.0		
Crosswalk Width(m)	1.6				1.6				1.6		1.6		
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop						Stop			Free			

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



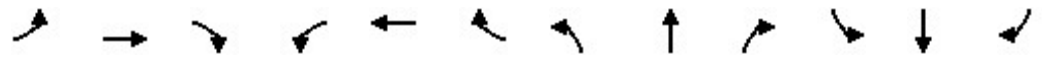
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	76	3	18	0	0	0	0	117	31	219	211	0
Future Volume (vph)	76	3	18	0	0	0	0	117	31	219	211	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.975						0.972					
Flt Protected	0.962						0.975					
Satd. Flow (prot)	0	1492	0	0	0	0	0	1691	0	0	1621	0
Flt Permitted	0.962						0.975					
Satd. Flow (perm)	0	1492	0	0	0	0	0	1691	0	0	1621	0
Link Speed (k/h)	50						80					
Link Distance (m)	248.2						250.3					
Travel Time (s)	17.9						18.0					
Confl. Peds. (#/hr)							1 1					
Confl. Bikes (#/hr)							1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	100%	28%	0%	0%	0%	0%	9%	16%	20%	11%	0%
Adj. Flow (vph)	79	3	19	0	0	0	0	122	32	228	220	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	0	0	0	154	0	0	448	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0						0.0					
Link Offset(m)	0.0						0.0					
Crosswalk Width(m)	1.6						1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop						Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	303	0	0	252	0
Future Volume (vph)	0	0	0	0	1	0	0	303	0	0	252	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1830	0	0	961	0	0	1501	0	0	1588	0
Flt Permitted												
Satd. Flow (perm)	0	1830	0	0	961	0	0	1501	0	0	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			756.3	
Travel Time (s)		25.1			28.6			2.9			34.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	5%	100%	5%	5%	28%	5%	5%	21%	5%
Adj. Flow (vph)	0	0	0	0	1	0	0	316	0	0	263	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	316	0	0	263	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		70.0			70.0			1730.0			1730.0	
Total Split (%)		3.9%			3.9%			96.1%			96.1%	
Maximum Green (s)		60.0			60.0			1724.0			1724.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			1728.3			1728.3	
Actuated g/C Ratio					0.03			0.98			0.98	
v/c Ratio					0.03			0.21			0.17	
Control Delay					839.0			1.2			1.1	
Queue Delay					0.0			0.0			0.0	
Total Delay					839.0			1.2			1.1	
LOS					F			A			A	
Approach Delay					839.0			1.2			1.1	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			1724.0			1724.0	
90th %ile Term Code		Max			Max			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			1724.0			1724.0	
70th %ile Term Code		Max			Max			MaxR			MaxR	
50th %ile Green (s)		0.0			0.0			1724.0			1724.0	
50th %ile Term Code		Skip			Skip			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			1724.0			1724.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			1724.0			1724.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					1			7			6	
Fuel Used(l)					1			2			16	
CO Emissions (g/hr)					13			41			289	
NOx Emissions (g/hr)					3			8			56	
VOC Emissions (g/hr)					3			10			67	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					3.5			0.0			0.0	
Queue Length 95th (m)					11.0			60.4			48.3	
Internal Link Dist (m)		366.1			421.4			40.2			732.3	
Turn Bay Length (m)												
Base Capacity (vph)					33			1475			1561	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.03			0.21			0.17	

Intersection Summary

Area Type:	Other
Cycle Length:	1800
Actuated Cycle Length:	1758
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.21
Intersection Signal Delay:	2.6
Intersection LOS:	A
Intersection Capacity Utilization	79.3%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	1800
70th %ile Actuated Cycle:	1800
50th %ile Actuated Cycle:	1730
30th %ile Actuated Cycle:	1730
10th %ile Actuated Cycle:	1730

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

	1730 s		70 s
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Lanes, Volumes, Timings

1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	156	158	0
Future Volume (vph)	0	0	0	156	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1830	0	0	1656	1455	0
Flt Permitted						
Satd. Flow (perm)	1830	0	0	1656	1455	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			810.3	378.6	
Travel Time (s)	52.5			36.5	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	16%	32%	5%
Adj. Flow (vph)	0	0	0	163	165	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	163	165	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	11.6%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	11	156	152	6
Future Volume (vph)	5	0	11	156	152	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.995
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1217	0	0	1352	1440	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1217	0	0	1352	1440	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			756.3	810.3	
Travel Time (s)	10.1			34.0	36.5	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	50%	0%	22%	43%	34%	0%
Adj. Flow (vph)	5	0	11	163	158	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	174	164	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕↗			↕↗	
Traffic Volume (vph)	16	118	31	16	126	1	14	135	8	6	123	24
Future Volume (vph)	16	118	31	16	126	1	14	135	8	6	123	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.993			0.979	
Flt Protected		0.994			0.994			0.995			0.998	
Satd. Flow (prot)	0	1879	1633	0	1865	1633	0	1669	0	0	1743	0
Flt Permitted		0.994			0.994			0.995			0.998	
Satd. Flow (perm)	0	1879	1633	0	1865	1633	0	1669	0	0	1743	0
Link Speed (k/h)		80			80			80			60	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			3.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	1%	0%	13%	1%	0%	0%	16%	0%	0%	7%	13%
Adj. Flow (vph)	17	123	32	17	131	1	15	141	8	6	128	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	32	0	148	1	0	164	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	8	44	36	4	25	6	6	136	5	10	143	1
Future Volume (vph)	8	44	36	4	25	6	6	136	5	10	143	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.977				0.850		0.999	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1656	0	0	1473	0	0	1431	1432	0	2971	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1656	0	0	1473	0	0	1431	1432	0	2971	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	35%	14%	0%	24%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	8	46	38	4	26	6	6	142	5	10	149	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	36	0	0	148	5	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	5	44	51	3	24	3	22	138	5	13	145	8
Future Volume (vph)	5	44	51	3	24	3	22	138	5	13	145	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.931			0.987				0.850			0.850
Flt Protected		0.998			0.995			0.993			0.996	
Satd. Flow (prot)	0	1677	0	0	1690	0	0	1509	1142	0	1523	1633
Flt Permitted		0.998			0.995			0.993			0.996	
Satd. Flow (perm)	0	1677	0	0	1690	0	0	1509	1142	0	1523	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	29%	43%	0%	28%	0%
Adj. Flow (vph)	5	46	53	3	25	3	23	144	5	14	151	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	31	0	0	167	5	0	165	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

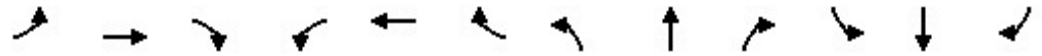
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↔			↔			↔		
Traffic Volume (vph)	0	0	0	24	0	72	9	92	0	0	130	50	
Future Volume (vph)	0	0	0	24	0	72	9	92	0	0	130	50	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.899					0.962			
Flt Protected					0.988					0.996			
Satd. Flow (prot)	0	0	0	0	1373	0	0	1879	0	0	1747	0	
Flt Permitted					0.988					0.996			
Satd. Flow (perm)	0	0	0	0	1373	0	0	1879	0	0	1747	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	13%	0%	28%	11%	1%	0%	0%	8%	0%	
Adj. Flow (vph)	0	0	0	25	0	75	9	96	0	0	135	52	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	100	0	0	105	0	0	187	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	48	2	6	0	0	0	0	53	5	71	83	0
Future Volume (vph)	48	2	6	0	0	0	0	53	5	71	83	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986						0.989				
Flt Protected		0.959									0.977	
Satd. Flow (prot)	0	1817	0	0	0	0	0	1755	0	0	1818	0
Flt Permitted		0.959									0.977	
Satd. Flow (perm)	0	1817	0	0	0	0	0	1755	0	0	1818	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		248.2			250.3			441.6			276.1	
Travel Time (s)		17.9			18.0			19.9			12.4	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	0%
Adj. Flow (vph)	50	2	6	0	0	0	0	55	5	74	86	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	0	0	0	60	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	152	0	0	153	0
Future Volume (vph)	0	0	0	0	1	0	0	152	0	0	153	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1830	0	0	961	0	0	1685	0	0	1795	0
Flt Permitted												
Satd. Flow (perm)	0	1830	0	0	961	0	0	1685	0	0	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			756.3	
Travel Time (s)		25.1			28.6			2.9			34.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	5%	100%	5%	5%	14%	5%	5%	7%	5%
Adj. Flow (vph)	0	0	0	0	1	0	0	158	0	0	159	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	158	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		70.0			70.0			1730.0			1730.0	
Total Split (%)		3.9%			3.9%			96.1%			96.1%	
Maximum Green (s)		60.0			60.0			1724.0			1724.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			1728.3			1728.3	
Actuated g/C Ratio					0.03			0.98			0.98	
v/c Ratio					0.03			0.10			0.09	
Control Delay					839.0			0.9			0.9	
Queue Delay					0.0			0.0			0.0	
Total Delay					839.0			0.9			0.9	
LOS					F			A			A	
Approach Delay					839.0			0.9			0.9	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			1724.0			1724.0	
90th %ile Term Code		Max			Max			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			1724.0			1724.0	
70th %ile Term Code		Max			Max			MaxR			MaxR	
50th %ile Green (s)		0.0			0.0			1724.0			1724.0	
50th %ile Term Code		Skip			Skip			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			1724.0			1724.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			1724.0			1724.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					1			4			4	
Fuel Used(l)					1			1			9	
CO Emissions (g/hr)					13			21			176	
NOx Emissions (g/hr)					3			4			34	
VOC Emissions (g/hr)					3			5			41	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					3.5			0.0			0.0	
Queue Length 95th (m)					11.0			27.6			27.6	
Internal Link Dist (m)		366.1			421.4			40.2			732.3	
Turn Bay Length (m)												
Base Capacity (vph)					33			1656			1765	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.03			0.10			0.09	

Intersection Summary

Area Type:	Other
Cycle Length:	1800
Actuated Cycle Length:	1758
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.10
Intersection Signal Delay:	3.5
Intersection LOS:	A
Intersection Capacity Utilization	71.7%
ICU Level of Service	C
Analysis Period (min)	15
90th %ile Actuated Cycle:	1800
70th %ile Actuated Cycle:	1800
50th %ile Actuated Cycle:	1730
30th %ile Actuated Cycle:	1730
10th %ile Actuated Cycle:	1730

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

1730 s	70 s

2028 Background Condition

Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	263	217	0
Future Volume (vph)	0	0	0	263	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1343	1316	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1343	1316	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	43%	46%	0%
Adj. Flow (vph)	0	0	0	296	244	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	296	244	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	9	259	212	5
Future Volume (vph)	4	0	9	259	212	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.997
Flt Protected	0.950			0.998		
Satd. Flow (prot)	1217	0	0	2560	1313	0
Flt Permitted	0.950			0.998		
Satd. Flow (perm)	1217	0	0	2560	1313	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	50%	0%	22%	43%	47%	0%
Adj. Flow (vph)	4	0	10	291	238	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	301	244	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	39	128	14	37	137	26	2	195	17	18	227	30
Future Volume (vph)	39	128	14	37	137	26	2	195	17	18	227	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.989			0.985	
Flt Protected		0.988			0.989						0.997	
Satd. Flow (prot)	0	1777	966	0	1758	1633	0	1238	0	0	1381	0
Flt Permitted		0.988			0.989						0.997	
Satd. Flow (perm)	0	1777	966	0	1758	1633	0	1238	0	0	1381	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	3%	8%	69%	12%	7%	0%	50%	57%	13%	6%	43%	7%
Adj. Flow (vph)	44	144	16	42	154	29	2	219	19	20	255	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	16	0	196	29	0	240	0	0	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.1%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	12	70	58	7	40	9	10	216	8	16	250	1
Future Volume (vph)	12	70	58	7	40	9	10	216	8	16	250	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.979				0.850		0.999	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1657	0	0	1476	0	0	1284	1432	0	2558	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1657	0	0	1476	0	0	1284	1432	0	2558	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	51%	14%	0%	45%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	13	79	65	8	45	10	11	243	9	18	281	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	0	0	63	0	0	254	9	0	300	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	8	70	82	6	38	6	35	245	8	21	250	12
Future Volume (vph)	8	70	82	6	38	6	35	245	8	21	250	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.931			0.983				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1676	0	0	1683	0	0	1358	1142	0	1344	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1676	0	0	1683	0	0	1358	1142	0	1344	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	45%	43%	0%	46%	0%
Adj. Flow (vph)	9	79	92	7	43	7	39	275	9	24	281	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	57	0	0	314	9	0	305	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	29	0	183	53	134	0	0	315	36	
Future Volume (vph)	0	0	0	29	0	183	53	134	0	0	315	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.884					0.986			
Flt Protected					0.993					0.986			
Satd. Flow (prot)	0	0	0	0	1220	0	0	1410	0	0	1412	0	
Flt Permitted					0.993					0.986			
Satd. Flow (perm)	0	0	0	0	1220	0	0	1410	0	0	1412	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)										1			
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	
Heavy Vehicles (%)	0%	0%	0%	65%	0%	34%	15%	42%	0%	0%	37%	9%	
Adj. Flow (vph)	0	0	0	33	0	206	60	151	0	0	354	40	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	239	0	0	211	0	0	394	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	84	1	9	0	0	0	0	104	41	240	105	0
Future Volume (vph)	84	1	9	0	0	0	0	104	41	240	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987						0.962				
Flt Protected		0.957									0.966	
Satd. Flow (prot)	0	1557	0	0	0	0	0	1360	0	0	1195	0
Flt Permitted		0.957									0.966	
Satd. Flow (perm)	0	1557	0	0	0	0	0	1360	0	0	1195	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		248.2			250.3			441.6			276.1	
Travel Time (s)		17.9			18.0			19.9			12.4	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
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
Heavy Vehicles (%)	16%	100%	13%	0%	0%	0%	0%	48%	5%	73%	15%	0%
Adj. Flow (vph)	94	1	10	0	0	0	0	117	46	270	118	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	0	0	0	163	0	0	388	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	257	0	0	273	0
Future Volume (vph)	0	0	0	0	1	0	0	257	0	0	273	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1501	0	0	1413	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1501	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
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
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	28%	0%	0%	36%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	289	0	0	307	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	289	0	0	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.20			0.22	
Control Delay					1333.0			1.1			1.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.1			1.2	
LOS					F			A			A	
Approach Delay					1333.0			1.1			1.2	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			5			5	
Fuel Used(l)					1			2			17	
CO Emissions (g/hr)					20			34			312	
NOx Emissions (g/hr)					4			6			60	
VOC Emissions (g/hr)					5			8			72	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			52.9			58.0	
Queue Length 95th (m)					17.2			52.2			57.0	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1476			1390	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.20			0.22	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.22
Intersection Signal Delay:	3.4
Intersection LOS:	A
Intersection Capacity Utilization	77.7%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

 2700 s	 300 s
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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	370	274	0
Future Volume (vph)	0	0	0	370	274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1402	1402	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1402	1402	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	37%	37%	0%
Adj. Flow (vph)	0	0	0	385	285	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	385	285	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	2	364	272	2
Future Volume (vph)	6	16	2	364	272	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.900				0.999	
Flt Protected	0.987					
Satd. Flow (prot)	1388	0	0	2668	1393	0
Flt Permitted	0.987					
Satd. Flow (perm)	1388	0	0	2668	1393	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	31%	0%	37%	38%	0%
Adj. Flow (vph)	6	17	2	379	283	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	381	285	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020




















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	45	210	9	21	207	50	10	272	32	36	210	42
Future Volume (vph)	45	210	9	21	207	50	10	272	32	36	210	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.986			0.980	
Flt Protected		0.991			0.995			0.998			0.994	
Satd. Flow (prot)	0	1863	1633	0	1903	1570	0	1300	0	0	1365	0
Flt Permitted		0.991			0.995			0.998			0.994	
Satd. Flow (perm)	0	1863	1633	0	1903	1570	0	1300	0	0	1365	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	2%	0%	5%	0%	4%	33%	50%	10%	0%	51%	0%
Adj. Flow (vph)	47	219	9	22	216	52	10	283	33	38	219	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	9	0	238	52	0	326	0	0	301	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	66.0%
ICU Level of Service	C
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	87	39	12	60	9	31	291	10	12	265	11
Future Volume (vph)	14	87	39	12	60	9	31	291	10	12	265	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986				0.850		0.994	
Flt Protected		0.995			0.992			0.995			0.998	
Satd. Flow (prot)	0	1725	0	0	1605	0	0	1329	1633	0	2639	0
Flt Permitted		0.995			0.992			0.995			0.998	
Satd. Flow (perm)	0	1725	0	0	1605	0	0	1329	1633	0	2639	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	3%	14%	18%	0%	25%	4%	48%	0%	9%	40%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	15	91	41	13	63	9	32	303	10	13	276	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	85	0	0	335	10	0	300	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	3	9	39	41	13	6	27	323	7	9	313	8
Future Volume (vph)	3	9	39	41	13	6	27	323	7	9	313	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.896			0.987				0.850			0.850
Flt Protected		0.997			0.967			0.996			0.999	
Satd. Flow (prot)	0	1716	0	0	1834	0	0	1367	1633	0	1421	1633
Flt Permitted		0.997			0.967			0.996			0.999	
Satd. Flow (perm)	0	1716	0	0	1834	0	0	1367	1633	0	1421	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	43%	0%	0%	36%	0%
Adj. Flow (vph)	3	9	41	43	14	6	28	336	7	9	326	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	63	0	0	364	7	0	335	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.6%
	ICU Level of Service B
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↔			↑			↓		
Traffic Volume (vph)	0	0	0	116	0	183	41	174	0	0	362	36	
Future Volume (vph)	0	0	0	116	0	183	41	174	0	0	362	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.917					0.988			
Flt Protected					0.981					0.990			
Satd. Flow (prot)	0	0	0	0	1352	0	0	1356	0	0	1479	0	
Flt Permitted					0.981					0.990			
Satd. Flow (perm)	0	0	0	0	1352	0	0	1356	0	0	1479	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	34%	16%	46%	0%	0%	30%	12%	
Adj. Flow (vph)	0	0	0	121	0	191	43	181	0	0	377	38	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	312	0	0	224	0	0	415	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 60.3% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	3	20	0	0	0	0	130	35	243	235	0
Future Volume (vph)	85	3	20	0	0	0	0	130	35	243	235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.975						0.972					
Flt Protected	0.962						0.975					
Satd. Flow (prot)	0	1496	0	0	0	0	0	1690	0	0	1621	0
Flt Permitted	0.962						0.975					
Satd. Flow (perm)	0	1496	0	0	0	0	0	1690	0	0	1621	0
Link Speed (k/h)	50						80					
Link Distance (m)	248.2						250.3					
Travel Time (s)	17.9						18.0					
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)							1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	100%	28%	0%	0%	0%	0%	9%	16%	20%	11%	0%
Adj. Flow (vph)	89	3	21	0	0	0	0	135	36	253	245	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	0	0	0	171	0	0	498	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0						0.0					
Link Offset(m)	0.0						0.0					
Crosswalk Width(m)	1.6						1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop						Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	363	0	0	287	0
Future Volume (vph)	0	0	0	0	1	0	0	363	0	0	287	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1501	0	0	1588	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1501	0	0	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	28%	0%	0%	21%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	378	0	0	299	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	378	0	0	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.26			0.19	
Control Delay					1333.0			1.3			1.1	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.3			1.1	
LOS					F			A			A	
Approach Delay					1333.0			1.3			1.1	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			9			6	
Fuel Used(l)					1			3			18	
CO Emissions (g/hr)					20			50			329	
NOx Emissions (g/hr)					4			10			63	
VOC Emissions (g/hr)					5			12			76	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			74.7			54.5	
Queue Length 95th (m)					17.2			73.4			54.2	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1476			1562	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.26			0.19	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.26
Intersection Signal Delay:	3.2
Intersection LOS:	A
Intersection Capacity Utilization:	82.4%
ICU Level of Service:	E
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

2700 s	300 s

Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	172	175	0
Future Volume (vph)	0	0	0	172	175	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1334	1455	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1334	1455	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	44%	32%	0%
Adj. Flow (vph)	0	0	0	179	182	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	179	182	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	12.5%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	11	172	168	6
Future Volume (vph)	5	0	11	172	168	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt					0.996	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1217	0	0	2567	1440	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1217	0	0	2567	1440	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	50%	0%	22%	43%	34%	0%
Adj. Flow (vph)	5	0	11	179	175	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	190	181	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	18	130	34	18	139	1	15	149	9	7	136	27
Future Volume (vph)	18	130	34	18	139	1	15	149	9	7	136	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.993			0.979	
Flt Protected		0.994			0.994			0.996			0.998	
Satd. Flow (prot)	0	1879	1633	0	1865	1633	0	1328	0	0	1408	0
Flt Permitted		0.994			0.994			0.996			0.998	
Satd. Flow (perm)	0	1879	1633	0	1865	1633	0	1328	0	0	1408	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	1%	0%	13%	1%	0%	0%	50%	0%	0%	39%	13%
Adj. Flow (vph)	19	135	35	19	145	1	16	155	9	7	142	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	35	0	164	1	0	180	0	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.8%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	8	48	40	5	28	6	7	150	5	11	158	1
Future Volume (vph)	8	48	40	5	28	6	7	150	5	11	158	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.943			0.980				0.850		0.999	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1656	0	0	1479	0	0	1310	1432	0	2741	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1656	0	0	1479	0	0	1310	1432	0	2741	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	48%	14%	0%	35%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	8	50	42	5	29	6	7	156	5	11	165	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	40	0	0	163	5	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	5	48	57	4	26	4	24	152	5	15	160	8
Future Volume (vph)	5	48	57	4	26	4	24	152	5	15	160	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.985				0.850			0.850
Flt Protected		0.998			0.994			0.993			0.996	
Satd. Flow (prot)	0	1677	0	0	1686	0	0	1344	1142	0	1430	1633
Flt Permitted		0.998			0.994			0.993			0.996	
Satd. Flow (perm)	0	1677	0	0	1686	0	0	1344	1142	0	1430	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	47%	43%	0%	37%	0%
Adj. Flow (vph)	5	50	59	4	27	4	25	158	5	16	167	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	35	0	0	183	5	0	183	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	27	0	80	10	102	0	0	144	55	
Future Volume (vph)	0	0	0	27	0	80	10	102	0	0	144	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.899					0.963			
Flt Protected					0.988					0.996			
Satd. Flow (prot)	0	0	0	0	1374	0	0	1281	0	0	1418	0	
Flt Permitted					0.988					0.996			
Satd. Flow (perm)	0	0	0	0	1374	0	0	1281	0	0	1418	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	13%	0%	28%	11%	53%	0%	0%	42%	0%	
Adj. Flow (vph)	0	0	0	28	0	83	10	106	0	0	150	57	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	111	0	0	116	0	0	207	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	53	2	7	0	0	0	0	59	6	78	92	0
Future Volume (vph)	53	2	7	0	0	0	0	59	6	78	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.985						0.988					
Flt Protected	0.959						0.978					
Satd. Flow (prot)	0	1815	0	0	0	0	0	1023	0	0	1362	0
Flt Permitted	0.959						0.978					
Satd. Flow (perm)	0	1815	0	0	0	0	0	1023	0	0	1362	0
Link Speed (k/h)	50						80					
Link Distance (m)	248.2						250.3					
Travel Time (s)	17.9						18.0					
Confl. Peds. (#/hr)							1					
Confl. Bikes (#/hr)							1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	94%	0%	0%	70%	0%
Adj. Flow (vph)	55	2	7	0	0	0	0	61	6	81	96	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	0	0	0	67	0	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0						0.0					
Link Offset(m)	0.0						0.0					
Crosswalk Width(m)	1.6						1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop						Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	168	0	0	169	0
Future Volume (vph)	0	0	0	0	1	0	0	168	0	0	169	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1685	0	0	1795	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1685	0	0	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	14%	0%	0%	7%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	175	0	0	176	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	175	0	0	176	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.11			0.10	
Control Delay					1333.0			0.9			0.8	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			0.9			0.8	
LOS					F			A			A	
Approach Delay					1333.0			0.9			0.8	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			3			3	
Fuel Used(l)					1			1			10	
CO Emissions (g/hr)					20			21			192	
NOx Emissions (g/hr)					4			4			37	
VOC Emissions (g/hr)					5			5			44	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					5.7			28.9			28.9	
Queue Length 95th (m)					17.2			29.8			29.8	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1657			1765	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.11			0.10	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.11
Intersection Signal Delay:	4.6
Intersection LOS:	A
Intersection Capacity Utilization	72.2%
ICU Level of Service	C
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

 2700 s	 300 s
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2028 Total Condition



Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	17	30	263	217	8
Future Volume (vph)	5	17	30	263	217	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897			0.995		
Flt Protected	0.988			0.995		
Satd. Flow (prot)	851	0	0	1323	1302	0
Flt Permitted	0.988			0.995		
Satd. Flow (perm)	851	0	0	1323	1302	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	100%	100%	57%	43%	46%	69%
Adj. Flow (vph)	6	19	34	296	244	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	330	253	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	9	289	229	5
Future Volume (vph)	4	0	9	289	229	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt					0.997	
Flt Protected	0.950			0.999		
Satd. Flow (prot)	1217	0	0	2544	1278	0
Flt Permitted	0.950			0.999		
Satd. Flow (perm)	1217	0	0	2544	1278	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	50%	0%	22%	44%	51%	0%
Adj. Flow (vph)	4	0	10	325	257	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	335	263	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



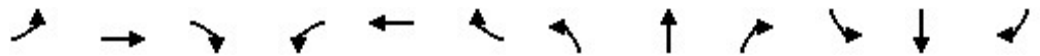
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	45	128	14	37	137	29	2	215	17	19	241	32
Future Volume (vph)	45	128	14	37	137	29	2	215	17	19	241	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.990			0.985	
Flt Protected		0.987			0.989						0.997	
Satd. Flow (prot)	0	1764	966	0	1758	1555	0	1230	0	0	1345	0
Flt Permitted		0.987			0.989						0.997	
Satd. Flow (perm)	0	1764	966	0	1758	1555	0	1230	0	0	1345	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	6%	8%	69%	12%	7%	5%	50%	58%	13%	14%	46%	12%
Adj. Flow (vph)	51	144	16	42	154	33	2	242	19	21	271	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	16	0	196	33	0	263	0	0	328	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.2%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	18	70	58	7	40	9	10	230	8	16	263	1
Future Volume (vph)	18	70	58	7	40	9	10	230	8	16	263	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.946			0.979				0.850			
Flt Protected		0.994			0.994			0.998			0.997	
Satd. Flow (prot)	0	1663	0	0	1476	0	0	1259	1432	0	2524	0
Flt Permitted		0.994			0.994			0.998			0.997	
Satd. Flow (perm)	0	1663	0	0	1476	0	0	1259	1432	0	2524	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	12%	10%	6%	17%	11%	25%	11%	54%	14%	0%	47%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	20	79	65	8	45	10	11	258	9	18	296	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	63	0	0	269	9	0	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	8	70	82	6	38	6	35	259	8	21	263	12
Future Volume (vph)	8	70	82	6	38	6	35	259	8	21	263	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.931			0.983				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1676	0	0	1683	0	0	1331	1142	0	1317	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1676	0	0	1683	0	0	1331	1142	0	1317	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	48%	43%	0%	49%	0%
Adj. Flow (vph)	9	79	92	7	43	7	39	291	9	24	296	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	57	0	0	330	9	0	320	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	29	0	196	53	135	0	0	317	47	
Future Volume (vph)	0	0	0	29	0	196	53	135	0	0	317	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.883					0.983			
Flt Protected					0.994					0.986			
Satd. Flow (prot)	0	0	0	0	1199	0	0	1410	0	0	1385	0	
Flt Permitted					0.994					0.986			
Satd. Flow (perm)	0	0	0	0	1199	0	0	1410	0	0	1385	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
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	
Heavy Vehicles (%)	0%	0%	0%	65%	0%	37%	15%	42%	0%	0%	37%	32%	
Adj. Flow (vph)	0	0	0	33	0	220	60	152	0	0	356	53	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	253	0	0	212	0	0	409	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

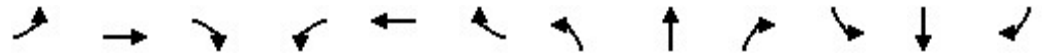
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	85	1	9	0	0	0	0	104	41	241	105	0
Future Volume (vph)	85	1	9	0	0	0	0	104	41	241	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987						0.962				
Flt Protected		0.957									0.966	
Satd. Flow (prot)	0	1546	0	0	0	0	0	1360	0	0	1330	0
Flt Permitted		0.957									0.966	
Satd. Flow (perm)	0	1546	0	0	0	0	0	1360	0	0	1330	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		248.2			250.3			441.6			276.1	
Travel Time (s)		17.9			18.0			19.9			12.4	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
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
Heavy Vehicles (%)	17%	100%	13%	0%	0%	0%	0%	48%	5%	25%	73%	0%
Adj. Flow (vph)	96	1	10	0	0	0	0	117	46	271	118	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	0	0	0	163	0	0	389	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	287	0	0	289	0
Future Volume (vph)	0	0	0	0	1	0	0	287	0	0	289	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1325	0	0	1372	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1325	0	0	1372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
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
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	45%	0%	0%	40%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	322	0	0	325	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	322	0	0	325	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.25			0.24	
Control Delay					1333.0			1.3			1.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.3			1.3	
LOS					F			A			A	
Approach Delay					1333.0			1.3			1.3	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			5			5	
Fuel Used(l)					1			2			18	
CO Emissions (g/hr)					20			38			331	
NOx Emissions (g/hr)					4			7			64	
VOC Emissions (g/hr)					5			9			76	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			62.9			62.9	
Queue Length 95th (m)					17.2			61.6			61.7	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1303			1349	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.25			0.24	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	3.4
Intersection LOS:	A
Intersection Capacity Utilization:	78.5%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

 2700 s	 300 s
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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	35	23	370	274	7
Future Volume (vph)	10	35	23	370	274	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894			0.997		
Flt Protected	0.989			0.997		
Satd. Flow (prot)	1023	0	0	1361	1383	0
Flt Permitted	0.989			0.997		
Satd. Flow (perm)	1023	0	0	1361	1383	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	70%	65%	100%	37%	37%	100%
Adj. Flow (vph)	10	36	24	385	285	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	409	292	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	2	387	306	2
Future Volume (vph)	6	16	2	387	306	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.900			0.999		
Flt Protected	0.987					
Satd. Flow (prot)	1388	0	0	2574	1373	0
Flt Permitted	0.987					
Satd. Flow (perm)	1388	0	0	2574	1373	0
Link Speed (k/h)	60		80		80	
Link Distance (m)	169.1		567.1		638.1	
Travel Time (s)	10.1		25.5		28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	31%	0%	42%	40%	0%
Adj. Flow (vph)	6	17	2	403	319	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	405	321	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7		0.0		0.0	
Link Offset(m)	0.0		0.0		0.0	
Crosswalk Width(m)	1.6		1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	46	210	9	21	207	52	10	290	32	39	234	48
Future Volume (vph)	46	210	9	21	207	52	10	290	32	39	234	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987			0.980	
Flt Protected		0.991			0.995			0.999			0.994	
Satd. Flow (prot)	0	1853	1633	0	1903	1512	0	1277	0	0	1339	0
Flt Permitted		0.991			0.995			0.999			0.994	
Satd. Flow (perm)	0	1853	1633	0	1903	1512	0	1277	0	0	1339	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	2%	0%	5%	0%	8%	33%	53%	10%	5%	53%	4%
Adj. Flow (vph)	48	219	9	22	216	54	10	302	33	41	244	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	9	0	238	54	0	345	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.5%
	ICU Level of Service C
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	14	87	39	12	60	9	31	309	10	12	283	17
Future Volume (vph)	14	87	39	12	60	9	31	309	10	12	283	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986				0.850		0.992	
Flt Protected		0.995			0.992			0.996			0.998	
Satd. Flow (prot)	0	1725	0	0	1605	0	0	1304	1633	0	2578	0
Flt Permitted		0.995			0.992			0.996			0.998	
Satd. Flow (perm)	0	1725	0	0	1605	0	0	1304	1633	0	2578	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	3%	14%	18%	0%	25%	4%	51%	0%	9%	44%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	15	91	41	13	63	9	32	322	10	13	295	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	85	0	0	354	10	0	326	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	3	9	39	41	13	6	27	341	7	9	331	8
Future Volume (vph)	3	9	39	41	13	6	27	341	7	9	331	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.896			0.987				0.850			0.850
Flt Protected		0.997			0.967			0.996			0.999	
Satd. Flow (prot)	0	1716	0	0	1834	0	0	1339	1633	0	1381	1633
Flt Permitted		0.997			0.967			0.996			0.999	
Satd. Flow (perm)	0	1716	0	0	1834	0	0	1339	1633	0	1381	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	46%	0%	0%	40%	0%
Adj. Flow (vph)	3	9	41	43	14	6	28	355	7	9	345	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	63	0	0	383	7	0	354	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	116	0	199	41	176	0	0	364	52	
Future Volume (vph)	0	0	0	116	0	199	41	176	0	0	364	52	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.915					0.983			
Flt Protected					0.982					0.991			
Satd. Flow (prot)	0	0	0	0	1315	0	0	1357	0	0	1431	0	
Flt Permitted					0.982					0.991			
Satd. Flow (perm)	0	0	0	0	1315	0	0	1357	0	0	1431	0	
Link Speed (k/h)				50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	39%	16%	46%	0%	0%	31%	39%	
Adj. Flow (vph)	0	0	0	121	0	207	43	183	0	0	379	54	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	328	0	0	226	0	0	433	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	3	20	0	0	0	0	130	35	245	235	0
Future Volume (vph)	87	3	20	0	0	0	0	130	35	245	235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.975						0.972					
Flt Protected	0.962						0.975					
Satd. Flow (prot)	0	1477	0	0	0	0	0	1265	0	0	1465	0
Flt Permitted	0.962						0.975					
Satd. Flow (perm)	0	1477	0	0	0	0	0	1265	0	0	1465	0
Link Speed (k/h)	50				50				80			
Link Distance (m)	248.2				250.3				441.6			
Travel Time (s)	17.9				18.0				19.9			
Confl. Peds. (#/hr)										1	1	
Confl. Bikes (#/hr)										1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	100%	28%	0%	0%	0%	0%	56%	16%	21%	35%	0%
Adj. Flow (vph)	91	3	21	0	0	0	0	135	36	255	245	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	0	0	0	171	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0		0.0				0.0					
Link Offset(m)	0.0		0.0				0.0					
Crosswalk Width(m)	1.6		1.6				1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control	Stop		Stop				Free				Free	

Intersection Summary

Area Type: Other

















Control Type: Unsignalized

Intersection Capacity Utilization 51.3% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	385	0	0	319	0
Future Volume (vph)	0	0	0	0	1	0	0	385	0	0	319	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1362	0	0	1372	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1362	0	0	1372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	41%	0%	0%	40%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	401	0	0	332	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	401	0	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.30			0.25	
Control Delay					1333.0			1.5			1.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.5			1.3	
LOS					F			A			A	
Approach Delay					1333.0			1.5			1.3	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			9			7	
Fuel Used(l)					1			3			20	
CO Emissions (g/hr)					20			54			367	
NOx Emissions (g/hr)					4			10			71	
VOC Emissions (g/hr)					5			12			85	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			84.0			64.7	
Queue Length 95th (m)					17.2			82.3			63.9	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1339			1349	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.30			0.25	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.30
Intersection Signal Delay:	3.2
Intersection LOS:	A
Intersection Capacity Utilization	83.6%
ICU Level of Service	E
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

2700 s	300 s
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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	29	17	172	175	5
Future Volume (vph)	8	29	17	172	175	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893				0.996	
Flt Protected	0.990			0.995		
Satd. Flow (prot)	1061	0	0	1282	1430	0
Flt Permitted	0.990			0.995		
Satd. Flow (perm)	1061	0	0	1282	1430	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	64%	59%	100%	44%	32%	100%
Adj. Flow (vph)	8	30	18	179	182	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	197	187	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020





















Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	11	190	197	6
Future Volume (vph)	5	0	11	190	197	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.996
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1217	0	0	2482	1397	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1217	0	0	2482	1397	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	50%	0%	22%	48%	38%	0%
Adj. Flow (vph)	5	0	11	198	205	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	209	211	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	130	34	18	139	3	15	162	9	10	155	32
Future Volume (vph)	19	130	34	18	139	3	15	162	9	10	155	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.994			0.978	
Flt Protected		0.994			0.994			0.996			0.998	
Satd. Flow (prot)	0	1860	1633	0	1865	1027	0	1293	0	0	1367	0
Flt Permitted		0.994			0.994			0.996			0.998	
Satd. Flow (perm)	0	1860	1633	0	1865	1027	0	1293	0	0	1367	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	14%	1%	0%	13%	1%	59%	0%	54%	0%	16%	43%	15%
Adj. Flow (vph)	20	135	35	19	145	3	16	169	9	10	161	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	35	0	164	3	0	194	0	0	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.8%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	8	48	40	5	28	6	7	163	5	11	171	7
Future Volume (vph)	8	48	40	5	28	6	7	163	5	11	171	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.943			0.980				0.850		0.995	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1656	0	0	1479	0	0	1275	1432	0	2656	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1656	0	0	1479	0	0	1275	1432	0	2656	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	52%	14%	0%	40%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	8	50	42	5	29	6	7	170	5	11	178	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	40	0	0	177	5	0	196	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	5	48	57	4	26	4	24	166	5	15	173	8
Future Volume (vph)	5	48	57	4	26	4	24	166	5	15	173	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.985				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1677	0	0	1686	0	0	1310	1142	0	1390	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1677	0	0	1686	0	0	1310	1142	0	1390	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	51%	43%	0%	41%	0%
Adj. Flow (vph)	5	50	59	4	27	4	25	173	5	16	180	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	35	0	0	198	5	0	196	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

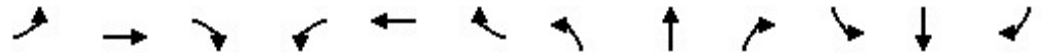
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	27	0	91	10	103	0	0	145	67	
Future Volume (vph)	0	0	0	27	0	91	10	103	0	0	145	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.896					0.957			
Flt Protected					0.989					0.996			
Satd. Flow (prot)	0	0	0	0	1294	0	0	1273	0	0	1361	0	
Flt Permitted					0.989					0.996			
Satd. Flow (perm)	0	0	0	0	1294	0	0	1273	0	0	1361	0	
Link Speed (k/h)					50					80			
Link Distance (m)					276.8					276.1			
Travel Time (s)					19.9					12.4			
Confl. Peds. (#/hr)							1						1
Confl. Bikes (#/hr)													1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	13%	0%	37%	11%	54%	0%	0%	43%	18%	
Adj. Flow (vph)	0	0	0	28	0	95	10	107	0	0	151	70	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	123	0	0	117	0	0	221	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)					0.0					0.0			
Link Offset(m)					0.0					0.0			
Crosswalk Width(m)					1.6					1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

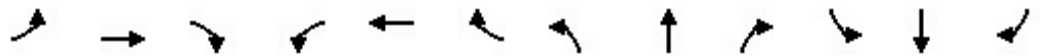
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		↕						↕			↕				
Traffic Volume (vph)	54	2	7	0	0	0	0	59	6	80	92	0			
Future Volume (vph)	54	2	7	0	0	0	0	59	6	80	92	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped Bike Factor															
Frt	0.985						0.988								
Flt Protected	0.959						0.977								
Satd. Flow (prot)	0	1769	0	0	0	0	0	1023	0	0	1355	0			
Flt Permitted	0.959						0.977								
Satd. Flow (perm)	0	1769	0	0	0	0	0	1023	0	0	1355	0			
Link Speed (k/h)	50						80								
Link Distance (m)	248.2						250.3								
Travel Time (s)	17.9						18.0								
Confl. Peds. (#/hr)							1 1								
Confl. Bikes (#/hr)							1								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	94%	0%	2%	70%	0%			
Adj. Flow (vph)	56	2	7	0	0	0	0	61	6	83	96	0			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	65	0	0	0	0	0	67	0	0	179	0			
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No			
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right			
Median Width(m)	0.0						0.0								
Link Offset(m)	0.0						0.0								
Crosswalk Width(m)	1.6						1.6								
Two way Left Turn Lane															
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Turning Speed (k/h)	24			14			24			14			24		
Sign Control	Stop						Free								

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	184	0	0	197	0
Future Volume (vph)	0	0	0	0	1	0	0	184	0	0	197	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1281	0	0	1402	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1281	0	0	1402	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	50%	0%	0%	37%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	192	0	0	205	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	192	0	0	205	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.15			0.15	
Control Delay					1333.0			1.0			1.0	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.0			1.0	
LOS					F			A			A	
Approach Delay					1333.0			1.0			1.0	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			3			3	
Fuel Used(l)					1			1			12	
CO Emissions (g/hr)					20			23			224	
NOx Emissions (g/hr)					4			4			43	
VOC Emissions (g/hr)					5			5			52	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					5.7			33.4			35.5	
Queue Length 95th (m)					17.2			34.2			36.3	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1259			1379	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.15			0.15	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.15
Intersection Signal Delay:	4.4
Intersection LOS:	A
Intersection Capacity Utilization	73.7%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

2700 s	300 s

2033 Background Condition

Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	274	227	0
Future Volume (vph)	0	0	0	274	227	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1343	1316	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1343	1316	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	43%	46%	0%
Adj. Flow (vph)	0	0	0	308	255	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	308	255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	9	270	221	5
Future Volume (vph)	4	0	9	270	221	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.997
Flt Protected	0.950			0.998		
Satd. Flow (prot)	1217	0	0	2559	1438	0
Flt Permitted	0.950			0.998		
Satd. Flow (perm)	1217	0	0	2559	1438	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	50%	0%	22%	43%	34%	0%
Adj. Flow (vph)	4	0	10	303	248	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	313	254	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.3%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↕			↕	
Traffic Volume (vph)	41	134	15	38	143	27	2	204	17	19	237	31
Future Volume (vph)	41	134	15	38	143	27	2	204	17	19	237	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.990			0.985	
Flt Protected		0.988			0.990						0.997	
Satd. Flow (prot)	0	1777	966	0	1760	1633	0	1238	0	0	1380	0
Flt Permitted		0.988			0.990						0.997	
Satd. Flow (perm)	0	1777	966	0	1760	1633	0	1238	0	0	1380	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	3%	8%	69%	12%	7%	0%	50%	57%	13%	6%	43%	7%
Adj. Flow (vph)	46	151	17	43	161	30	2	229	19	21	266	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	17	0	204	30	0	250	0	0	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.2%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	13	73	61	7	42	9	10	226	8	16	261	1
Future Volume (vph)	13	73	61	7	42	9	10	226	8	16	261	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.979				0.850			
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1656	0	0	1477	0	0	1284	1432	0	2558	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1656	0	0	1477	0	0	1284	1432	0	2558	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	51%	14%	0%	45%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	15	82	69	8	47	10	11	254	9	18	293	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	166	0	0	65	0	0	265	9	0	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	8	73	86	6	40	6	36	256	8	22	261	13
Future Volume (vph)	8	73	86	6	40	6	36	256	8	22	261	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.984				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1675	0	0	1685	0	0	1357	1142	0	1344	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1675	0	0	1685	0	0	1357	1142	0	1344	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	45%	43%	0%	46%	0%
Adj. Flow (vph)	9	82	97	7	45	7	40	288	9	25	293	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	59	0	0	328	9	0	318	15
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

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

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	30	0	191	56	140	0	0	329	37	
Future Volume (vph)	0	0	0	30	0	191	56	140	0	0	329	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.883					0.986			
Flt Protected					0.993					0.986			
Satd. Flow (prot)	0	0	0	0	1219	0	0	1411	0	0	1412	0	
Flt Permitted					0.993					0.986			
Satd. Flow (perm)	0	0	0	0	1219	0	0	1411	0	0	1412	0	
Link Speed (k/h)					50					80			
Link Distance (m)					276.8					276.1			
Travel Time (s)					19.9					12.4			
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)							1						
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	
Heavy Vehicles (%)	0%	0%	0%	65%	0%	34%	15%	42%	0%	0%	37%	9%	
Adj. Flow (vph)	0	0	0	34	0	215	63	157	0	0	370	42	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	249	0	0	220	0	0	412	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)					0.0					0.0			
Link Offset(m)					0.0					0.0			
Crosswalk Width(m)					1.6					1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

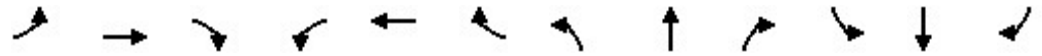
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	87	1	9	0	0	0	0	108	43	250	109	0
Future Volume (vph)	87	1	9	0	0	0	0	108	43	250	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.988						0.962					
Flt Protected	0.957						0.966					
Satd. Flow (prot)	0	1559	0	0	0	0	0	1361	0	0	1337	0
Flt Permitted	0.957						0.966					
Satd. Flow (perm)	0	1559	0	0	0	0	0	1361	0	0	1337	0
Link Speed (k/h)	50				50				80			
Link Distance (m)	248.2				250.3				441.6			
Travel Time (s)	17.9				18.0				19.9			
Confl. Peds. (#/hr)										1	1	
Confl. Bikes (#/hr)										1		
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
Heavy Vehicles (%)	16%	100%	13%	0%	0%	0%	0%	48%	5%	24%	73%	0%
Adj. Flow (vph)	98	1	10	0	0	0	0	121	48	281	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	0	0	0	0	0	169	0	0	403	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0			
Link Offset(m)	0.0				0.0				0.0			
Crosswalk Width(m)	1.6				1.6				1.6			
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop				Stop				Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	271	0	0	287	0
Future Volume (vph)	0	0	0	0	1	0	0	271	0	0	287	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1501	0	0	1413	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1501	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
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
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	28%	0%	0%	36%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	304	0	0	322	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	304	0	0	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.21			0.23	
Control Delay					1333.0			1.1			1.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.1			1.2	
LOS					F			A			A	
Approach Delay					1333.0			1.1			1.2	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			5			5	
Fuel Used(l)					1			2			18	
CO Emissions (g/hr)					20			35			328	
NOx Emissions (g/hr)					4			7			63	
VOC Emissions (g/hr)					5			8			76	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			56.4			61.7	
Queue Length 95th (m)					17.2			55.4			60.4	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1476			1390	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.21			0.23	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.23
Intersection Signal Delay:	3.3
Intersection LOS:	A
Intersection Capacity Utilization:	78.4%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

 2700 s	 300 s
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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	386	286	0
Future Volume (vph)	0	0	0	386	286	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1402	1392	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1402	1392	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	37%	38%	0%
Adj. Flow (vph)	0	0	0	402	298	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	402	298	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	2	381	284	2
Future Volume (vph)	6	16	2	381	284	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.900			0.999		
Flt Protected	0.987					
Satd. Flow (prot)	1388	0	0	2790	1393	0
Flt Permitted	0.987					
Satd. Flow (perm)	1388	0	0	2790	1393	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	31%	0%	31%	38%	0%
Adj. Flow (vph)	6	17	2	397	296	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	399	298	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	47	219	9	22	216	52	10	284	34	37	218	44
Future Volume (vph)	47	219	9	22	216	52	10	284	34	37	218	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.986			0.980	
Flt Protected		0.991			0.995			0.999			0.994	
Satd. Flow (prot)	0	1863	1633	0	1903	1570	0	1301	0	0	1365	0
Flt Permitted		0.991			0.995			0.999			0.994	
Satd. Flow (perm)	0	1863	1633	0	1903	1570	0	1301	0	0	1365	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	2%	0%	5%	0%	4%	33%	50%	10%	0%	51%	0%
Adj. Flow (vph)	49	228	9	23	225	54	10	296	35	39	227	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	277	9	0	248	54	0	341	0	0	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.5%
	ICU Level of Service C
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	15	91	41	13	63	9	33	304	10	13	276	12
Future Volume (vph)	15	91	41	13	63	9	33	304	10	13	276	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986				0.850		0.994	
Flt Protected		0.995			0.992			0.995			0.998	
Satd. Flow (prot)	0	1725	0	0	1605	0	0	1330	1633	0	2644	0
Flt Permitted		0.995			0.992			0.995			0.998	
Satd. Flow (perm)	0	1725	0	0	1605	0	0	1330	1633	0	2644	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	3%	14%	18%	0%	25%	4%	48%	0%	9%	40%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	16	95	43	14	66	9	34	317	10	14	288	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	89	0	0	351	10	0	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	3	9	41	43	14	6	28	337	7	9	326	8
Future Volume (vph)	3	9	41	43	14	6	28	337	7	9	326	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.894			0.988				0.850			0.850
Flt Protected		0.997			0.967			0.996			0.999	
Satd. Flow (prot)	0	1712	0	0	1835	0	0	1367	1633	0	1421	1633
Flt Permitted		0.997			0.967			0.996			0.999	
Satd. Flow (perm)	0	1712	0	0	1835	0	0	1367	1633	0	1421	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	43%	0%	0%	36%	0%
Adj. Flow (vph)	3	9	43	45	15	6	29	351	7	9	340	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	66	0	0	380	7	0	349	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.2%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↔			↕			↕		
Traffic Volume (vph)	0	0	0	121	0	191	43	182	0	0	377	37	
Future Volume (vph)	0	0	0	121	0	191	43	182	0	0	377	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.917					0.988			
Flt Protected					0.981					0.991			
Satd. Flow (prot)	0	0	0	0	1352	0	0	1357	0	0	1479	0	
Flt Permitted					0.981					0.991			
Satd. Flow (perm)	0	0	0	0	1352	0	0	1357	0	0	1479	0	
Link Speed (k/h)					50					80			
Link Distance (m)					276.8					276.1			
Travel Time (s)					19.9					23.0			
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)									1				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	34%	16%	46%	0%	0%	30%	12%	
Adj. Flow (vph)	0	0	0	126	0	199	45	190	0	0	393	39	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	325	0	0	235	0	0	432	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)					0.0					0.0			
Link Offset(m)					0.0					0.0			
Crosswalk Width(m)					1.6					1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	3	21	0	0	0	0	136	36	253	246	0
Future Volume (vph)	88	3	21	0	0	0	0	136	36	253	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.975						0.971					
Flt Protected	0.962						0.975					
Satd. Flow (prot)	0	1496	0	0	0	0	0	1264	0	0	1470	0
Flt Permitted	0.962						0.975					
Satd. Flow (perm)	0	1496	0	0	0	0	0	1264	0	0	1470	0
Link Speed (k/h)	50						80					
Link Distance (m)	248.2						250.3					
Travel Time (s)	17.9						18.0					
Confl. Peds. (#/hr)							1 1					
Confl. Bikes (#/hr)							1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	100%	28%	0%	0%	0%	0%	56%	16%	20%	35%	0%
Adj. Flow (vph)	92	3	22	0	0	0	0	142	38	264	256	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	0	0	0	180	0	0	520	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0						0.0					
Link Offset(m)	0.0						0.0					
Crosswalk Width(m)	1.6						1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop						Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	382	0	0	302	0
Future Volume (vph)	0	0	0	0	1	0	0	382	0	0	302	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1501	0	0	1588	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1501	0	0	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	28%	0%	0%	21%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	398	0	0	315	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	398	0	0	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.27			0.20	
Control Delay					1333.0			1.3			1.1	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.3			1.1	
LOS					F			A			A	
Approach Delay					1333.0			1.3			1.1	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			9			6	
Fuel Used(l)					1			3			19	
CO Emissions (g/hr)					20			53			346	
NOx Emissions (g/hr)					4			10			67	
VOC Emissions (g/hr)					5			12			80	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			80.1			58.1	
Queue Length 95th (m)					17.2			78.4			57.6	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1476			1562	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.27			0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.27
Intersection Signal Delay:	3.1
Intersection LOS:	A
Intersection Capacity Utilization:	83.4%
ICU Level of Service:	E
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

2700 s	300 s

Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	181	184	0
Future Volume (vph)	0	0	0	181	184	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1334	1455	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1334	1455	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	44%	32%	0%
Adj. Flow (vph)	0	0	0	189	192	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	189	192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	11	182	177	6
Future Volume (vph)	5	0	11	182	177	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.996
Flt Protected	0.950				0.997	
Satd. Flow (prot)	1217	0	0	2565	1439	0
Flt Permitted	0.950				0.997	
Satd. Flow (perm)	1217	0	0	2565	1439	0
Link Speed (k/h)	60				80	80
Link Distance (m)	169.1				567.1	638.1
Travel Time (s)	10.1				25.5	28.7
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	50%	0%	22%	43%	34%	0%
Adj. Flow (vph)	5	0	11	190	184	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	201	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7				0.0	0.0
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	1.6				1.6	1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop				Free	Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	19	137	36	19	147	1	16	157	9	7	143	28
Future Volume (vph)	19	137	36	19	147	1	16	157	9	7	143	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.994			0.979	
Flt Protected		0.994			0.994			0.996			0.998	
Satd. Flow (prot)	0	1879	1633	0	1865	1633	0	1329	0	0	1407	0
Flt Permitted		0.994			0.994			0.996			0.998	
Satd. Flow (perm)	0	1879	1633	0	1865	1633	0	1329	0	0	1407	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	1%	0%	13%	1%	0%	0%	50%	0%	0%	39%	13%
Adj. Flow (vph)	20	143	38	20	153	1	17	164	9	7	149	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	38	0	173	1	0	190	0	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.6%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	9	51	42	5	29	6	7	158	6	11	166	1
Future Volume (vph)	9	51	42	5	29	6	7	158	6	11	166	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.980				0.850		0.999	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1657	0	0	1480	0	0	1309	1432	0	2739	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1657	0	0	1480	0	0	1309	1432	0	2739	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	48%	14%	0%	35%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	9	53	44	5	30	6	7	165	6	11	173	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	41	0	0	172	6	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	6	51	60	4	28	4	25	161	6	15	169	9
Future Volume (vph)	6	51	60	4	28	4	25	161	6	15	169	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.985				0.850			0.850
Flt Protected		0.998			0.995			0.993			0.996	
Satd. Flow (prot)	0	1675	0	0	1688	0	0	1343	1142	0	1523	1633
Flt Permitted		0.998			0.995			0.993			0.996	
Satd. Flow (perm)	0	1675	0	0	1688	0	0	1343	1142	0	1523	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	47%	43%	0%	28%	0%
Adj. Flow (vph)	6	53	63	4	29	4	26	168	6	16	176	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	37	0	0	194	6	0	192	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↕			↕	
Traffic Volume (vph)	0	0	0	28	0	84	10	107	0	0	151	58
Future Volume (vph)	0	0	0	28	0	84	10	107	0	0	151	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.898						0.963	
Flt Protected					0.988			0.996				
Satd. Flow (prot)	0	0	0	0	1371	0	0	1280	0	0	1419	0
Flt Permitted					0.988			0.996				
Satd. Flow (perm)	0	0	0	0	1371	0	0	1280	0	0	1419	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		276.8			286.2			276.1			510.9	
Travel Time (s)		19.9			20.6			12.4			23.0	
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	13%	0%	28%	11%	53%	0%	0%	42%	0%
Adj. Flow (vph)	0	0	0	29	0	88	10	111	0	0	157	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	117	0	0	121	0	0	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕						↕			↕		
Traffic Volume (vph)	56	2	7	0	0	0	0	62	6	82	97	0	
Future Volume (vph)	56	2	7	0	0	0	0	62	6	82	97	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt	0.986								0.989				
Flt Protected	0.959											0.978	
Satd. Flow (prot)	0	1817	0	0	0	0	0	1021	0	0	1361	0	
Flt Permitted	0.959											0.978	
Satd. Flow (perm)	0	1817	0	0	0	0	0	1021	0	0	1361	0	
Link Speed (k/h)	50		50				80		80				
Link Distance (m)	248.2		250.3				441.6		276.1				
Travel Time (s)	17.9		18.0				19.9		12.4				
Confl. Peds. (#/hr)									1		1		
Confl. Bikes (#/hr)									1				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	94%	0%	0%	70%	0%	
Adj. Flow (vph)	58	2	7	0	0	0	0	65	6	85	101	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	67	0	0	0	0	0	71	0	0	186	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0		0.0				0.0		0.0				
Link Offset(m)	0.0		0.0				0.0		0.0				
Crosswalk Width(m)	1.6		1.6				1.6		1.6				
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop		Stop				Free		Free				

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	176	0	0	178	0
Future Volume (vph)	0	0	0	0	1	0	0	176	0	0	178	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1685	0	0	1795	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1685	0	0	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	14%	0%	0%	7%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	183	0	0	185	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	183	0	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.11			0.10	
Control Delay					1333.0			0.9			0.9	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			0.9			0.9	
LOS					F			A			A	
Approach Delay					1333.0			0.9			0.9	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			3			3	
Fuel Used(l)					1			1			11	
CO Emissions (g/hr)					20			22			202	
NOx Emissions (g/hr)					4			4			39	
VOC Emissions (g/hr)					5			5			47	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					5.7			30.4			30.5	
Queue Length 95th (m)					17.2			31.1			31.4	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1657			1765	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.11			0.10	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.11
Intersection Signal Delay:	4.5
Intersection LOS:	A
Intersection Capacity Utilization	72.7%
ICU Level of Service	C
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

	
2700 s	300 s

2033 Total Condition



Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	17	30	274	227	8
Future Volume (vph)	5	17	30	274	227	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897				0.995	
Flt Protected	0.988			0.995		
Satd. Flow (prot)	851	0	0	1324	1302	0
Flt Permitted	0.988			0.995		
Satd. Flow (perm)	851	0	0	1324	1302	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	100%	100%	57%	43%	46%	69%
Adj. Flow (vph)	6	19	34	308	255	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	342	264	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	9	300	238	5
Future Volume (vph)	4	0	9	300	238	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.997
Flt Protected	0.950			0.999		
Satd. Flow (prot)	1217	0	0	2543	1278	0
Flt Permitted	0.950			0.999		
Satd. Flow (perm)	1217	0	0	2543	1278	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	50%	0%	22%	44%	51%	0%
Adj. Flow (vph)	4	0	10	337	267	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	347	273	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↕			↕	
Traffic Volume (vph)	46	134	15	38	143	30	2	224	17	20	251	33
Future Volume (vph)	46	134	15	38	143	30	2	224	17	20	251	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.991			0.985	
Flt Protected		0.987			0.990						0.997	
Satd. Flow (prot)	0	1764	966	0	1760	1555	0	1230	0	0	1345	0
Flt Permitted		0.987			0.990						0.997	
Satd. Flow (perm)	0	1764	966	0	1760	1555	0	1230	0	0	1345	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	6%	8%	69%	12%	7%	5%	50%	58%	13%	14%	46%	12%
Adj. Flow (vph)	52	151	17	43	161	34	2	252	19	22	282	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	17	0	204	34	0	273	0	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.3%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	19	73	61	7	42	9	10	240	8	16	274	1
Future Volume (vph)	19	73	61	7	42	9	10	240	8	16	274	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.946			0.979				0.850			
Flt Protected		0.994			0.994			0.998			0.997	
Satd. Flow (prot)	0	1663	0	0	1477	0	0	1259	1432	0	2522	0
Flt Permitted		0.994			0.994			0.998			0.997	
Satd. Flow (perm)	0	1663	0	0	1477	0	0	1259	1432	0	2522	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	12%	10%	6%	17%	11%	25%	11%	54%	14%	0%	47%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	21	82	69	8	47	10	11	270	9	18	308	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	65	0	0	281	9	0	327	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	8	73	86	6	40	6	36	270	8	22	274	13
Future Volume (vph)	8	73	86	6	40	6	36	270	8	22	274	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.984				0.850			0.850
Flt Protected		0.998			0.994			0.994			0.996	
Satd. Flow (prot)	0	1675	0	0	1685	0	0	1330	1142	0	1317	1633
Flt Permitted		0.998			0.994			0.994			0.996	
Satd. Flow (perm)	0	1675	0	0	1685	0	0	1330	1142	0	1317	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
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
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	48%	43%	0%	49%	0%
Adj. Flow (vph)	9	82	97	7	45	7	40	303	9	25	308	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	59	0	0	343	9	0	333	15
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	30	0	204	56	141	0	0	331	49	
Future Volume (vph)	0	0	0	30	0	204	56	141	0	0	331	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.882					0.983			
Flt Protected					0.994					0.986			
Satd. Flow (prot)	0	0	0	0	1198	0	0	1410	0	0	1386	0	
Flt Permitted					0.994					0.986			
Satd. Flow (perm)	0	0	0	0	1198	0	0	1410	0	0	1386	0	
Link Speed (k/h)				50			80			80			
Link Distance (m)				276.8			286.2			510.9			
Travel Time (s)				19.9			20.6			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
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	
Heavy Vehicles (%)	0%	0%	0%	65%	0%	37%	15%	42%	0%	0%	37%	31%	
Adj. Flow (vph)	0	0	0	34	0	229	63	158	0	0	372	55	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	263	0	0	221	0	0	427	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)			0.0		0.0		0.0		0.0		0.0		
Link Offset(m)			0.0		0.0		0.0		0.0		0.0		
Crosswalk Width(m)			1.6		1.6		1.6		1.6		1.6		
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.2%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1	9	0	0	0	0	108	43	252	109	0
Future Volume (vph)	89	1	9	0	0	0	0	108	43	252	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.988						0.962					
Flt Protected	0.957						0.966					
Satd. Flow (prot)	0	1547	0	0	0	0	0	1361	0	0	1331	0
Flt Permitted	0.957						0.966					
Satd. Flow (perm)	0	1547	0	0	0	0	0	1361	0	0	1331	0
Link Speed (k/h)	50						80					
Link Distance (m)	248.2						250.3					
Travel Time (s)	17.9						18.0					
Confl. Peds. (#/hr)							1 1					
Confl. Bikes (#/hr)							1					
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
Heavy Vehicles (%)	17%	100%	13%	0%	0%	0%	0%	48%	5%	25%	73%	0%
Adj. Flow (vph)	100	1	10	0	0	0	0	121	48	283	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	0	0	0	169	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0						0.0					
Link Offset(m)	0.0						0.0					
Crosswalk Width(m)	1.6						1.6					
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop						Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	300	0	0	303	0
Future Volume (vph)	0	0	0	0	1	0	0	300	0	0	303	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1325	0	0	1372	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1325	0	0	1372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
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
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	45%	0%	0%	40%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	337	0	0	340	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	337	0	0	340	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.26			0.25	
Control Delay					1333.0			1.4			1.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.4			1.3	
LOS					F			A			A	
Approach Delay					1333.0			1.4			1.3	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			6			6	
Fuel Used(l)					1			2			19	
CO Emissions (g/hr)					20			40			348	
NOx Emissions (g/hr)					4			8			67	
VOC Emissions (g/hr)					5			9			80	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			66.9			66.8	
Queue Length 95th (m)					17.2			65.0			65.3	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1303			1349	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.26			0.25	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.26
Intersection Signal Delay:	3.3
Intersection LOS:	A
Intersection Capacity Utilization:	79.3%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	35	23	386	286	7
Future Volume (vph)	10	35	23	386	286	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894			0.997		
Flt Protected	0.989			0.997		
Satd. Flow (prot)	1023	0	0	1363	1374	0
Flt Permitted	0.989			0.997		
Satd. Flow (perm)	1023	0	0	1363	1374	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	70%	65%	100%	37%	38%	100%
Adj. Flow (vph)	10	36	24	402	298	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	426	305	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	2	403	318	2
Future Volume (vph)	6	16	2	403	318	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.900				0.999	
Flt Protected	0.987					
Satd. Flow (prot)	1388	0	0	2592	1373	0
Flt Permitted	0.987					
Satd. Flow (perm)	1388	0	0	2592	1373	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	31%	0%	41%	40%	0%
Adj. Flow (vph)	6	17	2	420	331	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	422	333	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
3: County Road 6 & Beachville Road

01/14/2020



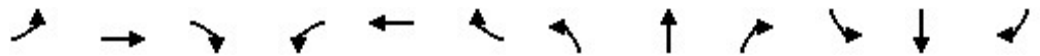
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Volume (vph)	48	219	9	22	216	54	10	302	34	41	242	50
Future Volume (vph)	48	219	9	22	216	54	10	302	34	41	242	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987			0.980	
Flt Protected		0.991			0.995			0.999			0.994	
Satd. Flow (prot)	0	1853	1633	0	1903	1512	0	1278	0	0	1341	0
Flt Permitted		0.991			0.995			0.999			0.994	
Satd. Flow (perm)	0	1853	1633	0	1903	1512	0	1278	0	0	1341	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	2%	0%	5%	0%	8%	33%	53%	10%	4%	53%	4%
Adj. Flow (vph)	50	228	9	23	225	56	10	315	35	43	252	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	9	0	248	56	0	360	0	0	347	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	72.5%
ICU Level of Service	C
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	15	91	41	13	63	9	33	322	10	13	294	18
Future Volume (vph)	15	91	41	13	63	9	33	322	10	13	294	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.986				0.850		0.992	
Flt Protected		0.995			0.992			0.995			0.998	
Satd. Flow (prot)	0	1725	0	0	1605	0	0	1311	1633	0	2580	0
Flt Permitted		0.995			0.992			0.995			0.998	
Satd. Flow (perm)	0	1725	0	0	1605	0	0	1311	1633	0	2580	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	3%	14%	18%	0%	25%	4%	50%	0%	9%	44%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	16	95	43	14	66	9	34	335	10	14	306	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	89	0	0	369	10	0	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	↗
Traffic Volume (vph)	3	9	41	43	14	6	28	355	7	9	344	8
Future Volume (vph)	3	9	41	43	14	6	28	355	7	9	344	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.894			0.988				0.850			0.850
Flt Protected		0.997			0.967			0.996			0.999	
Satd. Flow (prot)	0	1712	0	0	1835	0	0	1339	1633	0	1381	1633
Flt Permitted		0.997			0.967			0.996			0.999	
Satd. Flow (perm)	0	1712	0	0	1835	0	0	1339	1633	0	1381	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	46%	0%	0%	40%	0%
Adj. Flow (vph)	3	9	43	45	15	6	29	370	7	9	358	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	66	0	0	399	7	0	367	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.7%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↔			↑			↑		
Traffic Volume (vph)	0	0	0	121	0	207	43	183	0	0	379	54	
Future Volume (vph)	0	0	0	121	0	207	43	183	0	0	379	54	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.915					0.983			
Flt Protected					0.982					0.991			
Satd. Flow (prot)	0	0	0	0	1315	0	0	1357	0	0	1431	0	
Flt Permitted					0.982					0.991			
Satd. Flow (perm)	0	0	0	0	1315	0	0	1357	0	0	1431	0	
Link Speed (k/h)				50			80			80			
Link Distance (m)				276.8			286.2			510.9			
Travel Time (s)				19.9			20.6			23.0			
Confl. Peds. (#/hr)							1			1			
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	39%	16%	46%	0%	0%	31%	39%	
Adj. Flow (vph)	0	0	0	126	0	216	45	191	0	0	395	56	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	342	0	0	236	0	0	451	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)			0.0		0.0		0.0				0.0		
Link Offset(m)			0.0		0.0		0.0				0.0		
Crosswalk Width(m)			1.6		1.6		1.6				1.6		
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.7%
ICU Level of Service	C
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (vph)	96	4	23	0	0	0	0	136	36	255	246	0
Future Volume (vph)	96	4	23	0	0	0	0	136	36	255	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975						0.971				
Flt Protected		0.962									0.975	
Satd. Flow (prot)	0	1481	0	0	0	0	0	1264	0	0	1465	0
Flt Permitted		0.962									0.975	
Satd. Flow (perm)	0	1481	0	0	0	0	0	1264	0	0	1465	0
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		248.2			250.3			441.6			276.1	
Travel Time (s)		17.9			18.0			19.9			12.4	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	17%	100%	28%	0%	0%	0%	0%	56%	16%	21%	35%	0%
Adj. Flow (vph)	100	4	24	0	0	0	0	142	38	266	256	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	0	0	0	180	0	0	522	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

















Control Type: Unsignalized

Intersection Capacity Utilization 53.5% ICU Level of Service A

Analysis Period (min) 15

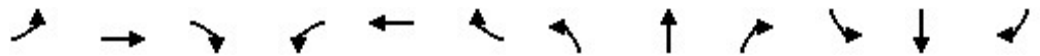
Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1	0	0	426	0	0	352	0
Future Volume (vph)	0	0	0	0	1	0	0	426	0	0	352	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1466	0	0	1549	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1466	0	0	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	31%	0%	0%	24%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	444	0	0	367	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	444	0	0	367	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.31			0.24	
Control Delay					1333.0			1.5			1.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.5			1.2	
LOS					F			A			A	
Approach Delay					1333.0			1.5			1.2	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			11			9	
Fuel Used(l)					1			3			22	
CO Emissions (g/hr)					20			61			406	
NOx Emissions (g/hr)					4			12			78	
VOC Emissions (g/hr)					5			14			94	
Dilemma Vehicles (#)					0			1			1	
Queue Length 50th (m)					5.7			94.2			71.1	
Queue Length 95th (m)					17.2			91.7			70.1	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1441			1523	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.31			0.24	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.31
Intersection Signal Delay:	3.0
Intersection LOS:	A
Intersection Capacity Utilization:	85.8%
ICU Level of Service:	E
Analysis Period (min):	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

 2700 s	 300 s
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Lanes, Volumes, Timings
 1: County Road 6 & Landfill Access Road

01/14/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	29	17	181	184	5
Future Volume (vph)	8	29	17	181	184	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893				0.997	
Flt Protected	0.990			0.996		
Satd. Flow (prot)	1061	0	0	1285	1432	0
Flt Permitted	0.990			0.996		
Satd. Flow (perm)	1061	0	0	1285	1432	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	875.0			173.6	378.6	
Travel Time (s)	52.5			7.8	17.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	64%	59%	100%	44%	32%	100%
Adj. Flow (vph)	8	30	18	189	192	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	207	197	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
2: County Road 6 & Carmeuse Gate 2 Driveway

01/14/2020





















Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	11	199	206	6
Future Volume (vph)	5	0	11	199	206	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.996
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1217	0	0	2481	1407	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1217	0	0	2481	1407	0
Link Speed (k/h)	60			80	80	
Link Distance (m)	169.1			567.1	638.1	
Travel Time (s)	10.1			25.5	28.7	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	50%	0%	22%	48%	37%	0%
Adj. Flow (vph)	5	0	11	207	215	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	218	221	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 3: County Road 6 & Beachville Road

01/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	137	36	19	147	3	16	170	9	11	162	34
Future Volume (vph)	20	137	36	19	147	3	16	170	9	11	162	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	0.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.994			0.978	
Flt Protected		0.994			0.994			0.996			0.997	
Satd. Flow (prot)	0	1860	1633	0	1865	1034	0	1293	0	0	1367	0
Flt Permitted		0.994			0.994			0.996			0.997	
Satd. Flow (perm)	0	1860	1633	0	1865	1034	0	1293	0	0	1367	0
Link Speed (k/h)		80			80			80			80	
Link Distance (m)		584.1			639.5			879.3			64.2	
Travel Time (s)		26.3			28.8			39.6			2.9	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	14%	1%	0%	13%	1%	58%	0%	54%	0%	15%	43%	15%
Adj. Flow (vph)	21	143	38	20	153	3	17	177	9	11	169	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	38	0	173	3	0	203	0	0	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.3%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
4: County Road 6 & Karn Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (vph)	9	51	42	5	29	6	7	171	6	11	180	7
Future Volume (vph)	9	51	42	5	29	6	7	171	6	11	180	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		35.0	0.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.980				0.850		0.995	
Flt Protected		0.996			0.994			0.998			0.997	
Satd. Flow (prot)	0	1657	0	0	1480	0	0	1274	1432	0	2653	0
Flt Permitted		0.996			0.994			0.998			0.997	
Satd. Flow (perm)	0	1657	0	0	1480	0	0	1274	1432	0	2653	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		368.1			481.4			202.7			879.3	
Travel Time (s)		22.1			28.9			9.1			39.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	18%	10%	6%	17%	11%	25%	11%	52%	14%	0%	40%	0%
Parking (#/hr)					0							
Adj. Flow (vph)	9	53	44	5	30	6	7	178	6	11	188	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	41	0	0	185	6	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	1.13	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
5: County Road 6 & Clarke Road

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	51	60	4	28	4	25	174	6	15	182	9
Future Volume (vph)	6	51	60	4	28	4	25	174	6	15	182	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.985				0.850			0.850
Flt Protected		0.998			0.995			0.994			0.996	
Satd. Flow (prot)	0	1675	0	0	1688	0	0	1309	1142	0	1388	1633
Flt Permitted		0.998			0.995			0.994			0.996	
Satd. Flow (perm)	0	1675	0	0	1688	0	0	1309	1142	0	1388	1633
Link Speed (k/h)		60			80			80			80	
Link Distance (m)		561.1			644.0			510.9			1201.4	
Travel Time (s)		33.7			29.0			23.0			54.1	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	29%	8%	3%	20%	12%	0%	10%	51%	43%	0%	41%	0%
Adj. Flow (vph)	6	53	63	4	29	4	26	181	6	16	190	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	37	0	0	207	6	0	206	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

6: County Road 6 & Westbound 401 On Ramp/Westbound 401 Off Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	28	0	96	10	108	0	0	153	70	
Future Volume (vph)	0	0	0	28	0	96	10	108	0	0	153	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.895					0.958			
Flt Protected					0.989					0.996			
Satd. Flow (prot)	0	0	0	0	1292	0	0	1271	0	0	1365	0	
Flt Permitted					0.989					0.996			
Satd. Flow (perm)	0	0	0	0	1292	0	0	1271	0	0	1365	0	
Link Speed (k/h)	50			50			80			80			
Link Distance (m)	276.8			286.2			276.1			510.9			
Travel Time (s)	19.9			20.6			12.4			23.0			
Confl. Peds. (#/hr)							1						
Confl. Bikes (#/hr)										1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	13%	0%	37%	11%	54%	0%	0%	43%	17%	
Adj. Flow (vph)	0	0	0	29	0	100	10	113	0	0	159	73	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	129	0	0	123	0	0	232	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0			0.0			0.0			0.0			
Link Offset(m)	0.0			0.0			0.0			0.0			
Crosswalk Width(m)	1.6			1.6			1.6			1.6			
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Stop			Stop			Free			Free			

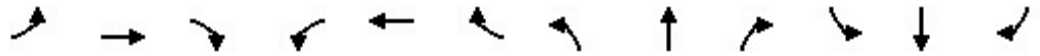
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: County Road 6 & Eastbound 401 Off Ramp/Eastbound 401 On Ramp

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	2	7	0	0	0	0	62	6	84	97	0
Future Volume (vph)	57	2	7	0	0	0	0	62	6	84	97	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.986						0.989					
Flt Protected	0.958						0.977					
Satd. Flow (prot)	0	1769	0	0	0	0	0	1021	0	0	1357	0
Flt Permitted	0.958						0.977					
Satd. Flow (perm)	0	1769	0	0	0	0	0	1021	0	0	1357	0
Link Speed (k/h)	50				50				80			
Link Distance (m)	248.2				250.3				441.6			
Travel Time (s)	17.9				18.0				19.9			
Confl. Peds. (#/hr)										1	1	
Confl. Bikes (#/hr)										1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	94%	0%	2%	70%	0%
Adj. Flow (vph)	59	2	7	0	0	0	0	65	6	88	101	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	0	0	0	71	0	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0			
Link Offset(m)	0.0				0.0				0.0			
Crosswalk Width(m)	1.6				1.6				1.6			
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Stop				Stop				Free			

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Traffic Volume (vph)	0	0	0	0	1	0	0	198	0	0	211	0
Future Volume (vph)	0	0	0	0	1	0	0	198	0	0	211	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	961	0	0	1272	0	0	1392	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	961	0	0	1272	0	0	1392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		56			56			80			80	
Link Distance (m)		390.1			445.4			64.2			189.2	
Travel Time (s)		25.1			28.6			2.9			8.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	51%	0%	0%	38%	0%
Adj. Flow (vph)	0	0	0	0	1	0	0	206	0	0	220	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1	0	0	206	0	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5			30.5			30.5	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		1.8			1.8			1.8			1.8	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type					NA			NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases												
Detector Phase		4			4			2			2	
Switch Phase												

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		60.0			60.0			10.0			10.0	
Minimum Split (s)		70.0			70.0			24.0			24.0	
Total Split (s)		300.0			300.0			2700.0			2700.0	
Total Split (%)		10.0%			10.0%			90.0%			90.0%	
Maximum Green (s)		290.0			290.0			2694.0			2694.0	
Yellow Time (s)		5.0			5.0			3.0			3.0	
All-Red Time (s)		5.0			5.0			3.0			3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		10.0			10.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			Max			Max	
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								11.0			11.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)					60.0			2696.9			2696.9	
Actuated g/C Ratio					0.02			0.98			0.98	
v/c Ratio					0.05			0.16			0.16	
Control Delay					1333.0			1.1			1.0	
Queue Delay					0.0			0.0			0.0	
Total Delay					1333.0			1.1			1.0	
LOS					F			A			A	
Approach Delay					1333.0			1.1			1.0	
Approach LOS					F			A			A	
90th %ile Green (s)		60.0			60.0			2694.0			2694.0	
90th %ile Term Code		Min			Min			MaxR			MaxR	
70th %ile Green (s)		60.0			60.0			2694.0			2694.0	
70th %ile Term Code		Min			Min			MaxR			MaxR	
50th %ile Green (s)		60.0			60.0			2694.0			2694.0	
50th %ile Term Code		Min			Min			MaxR			MaxR	
30th %ile Green (s)		0.0			0.0			2694.0			2694.0	
30th %ile Term Code		Skip			Skip			MaxR			MaxR	
10th %ile Green (s)		0.0			0.0			2694.0			2694.0	
10th %ile Term Code		Skip			Skip			MaxR			MaxR	
Stops (vph)					0			3			4	
Fuel Used(l)					1			1			13	
CO Emissions (g/hr)					20			25			241	
NOx Emissions (g/hr)					4			5			47	
VOC Emissions (g/hr)					5			6			56	
Dilemma Vehicles (#)					0			0			0	
Queue Length 50th (m)					5.7			36.3			38.6	
Queue Length 95th (m)					17.2			37.2			39.2	
Internal Link Dist (m)		366.1			421.4			40.2			165.2	
Turn Bay Length (m)												
Base Capacity (vph)					101			1251			1369	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	

Lanes, Volumes, Timings
 10: Rail Line (At Grade) & County Road 6

01/14/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					0.01			0.16			0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	3000
Actuated Cycle Length:	2742
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.16
Intersection Signal Delay:	4.2
Intersection LOS:	A
Intersection Capacity Utilization	74.4%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	2770
70th %ile Actuated Cycle:	2770
50th %ile Actuated Cycle:	2770
30th %ile Actuated Cycle:	2700
10th %ile Actuated Cycle:	2700

Splits and Phases: 10: Rail Line (At Grade) & County Road 6

2	4
2700 s	300 s