



URBANTRANS
Engineering Solutions Inc.

Traffic Impact Study - Response to Comments

Proposed Waste Transfer and Recycling Centre (York 1)

29831 Irish School Road
Town of Dresden ON

UT-24-056

March 6, 2026



URBANTRANS
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March 6, 2026

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**RE: Traffic Impact Study - Response to Comments
Proposed Waste Transfer and Recycling Centre (York1)
29831 Irish School Road, Town of Dresden (Municipality of Chatham-Kent (C-K)) ON
Reference No.: PP-24-056**

UrbanTrans Engineering Solutions Inc. acknowledges receipt of Municipality of Chatham-Kent dated February 2, 2026, in regards to the Regenerative Recycling Facility at 29831 Irish School Road (the Site). The Site is located north of Croton Line and east of Irish School Road north of the Town of Dresden (Municipality of Chatham-Kent (C-K)) ON.

It is our understanding that the facility proposed by York1 would serve as a comprehensive waste transfer and recycling center dedicated to the responsible management of Construction and Demolition (C&D) waste sourced from throughout southern Ontario. The facility would encompass on-site processing capabilities, including the recycling of C&D wood waste into low-carbon fuel products, as well as sorting and distribution operations for materials such as tar shingles. Notably, while the site incorporates a landfill component, it will exclusively receive C&D waste, precluding the acceptance of municipal, household, toxic, or odorous waste streams. The landfill's purpose would be limited to the disposal of C&D waste that cannot be recycled or repurposed through the facility's processing operations. Furthermore, the proposed facility would feature dedicated infrastructure for soil cleaning and remediation services, underscoring its commitment to environmental stewardship and sustainable waste management practices.

York1 is preparing ECA applications to the Ministry of Environment, Conservation, and Parks (MECP) to facilitate their planned operations on the Site. This TIS has been prepared to provide the municipality with an analysis of the transportation operations of the site. A TIS is not required for the ECA application.

This Traffic Impact Study - Response to Comments concludes the proposed Waste Transfer and Recycling Centre (York1) development will have minimal traffic impacts to the immediate roadways and nearby intersections.

Based on the comments received from Municipality of Chatham-Kent, our responses in the context of site operations are addressed as follows:

Municipality of Chatham-Kent:

1. Third, Staff has conducted a preliminary review of the memo entitled Truck Route Review. Based on this preliminary review, additional information is requested, as outlined below.

Further details of the proposed traffic to the site, including confirmation of the design vehicle, and number of vehicles anticipated to be travelling inbound and outbound along the proposed routes.

Response:

For further information regarding the number of vehicles anticipated to be travelling inbound and outbound along the proposed routes, please refer to Section 1.0 Revised trip distribution and future total traffic conditions. Please refer to Figure 5 – Truck Volumes on Preferred Routes and Figure 7 – Site Trip Distribution and Figure 8 – Future Total Traffic Volumes. This traffic study is preliminary and is provided as a courtesy to the Municipality of Chatham-Kent to address traffic related concerns, counts are subject to change based on the approved ECA amounts.

2. Associated assessment of the proposed routes to confirm whether any changes are required based on the proposed design vehicle and volumes at key intersections to assess swept path analysis and confirm if any mitigative measures may be required along the route to address the increased risk of additional truck volumes.

Response:

The Client will request intersection design drawings from the Municipality of Chatham-Kent to assess the proposed vehicle swept path analyses at key intersections. The proposed vehicles to be assessed including Walking Floor, Roll-Off Bin, Pony-Pup, Trailer, and Triaxle trucks.

The two key intersections in the vicinity of the subject site are:

- McCreary Line/Croton Line and Irish School Road
- Kent Line and Irish School Road

For further information regarding the number of vehicles anticipated to be travelling inbound and outbound along the proposed routes, please refer to Section 1.0 Revised trip distribution and future total traffic conditions.

3. The memo references a Traffic Impact Study (TIS) completed May 24, 2024. A copy of this TIS, or an updated TIS, including the additional information noted herein is requested.

Details on the proposed site access including the proposed design and confirmation of conformance to standards, location in relation to other property accesses, sight distance review of the access for all anticipated inbound and outbound turns, and review of need for a northbound right turn lane or a southbound left turn lane to accommodate proposed truck movements.

Response:

Please refer to Section 2.0 Site Access Safety Review.

4. Any mitigating measures that are proposed by the Proponent to ensure trucks follow the routes identified in the Truck Route Review memo.

Response:

The Owner will direct transport trailers to follow the preferred truck routes as indicated on the attached Revised Preferred Routes (Figure 1 to Figure 4), thereby avoiding residential areas and roadways subject to load restrictions. York1 drivers will be instructed of preferred routes to and from the site, if they do not adhere to these routes, disciplinary actions will follow.

During half-load season (March 1st to April 30th) the alternative routes provided in Figures 14, 15 and 16 will be followed for trucks loaded with axle weights greater than 5,000 kg. If trucks have axle weights below 5,000 kg they will follow the preferred routes outlined in Figures 1 to 4.

5. Figure 2- Chatham from/to Irish School Road proposes a route along Centre Side Road/CK Road 28 through the community of Tupperville. The Municipality has concerns with the proposed routing of trucks through the community, and requests additional review of this proposed route and consideration of alternatives, as well as detailed assessment as noted above regarding the proposed route to assess if any mitigative measures may be required.

6. It should also be noted that the Tupperville Road bridge over the Sydenham River is identified for rehabilitation in 5-10 years time. As noted above, confirmation of the proposed additional vehicle traffic is required and may require additional review of the potential impacts to this bridge, relative to the planned rehabilitation timeline.

Response:

Figure 2 has been revised to exclude the truck route passing through the community of Tupperville. For additional details regarding the truck route, please refer to the Figure 2: Revised Route: Chatham from/to Irish School Road.

7. Additionally, the memo indicates that “no such load restriction signage was identified along any of the preferred truck routes based on the latest available visual sources,”

8. The routes identified in the report include road segments that are subject to half load restrictions in the spring, as noted. This requires further review.

1. Centre Side Road over Gray Drain
2. Dawn Mills Road over Sydenham River
3. Croton Line over Longs Creek
4. Croton Line over Molls Creek

Response:

Acknowledged. We confirmed by way of site drive by on March 4, 2026, the four half-load restrictions on Centre Side Road over Gray Drain, Dawn Mills Road over Sydenham River, Croton Line over Longs Creek, and Croton Line over Molly's Creek have posted signage stating

half-load restrictions during spring prior to the bridges. Figures 12 and 13 show the posted “Load Restriction In Effect” (Rb-76), “Load Restriction Weight” (Rb-76tA) and “Load Restriction Duration” (Rb-76tB) signage on Croton Line at George Street and on Dawn Mills Road at Base Line, respectively.

During the half-load season (March 1 to April 30), trucks with axle weights exceeding 5,000 kg will utilize the alternative routes shown in Figures 14, 15, and 16. Trucks with axle weights below 5,000 kg will continue to use the preferred routes illustrated in Figures 1 to 4.

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1.0 REVISED TRIP DISTRIBUTION AND FUTURE TOTAL TRAFFIC

1.1 Revised Trip Distribution and Trip Assignment

Based on Section 2.2 from the Traffic Impact Study – Proposed Waste Transfer and Recycling Centre (York 1), the site generated traffic during the morning and afternoon peak hour were calculated based on the maximum number of inbound and outbound truck and detailed in the Traffic Projection Table provided in Appendix B.

Regarding the directional flow of truck traffic to and from the Dresden landfill site, a key consideration is the preferred routing to minimize the impact on the Town of Dresden and the community of Tupperville. In this context, UrbanTrans has evaluated the feasibility of directing truck traffic passing through the community of Tupperville. The revised distribution of site traffic trips to the study area intersection is summarized in Table 1 and illustrated from Figure 7.

Table 1: Revised Trip Distribution

Roadway	Direction	AM and PM Peak Hours	
		In	Out
Irish School Road (North)	North	10%	10%
Dresden, Winsor, and Chatham-Kent via Base Line	West	30%	30%
London via Base Line	East	60%	60%
Total		100%	100%

It is important to note that the majority of site-generated traffic will consist of heavy vehicles, including Walking Floor, Roll-Off Bin, Pony-Pup, Trailer, and Triaxle trucks. These truck volumes will be converted to passenger car units (PCUs) using a ratio of 1 truck = 3 PCUs.

Table 2 summarizes the projected trip generation volumes for the proposed development during the morning and afternoon peak hours at full build-out, based on the traffic management plan described above. Figure 5 illustrates the revised truck trip generation volumes for the proposed development, while Figure 7 shows the revised passenger car equivalent (PCE) units.

Table 2: Site Trip Generation

Land Use (Magnitude)	New Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Regenerative Recycling Facility	Trucks	10	10	20	10	10	20
	~ Passenger Car Unit	~30	~30	~60	~30	~30	~60

Based on the trip generation calculations, the proposed development is projected to generate a total of 20 two-way truck trips (10 inbound and 10 outbound) during both the morning and afternoon peak hours, equivalent to approximately 60 passenger vehicle trips (30 inbound and 30

outbound) during these same peak periods. The resulting PCUs will then be assessed for Future Total Traffic Conditions, Left-Turn Warrant Analysis, and Right-Turn Warrant Analysis.

1.2 Revised Future Total Traffic Conditions

To assess the future total traffic conditions for signalized and stop-controlled intersections, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the unsignalized intersections.

The detailed results of the analysis are provided in Appendix C and summarized in Table 3. The estimated future total traffic volumes are illustrated in Figure 7.

Table 3: Revised Future Total Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Irish School Road & McCreary Line/Croton Line (County 29) (Unsignalized)	EBLT	9.7	1.2	0.05	A	10.3	2.4	0.09	B
	WBLTR	10.9	2.9	0.11	B	11.1	2.6	0.10	B
	NBLT	4.0	1.1	0.04	A	3.7	1.1	0.04	A
	SBLRT	2.1	0.5	0.02	A	1.8	0.5	0.02	A
Irish School Road & Kent Line/Kent Line (Unsignalized)	WBLTR	2.4	-	<0.01	A	3.6	-	<0.01	A
	NBLTR	9.5	2.5	0.09	A	9.5	2.5	0.09	A
	SBLTR	9.5	2.7	0.10	A	9.6	3.1	0.11	A
Irish School Road & Site Access (Unsignalized)	WBLR	9.6	1.0	0.04	A	9.8	1.0	0.04	A
	SBLT	0.3	-	<0.01	A	0.2	-	<0.01	A

The intersection capacity analysis indicates that under future total traffic conditions, the intersections including proposed site access are expected to operate at acceptable levels of service.

2.0 SITE ACCESS SAFETY REVIEW

The development proposal outlines site access via Irish School Road, providing transportation services to and from the site. This section assesses the adequacy of the site access from a transportation safety standpoint and recommends any necessary mitigation measures. The safety evaluation includes an analysis of the feasibility of safe turning maneuvers at the site accesses, considering factors such as sight lines and access spacing. Following discussions with the Client, the proposed site access will be redesigned and expanded from the existing access to accommodate heavy vehicles entering and exiting the site.

2.1 Left-Turn Warrant Analysis

In order to confirm whether a southbound left turn lane is warranted at Irish School Road and site access, a left-turn lane warrant analysis is analyzed based on the review and application of the Ministry of Transportation Ontario's (MTO) Geometric Design Standards for Ontario

Highways applicable nomograph. **Figure 8** illustrates Future Total Traffic Volumes at the intersection of at Irish School Road and Site Access.

Figure 8: Future Total Traffic Volumes Irish School Road and Site Access

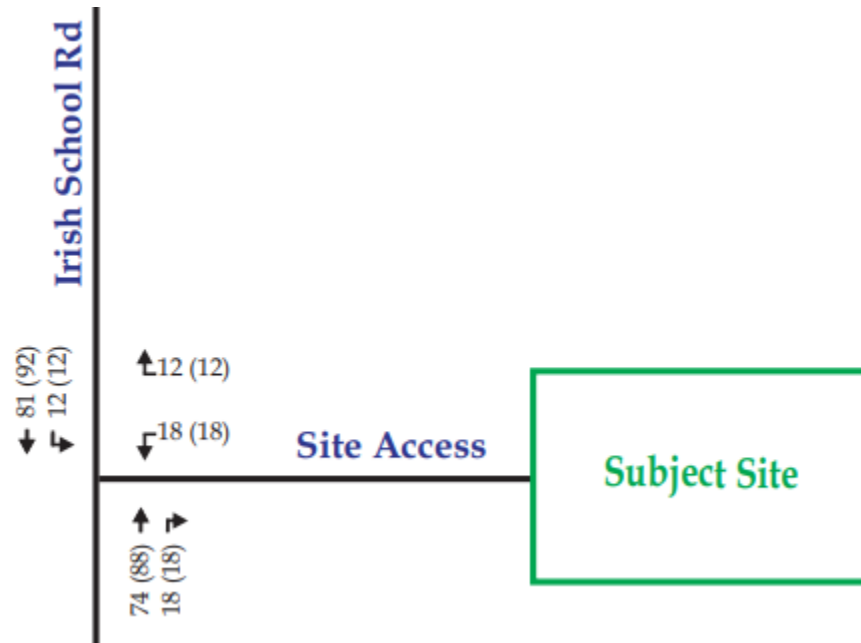


Figure 8 indicates the intersection experiences the highest southbound left turning traffic volumes during the afternoon peak hour period. As a result, the traffic volumes during the afternoon peak hour for future total will be assessed for worst case scenario.

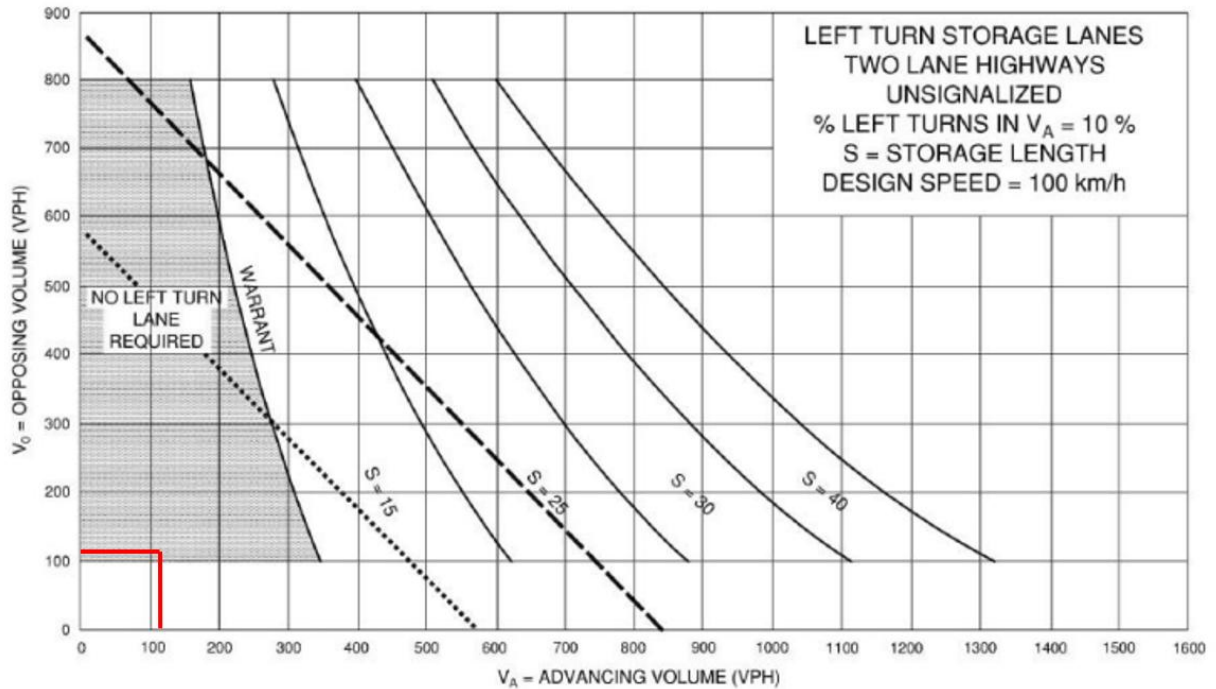
Based on the following calculated results in **Table 4**, a conservative percentage of left turning traffic volume in the southbound approach of 5% or less and a design speed of 100 km/hr (posted speed (90km/h) plus 10 km/h) under stop control will be used to determine the need of a southbound left turning lane.

Table 4: Percentage of Left Turning Traffic Calculation (Future Total Conditions)

GIVEN	
Left Turning Traffic Volume, V_L	12 vehicles per hour
Advancing Traffic Volume, V_A	104 vehicles per hour
Opposing Traffic Volume, V_O	106 vehicles per hour
Design Speed	100 km/h
$\text{Percentage of Left Turning Traffic} = \frac{V_L * 100}{V_A} = \frac{12 * 100}{104} = 11.5\% \sim 12\%$	

As shown below in **Figure 9**, the projected traffic volumes intersect left of the warrant line area of the nomograph. On this basis, the southbound left turn lane does not numerically meet the MTO warrant guidelines under the future total horizon.

Figure 9: Left Turn Warrant Analysis Worksheet



Source: MTO Nomograph, Chapter E: AT-Grade Intersections

2.2 Right-Turn Warrant Analysis

According to the Geometric Design Standards for Ontario Highways published by the Ministry of Transportation of Ontario (MTO), an exclusive right turn lane is generally justified when the following criteria are satisfied:

- Right turning traffic volumes for the design hour is 60 vehicles per hour or more
- Property is readily available, and
- The terminal points of the deceleration/acceleration lanes do not conflict with any adjacent commercial development.

The forecasted northbound right running volumes at the intersection of Irish School Road and Site Access are expected to be 18 vehicles during both the future morning and afternoon peak hour periods.

As such, the forecasted northbound right turning volumes at the site access points are comparably lower than 60 vehicles per hour requirement and do not warrant an exclusive right turn lane.

2.3 Intersection Sight Distance

Section 9.9 of the TAC GDGCR specifies intersection sight distances for various intersection control types. The calculated and design sight distances are further detailed in TAC GDGCR Tables 9.9.4, 9.9.6, and 9.9.12 for vehicles making left turns from a stop, right turns from a stop, and left turns from the major road, respectively. Case B1 (Left Turn from the Minor Road) and Case B2/B3 (Right Turn/Crossing Maneuver from the Minor Road) were utilized to assess the adequacy of sight lines at the site accesses. The WB-20 design vehicle, representing the most constrained vehicle profile expected to use the site, was used for the evaluation. Table 5 presents the required sight distances and compares them to the available sight distances, which were measured using Google Maps.

Irish School Road has a posted speed limit of 90 km/h. In accordance with standard practice, a design speed of 100 km/h was chosen, reflecting a 10 km/h increase above the posted speed limit. The intersection sight distance is provided in Table 5. The intersection sight distance at the proposed driveway via Irish School Road are illustrated in Figure 10.

Table 5: Intersection Sight Distance Assessment

Irish School Road and Site Access Posted Speed: 90 km/h Design Speed: 100km/h		
Formula	IDS = 0.278 * V _{major} * t _g	
Scenario	Case B1 - Left Turn	Case B2/B3 - Right Turn
Time Gap ¹	11.5s	10.5s
Required Sight Distance	320m (looking north)	292m (looking south)
Available Sight Distance	350m + (looking north)	350m + (looking south)
Minimum Sight Distance Satisfied	Yes	Yes

Note: Time gap for left-turn WB-20 tractor semi-trailers from a stop onto a two-lane highway with no median and with a grade less than 3%. Value from Table 9.9.3 in the GDGCR.

Table 5 indicates that the minimum sight distance requirements are met at the existing site accesses to Irish School Road.

2.4 Stopping Sight Distance

Irish School Road is straight and relatively flat adjacent to the site. The stopping sight distance requirements for level roadways are provided in TAC GDGCR Table 2.5.2, based on passenger vehicle calculation. These requirements do not explicitly account for truck operations. Although trucks require longer stopping sight distances at the same speed, their higher driver eye height generally provides better visibility than passenger vehicles. As a result, a separate stopping sight distance for trucks is not specified. The stopping sight distance assessment is provided in Table 6. The stopping sight distance at the proposed driveway via Irish School Road are illustrated in Figure 11.

Table 6: Stopping Sight Distance Assessment

Irish School Road and Site Access Posted Speed: 90 km/h Design Speed: 100km/h Formular: $0.278 * V * t + 0.039 * (V^2/a)$		
Scenario	looking north	looking south
Assumed Design Speed	100km/h	100km/h
Break Reaction Time (t)	2.5 s	2.5 s
Deceleration Rate (a)	3.4 m/s ²	3.4 m/s ²
Required Stopping Sight Distance	185	185
Available Sight Distance	350m	350m

The stopping sight distance exceeds the recommended requirements for passenger vehicles, ensuring that trucks can also safely use the proposed accesses. Clear visibility beyond the required distance is available at the existing site accesses. Therefore, there is adequate stopping sight distance for vehicles approaching the site access from both the northbound and southbound directions.

2.5 Access Spacing Review

Municipality of Chatham-Kent Driveway Policy Section 7.3 Distance between Proposed Two-way Driveway and other Driveways was applied to evaluate the access spacing for the proposed site entrances along Irish School Road. The required access spacing and the proposed spacing are outlined in **Table 7**.

Table 7: Access Spacing Review

Site Access	Minimum Spacing	Available Spacing	Evaluation	Source
Site Access connection at Irish School Road	Minimum of 9 measures at the street line and curb or edge of the roadway	18m	Requirement Satisfied	Appendix G - Chatham-Kent Driveway Access Policy

As shown in Table 7, the site access location meets the corner clearance requirements. No operational or safety concerns are anticipated.

2.6 Site Access Design Recommendations

The proposed site access is located approximately 1.1 km north of the McCreary Line/Croton Line and St. George North/Irish School Road intersection. The current site plan does not reflect the detailed driveway design; however, UrbanTrans recommends a full-movement access compliant with The Transportation Association of Canada (TAC) and Municipality of Chatham-Kent Driveway Policy, featuring 6-metre inbound lanes, 6-metre outbound lanes with a median,

and a 15-metre curb radius to accommodate large trucks. Swept path analyses for heavy vehicles—including Walking Floor, Roll-Off Bin, Pony-Pup, Trailer, and Triaxle trucks—will be provided to the Municipality upon completion.

We trust the enclosed comply with your requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Kind Regards,

UrbanTrans Engineering Solutions Inc.



Signature

Annosan Srikantha, P.Eng.
President

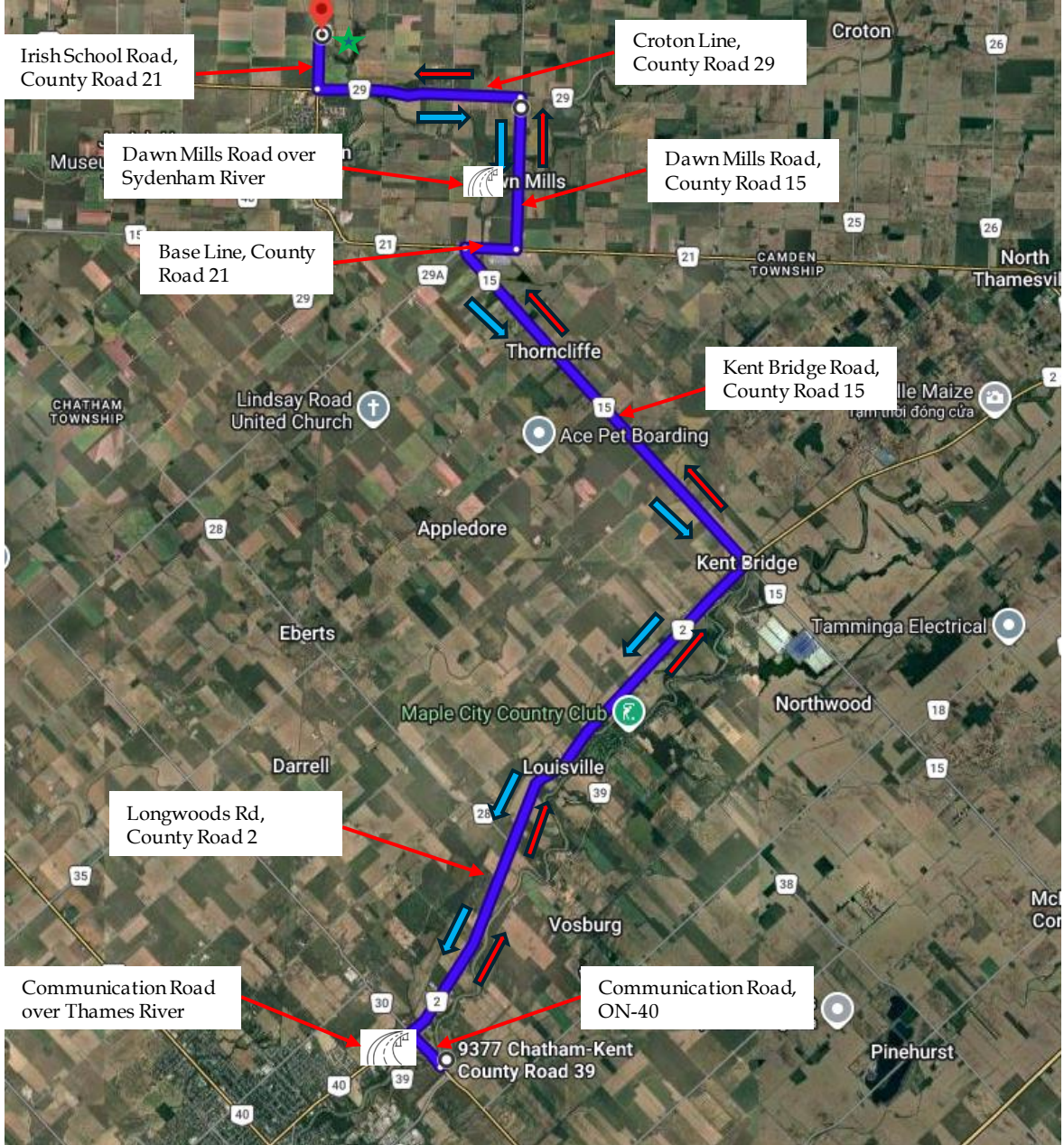


Engineer's Seal

DISCLAIMER

This document entitled “29831 Irish School Road – Traffic Impact Study – Response to Comments’ or named part thereof (the “project”) was prepared by UrbanTrans Engineering Solutions Inc. (“UrbanTrans”) for the account of York 1 (the “Client”). This document is confidential and prepared solely for approval and commenting municipalities and their agencies in their review and approval of this project. The materials in this report reflect best judgement based on the information available at the time the document was issued. Any reliance on this document by any third party is strictly prohibited and UrbanTrans accepts no responsibility for damages, if any, suffered by any third party by reason of decisions made or actions based on this document.

Figure 2 – Revised Route: Chatham-Kent from/to Irish School Road



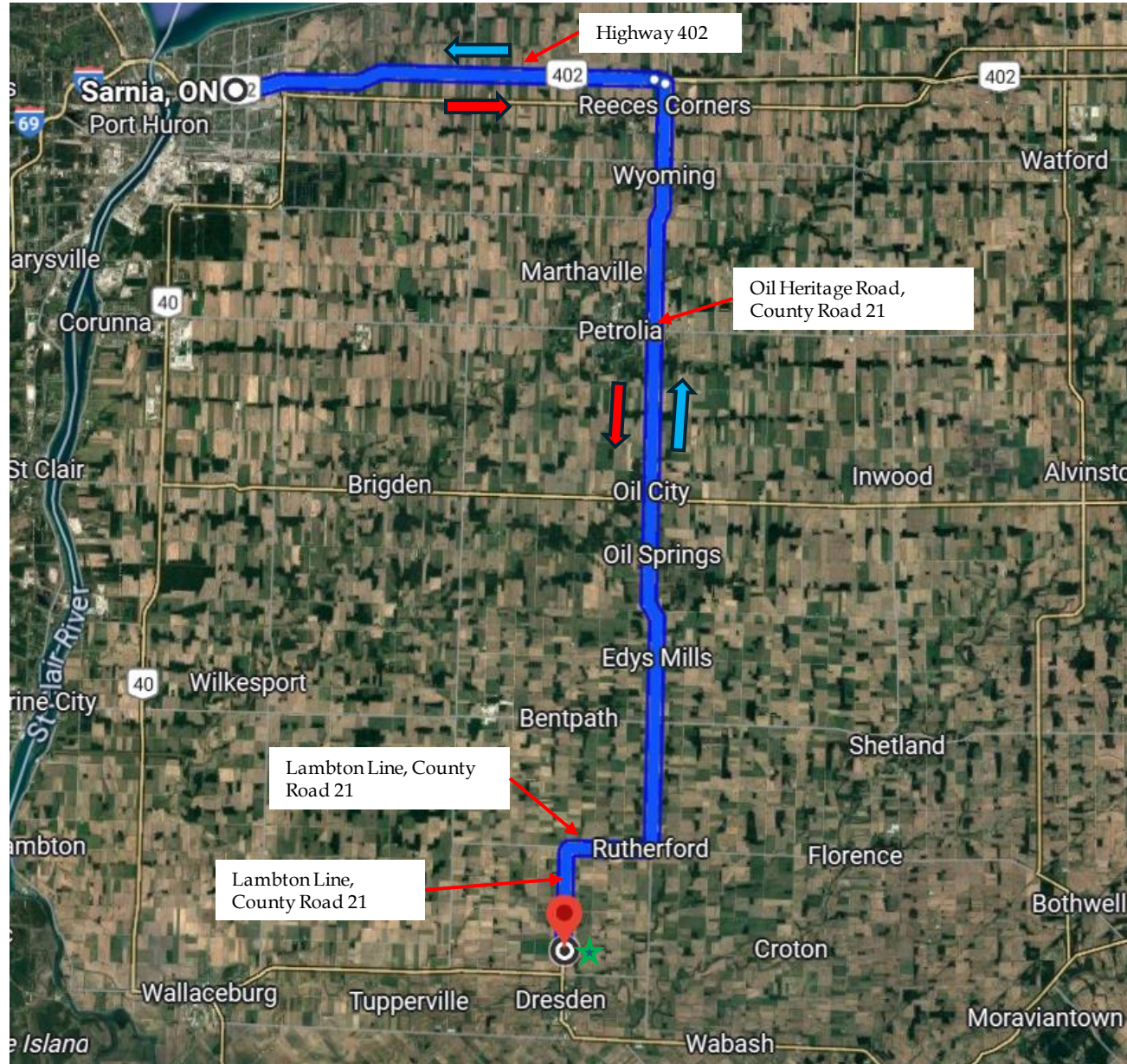
- LEGEND:**
- ★ Subject Site
 - Inbound Truck Route
 - ← Outbound Truck Route
 - ⤴ Bridge

Figure 3 - London from/to Irish School Road



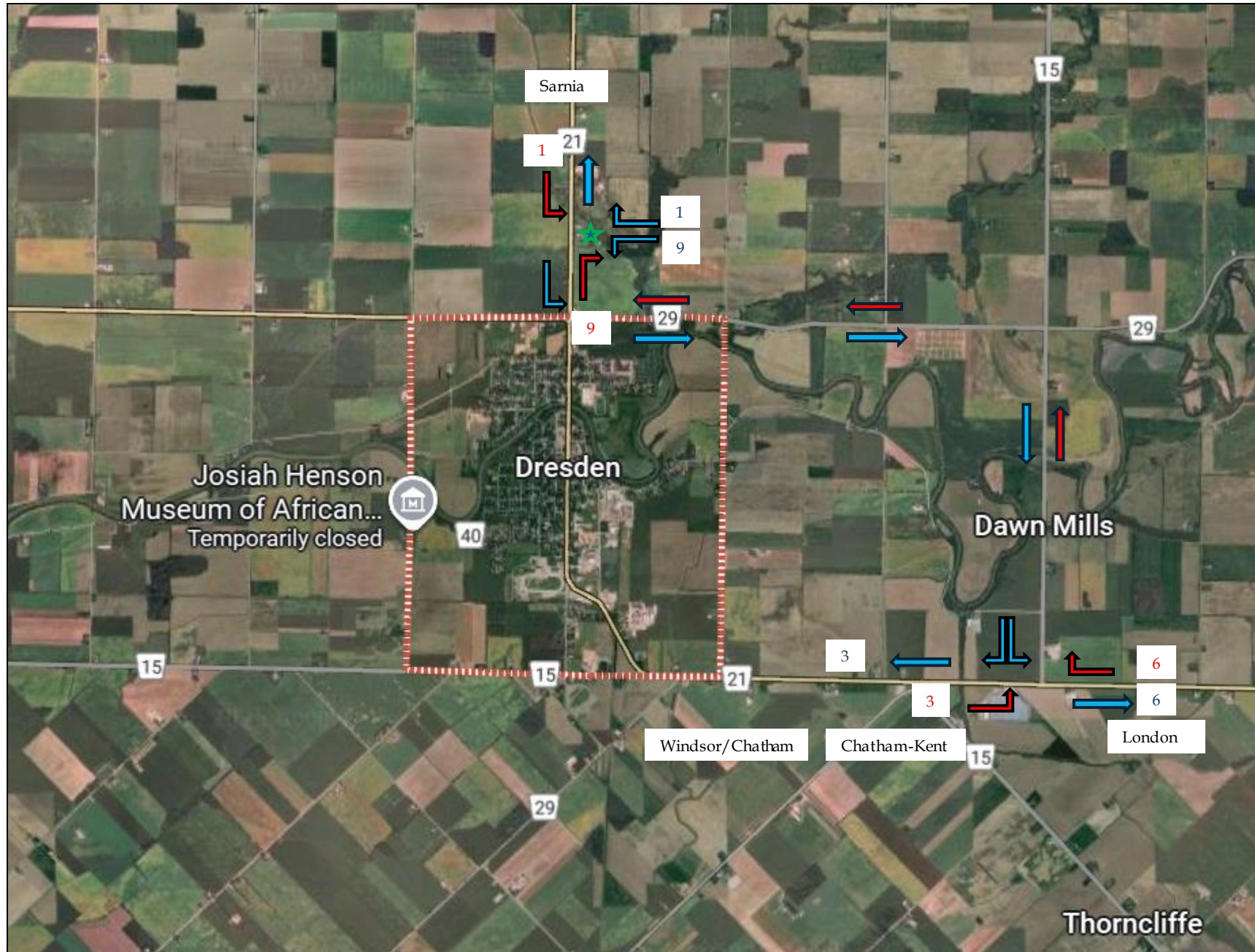
- LEGEND:**
- ★ Subject Site
 - Inbound Truck Route
 - ← Outbound Truck Route
 - ⌒ Bridge

Figure 4 - Sarnia from/to Irish School Road



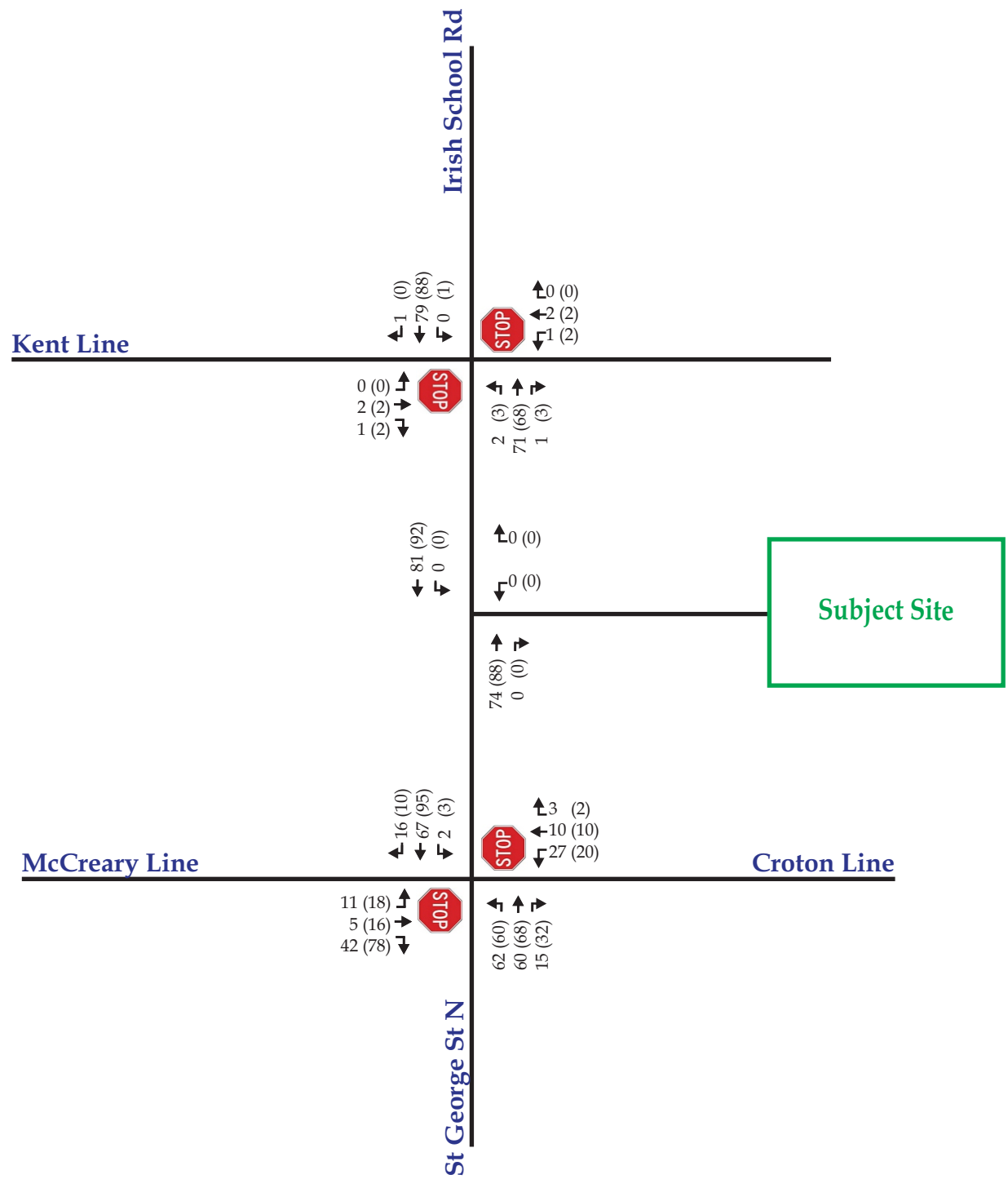
- LEGEND:**
- ★ Subject Site
 - Inbound Truck Route
 - ← Outbound Truck Route
 - ⤵ Bridge

Figure 5 - Truck Volumes on Preferred Routes



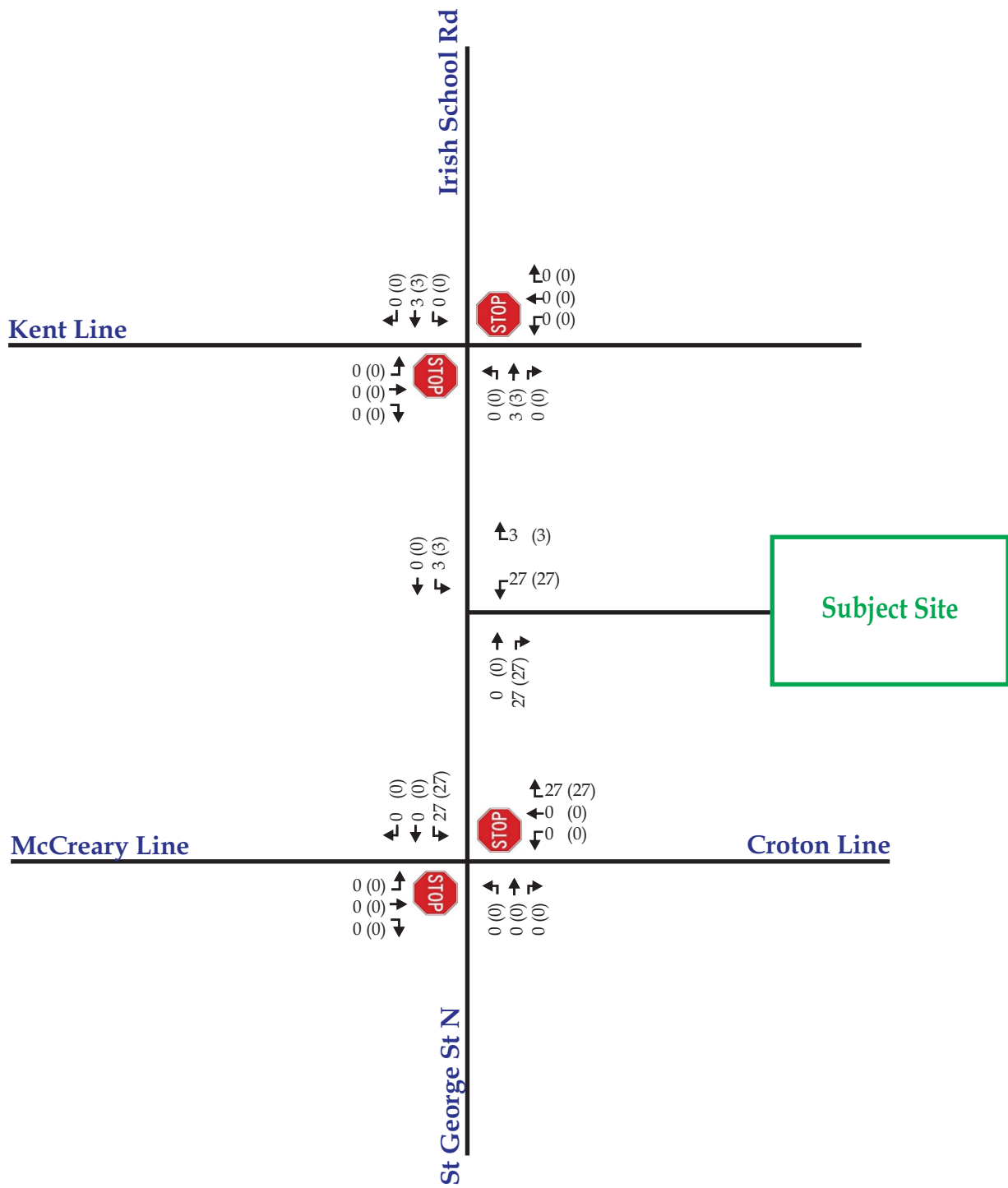
LEGEND:

- ★ Subject Site
- Inbound Truck Route
- ← Outbound Truck Route
- ## Number of inbound trucks
- ## Number of outbound trucks



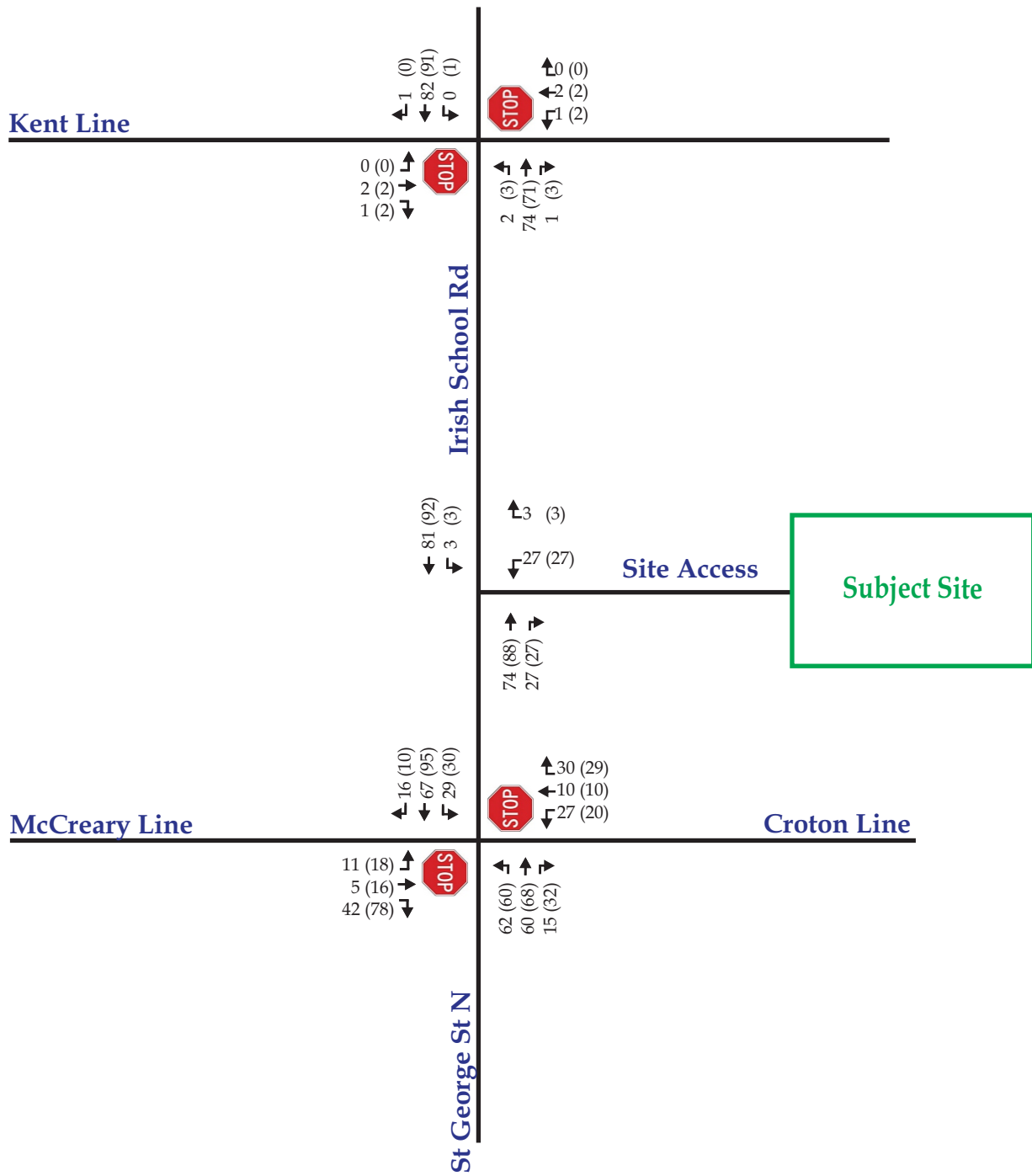
LEGEND	
## (##)	AM Peak Hour (PM Peak Hour)
	Existing Stop Sign
	Existing Signalized

Figure 6 - Existing (2024) Traffic Volumes



LEGEND	
## (##)	AM Peak Hour (PM Peak Hour)
	Existing Stop Sign
	Existing Signalized




Figure 7 - Site Traffic Volumes



LEGEND	
## (##)	AM Peak Hour (PM Peak Hour)
	Existing Stop Sign
	Existing Signalized

Figure 8 - Future Total Traffic Volumes

LEGEND




SYMBOL	DESCRIPTION
	Subject Site
	Available Sight Distance
	Required Intersection Sight Distance

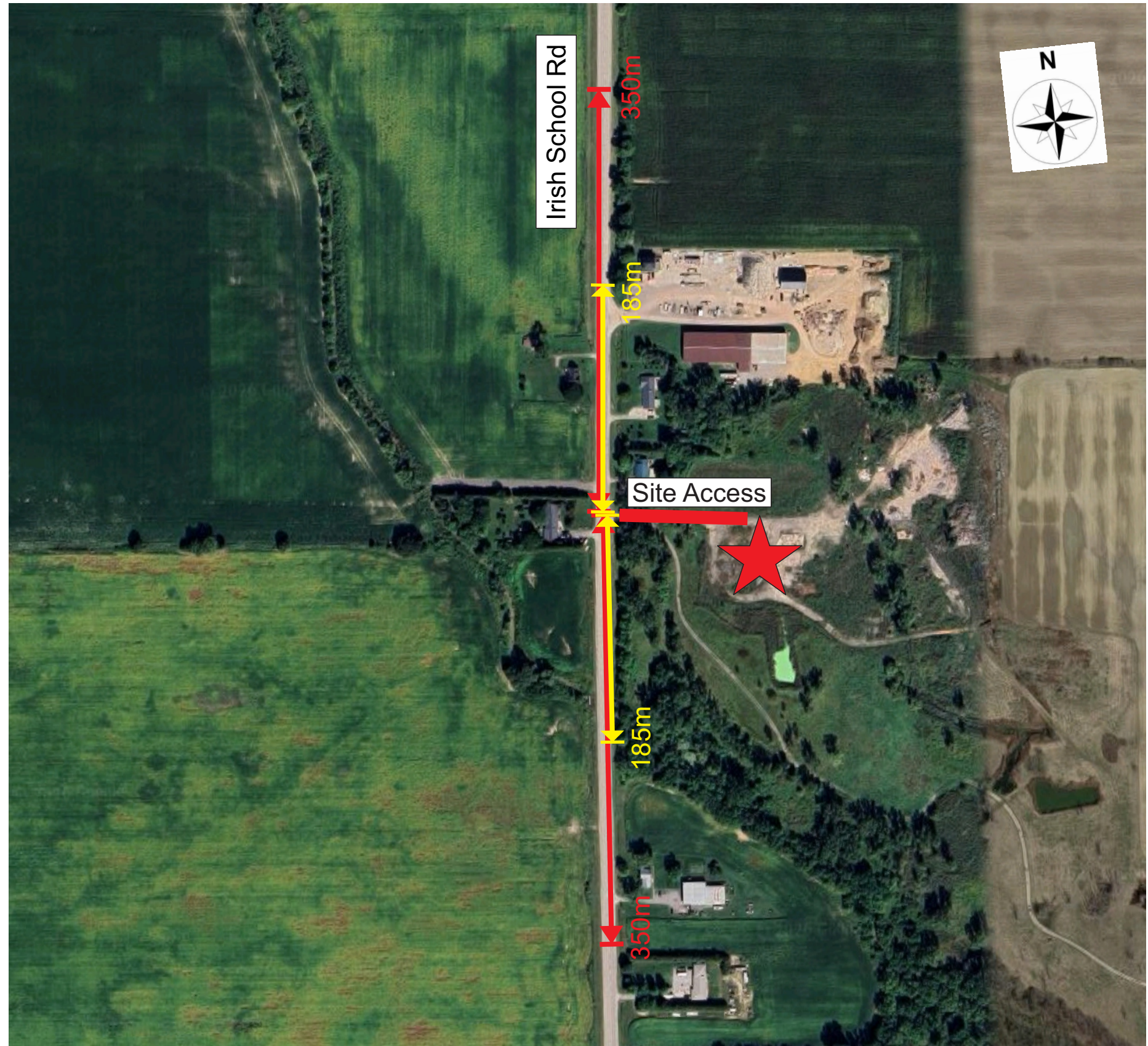


Project Name:
WASTE TRANSFER AND RECYCLING CENTRE
 29831 Irish School Rd, Town of Dresden, ON

Drawing Title: Intersection Sight Distance at Irish School Rd and Site Access	
Drawing No.: Figure 10	Date: February 2026
Project No.: UT-24-056	Drawn By: AS
Scale: NTS	Notes:

LEGEND

SYMBOL	DESCRIPTION
	Subject Site
	Available Sight Distance
	Required Stopping Sight Distance



Project Name:
WASTE TRANSFER AND RECYCLING CENTRE
 29831 Irish School Rd, Town of Dresden, ON

Drawing Title: Stopping Sight Distance at Irish School Rd and Site Access	
Drawing No.: Figure 11	Date: February 2026
Project No.: UT-24-056	Drawn By: AS
Scale: NTS	Notes:

**Figure 12 - Croton Line at George Street - Load Restriction Sign -
March 4, 2026**



**Figure 13 - Dawn Mills Rd at Base Line - Load Restriction Sign
- March 4, 2026**



Figure 14 - Windsor from/to Irish School Road (from March 1 to April 30 for axle weights >5,000 kg)



Figure 15 - Chatham-Kent from/to Irish School Road (from March 1 to April 30 for axle weights >5,000 kg)

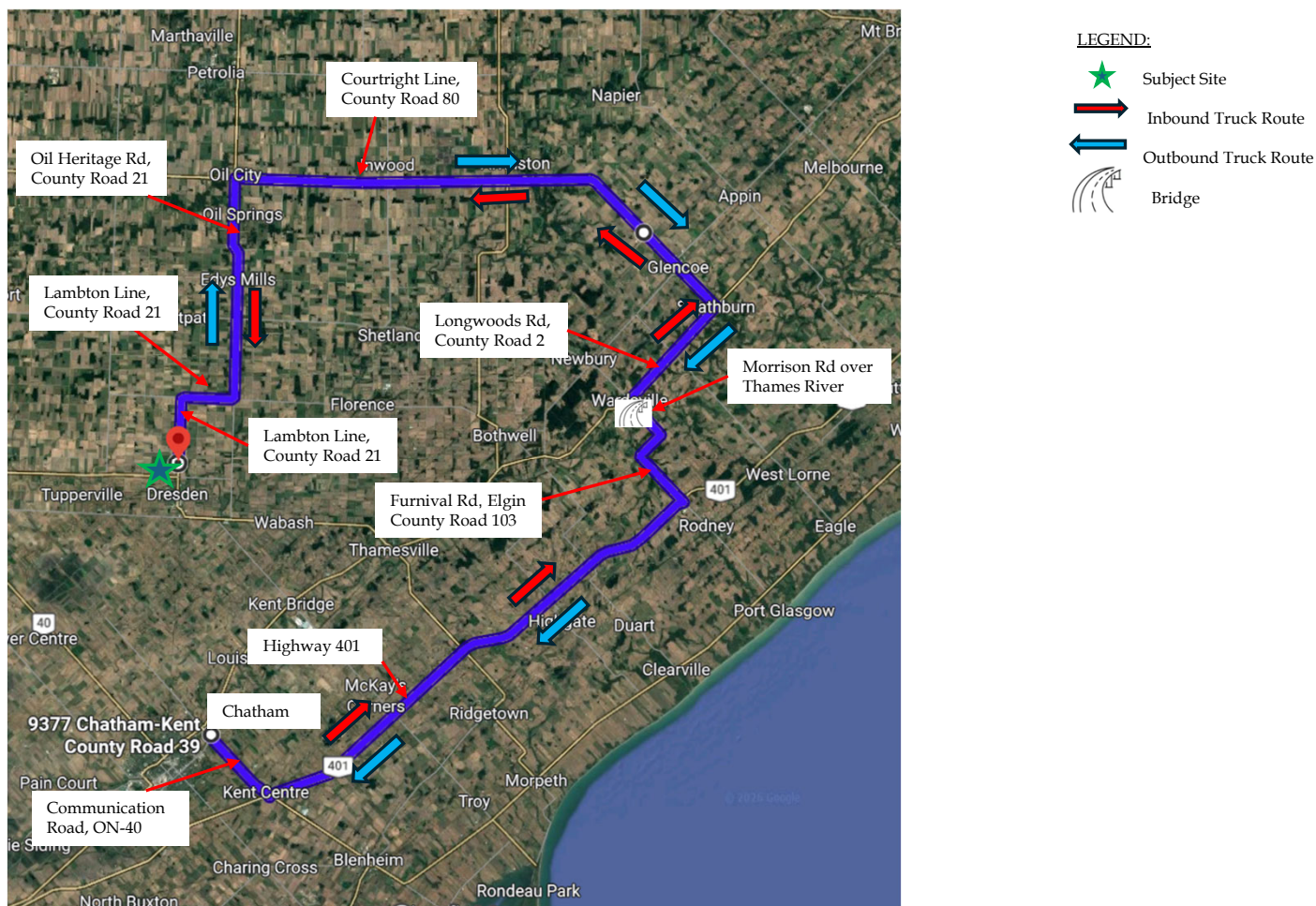
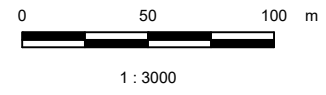
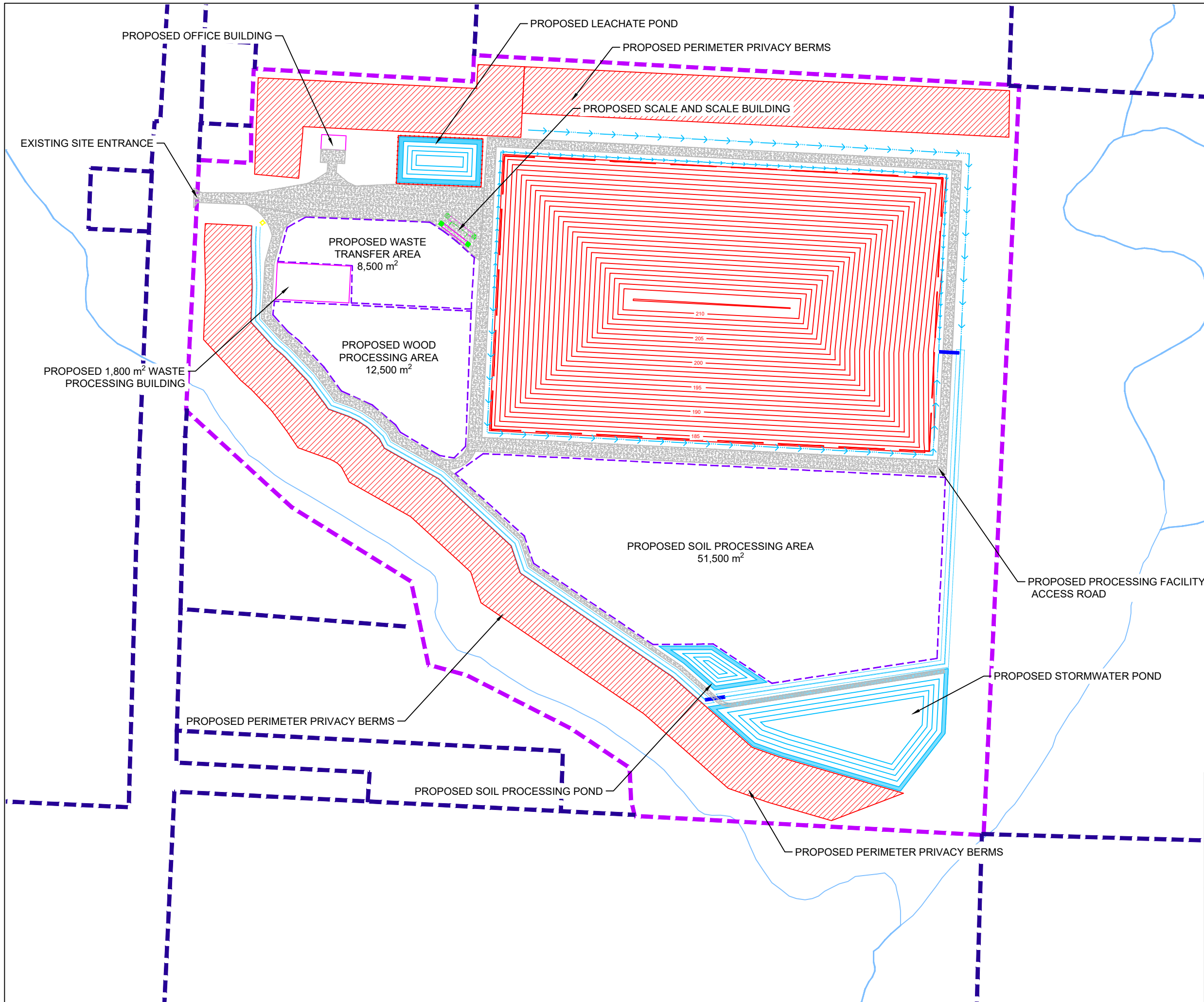


Figure 16 - London from/to Irish School Road (from March 1 to April 30 for axle weights >5,000 kg)



Appendix A
Revised Site Plan



SITE LAYOUT	
DRESDEN WASTE AND SOIL PROCESSING FACILITY 29831 IRISH SCHOOL ROAD, DRESDEN, ONTARIO	
	YORK1 ENVIRONMENTAL WASTE SOLUTIONS LTD. 5090 COMMERCE BLVD, SUITE 200 MISSISSAUGA, ONTARIO, L4W 5M4 CANADA

Appendix B

Traffic Projection Table

York1 Dresden - Regenerative Recycling Facility - Traffic Projections

Inbound Trucking Types and Volumes

Truck Type	Allowable Gross Weight	Truck Lengths	Material Type	Range of Tare Weight (mT)	Average Tare Weight (mT)	Maximum # Loads Per Day	Maximum Volume per Day (mT)	Maximum Material Volume per Day (mT)
Walking Floor	63,500 kg	20 metres	C&D Waste	34 to 38	36	36	1296	1496
Roll-Off Bin	27,500 kg (tandem) 36,000 kg (triauxle)	12.5 metres	C&D Waste	5 to 15	10	20	200	
Pony-Pup	63,000 kg	25 metres	Soil	40 to 44	42	22	924	1504
Trailer	53,500 kg (3 axle) 58,000 kg (4 axle)	18.5 Metres, 20 metres	Soil	36 to 40	38	10	380	
Triaxle	36,000 kg (triauxle)	12.5 metres	Soil	18 to 22	20	10	200	
Total per day						98	3000	3000




















Outbound Trucking Types and Volumes

Truck Type	Allowable Gross Weight	Truck Lengths	Material Type	Range of Tare Weight (mT)	Average Tare Weight (mT)	Maximum # Loads Per Day	Maximum Volume per Day (mT)	Maximum Material Volume per Day (mT)
Walking Floor	63,500 kg	20 metres	ALCF/Mulch/Chips	20 to 24	22	42	924	1500
Walking Floor	63,500 kg	21 metres	Waste to Landfill	34 to 38	36	16	576	
Pony-Pup	63,000 kg	25 metres	Recycled Aggregate	40 to 44	42	22	924	1504
Trailer	53,500 kg (3 axle) 58,000 kg (4 axle)	18.5 Metres, 20 metres	Recycled Aggregate	36 to 40	38	10	380	
Triaxle	36,000 kg (triauxle)	12.5 metres	Recycled Aggregate	18 to 22	20	10	200	
Total per day						100	3004	3004

















To/From Destinations	Expected Percentage of Trucks Per Route	Expected # of Trucks	Total # of Trucks Inbound/Outbound
From Dresden & Surrounding	10%	10	98
From Windsor	10%	10	
From Chatham	10%	10	
From Sarnia	10%	10	
From London and Beyond 401	10%	10	
From London and Beyond 402	50%	48	
To Windsor	10%	10	100
To Dresden & Surrounding	10%	10	
To Chatham	10%	10	
To Sarnia	10%	10	
To London and Beyond 401	10%	10	
To London and Beyond 402	50%	50	

Appendix C
Future Total Traffic Level of Service
Calculations










3: Irish School Rd & McCreary Line/Croton Line (County 29)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	5	42	27	10	30	62	60	15	29	67	16
Future Volume (Veh/h)	11	5	42	27	10	30	62	60	15	29	67	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	5	46	29	11	33	67	65	16	32	73	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	383	360	82	347	353	65	90			81		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383	360	82	347	353	65	90			81		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	95	95	98	97	96			98		
cM capacity (veh/h)	520	530	978	546	535	999	1505			1517		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1							
Volume Total	63	73	132	16	122							
Volume Left	12	29	67	0	32							
Volume Right	46	33	0	16	17							
cSH	1340	684	1505	1700	1517							
Volume to Capacity	0.05	0.11	0.04	0.01	0.02							
Queue Length 95th (m)	1.2	2.9	1.1	0.0	0.5							
Control Delay (s)	9.7	10.9	4.0	0.0	2.1							
Lane LOS	A	B	A		A							
Approach Delay (s)	9.7	10.9	3.5		2.1							
Approach LOS	A	B										
Intersection Summary												
Average Delay			5.4									
Intersection Capacity Utilization			30.0%		ICU Level of Service				A			
Analysis Period (min)			15									




















6: Irish School Rd & Kent Line/Kent Line

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	1	1	2	0	2	74	1	0	82	1
Future Volume (Veh/h)	0	2	1	1	2	0	2	74	1	0	82	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	1	1	2	0	2	80	1	0	89	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2			3			52	6	2	48	7	2
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2			3			52	6	2	48	7	2
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	91	100	100	90	100
cM capacity (veh/h)	1620			1619			873	888	1082	886	888	1082
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	3	3	83	90								
Volume Left	0	1	2	0								
Volume Right	1	0	1	1								
cSH	1620	1619	890	889								
Volume to Capacity	0.00	0.00	0.09	0.10								
Queue Length 95th (m)	0.0	0.0	2.5	2.7								
Control Delay (s)	0.0	2.4	9.5	9.5								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	2.4	9.5	9.5								
Approach LOS			A	A								
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			15.6%		ICU Level of Service				A			
Analysis Period (min)			15									

















10: Irish School Rd & Site Access

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	3	74	27	3	81
Future Volume (Veh/h)	27	3	74	27	3	81
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	3	80	29	3	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	188	94			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188	94			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	799	962			1481	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	32	109	91			
Volume Left	29	0	3			
Volume Right	3	29	0			
cSH	812	1700	1481			
Volume to Capacity	0.04	0.06	0.00			
Queue Length 95th (m)	1.0	0.0	0.0			
Control Delay (s)	9.6	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	9.6	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		16.7%		ICU Level of Service		A
Analysis Period (min)			15			










3: Irish School Rd & McCreary Line/Croton Line (County 29)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	16	78	20	10	29	60	68	32	30	95	10
Future Volume (Veh/h)	18	16	78	20	10	29	60	68	32	30	95	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	17	85	22	11	32	65	74	35	33	103	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	416	414	108	387	384	74	114			109		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	416	414	108	387	384	74	114			109		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	97	91	95	98	97	96			98		
cM capacity (veh/h)	495	494	945	481	514	988	1475			1481		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1							
Volume Total	122	65	139	35	147							
Volume Left	20	22	65	0	33							
Volume Right	85	32	0	35	11							
cSH	1357	653	1475	1700	1481							
Volume to Capacity	0.09	0.10	0.04	0.02	0.02							
Queue Length 95th (m)	2.4	2.6	1.1	0.0	0.5							
Control Delay (s)	10.3	11.1	3.7	0.0	1.8							
Lane LOS	B	B	A		A							
Approach Delay (s)	10.3	11.1	3.0		1.8							
Approach LOS	B	B										
Intersection Summary												
Average Delay			5.4									
Intersection Capacity Utilization			30.7%		ICU Level of Service				A			
Analysis Period (min)			15									

6: Irish School Rd & Kent Line/Kent Line

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	2	2	2	0	3	71	3	1	91	0
Future Volume (Veh/h)	0	2	2	2	2	0	3	71	3	1	91	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	2	2	2	0	3	77	3	1	99	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2			4			58	9	3	50	10	2
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2			4			58	9	3	50	10	2
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	91	100	100	89	100
cM capacity (veh/h)	1620			1618			857	885	1081	883	884	1082
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	4	83	100								
Volume Left	0	2	3	1								
Volume Right	2	0	3	0								
cSH	1620	1618	890	884								
Volume to Capacity	0.00	0.00	0.09	0.11								
Queue Length 95th (m)	0.0	0.0	2.5	3.1								
Control Delay (s)	0.0	3.6	9.5	9.6								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	3.6	9.5	9.6								
Approach LOS			A	A								
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			15.8%	ICU Level of Service		A						
Analysis Period (min)			15									

10: Irish School Rd & Site Access

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	3	88	27	3	92
Future Volume (Veh/h)	27	3	88	27	3	92
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	3	96	29	3	100
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	216	110			125	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	110			125	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	770	943			1462	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	32	125	103			
Volume Left	29	0	3			
Volume Right	3	29	0			
cSH	784	1700	1462			
Volume to Capacity	0.04	0.07	0.00			
Queue Length 95th (m)	1.0	0.0	0.0			
Control Delay (s)	9.8	0.0	0.2			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	0.2			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			17.3%	ICU Level of Service	A	
Analysis Period (min)			15			