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PROVIDING CONSULTING SERVICES IN:

MUNICIPAL ENGINEERING TRANSPORTATION PLANNING TRAFFIC & PARKING STUDIES ROADS & BRIDGES STRUCTURAL ENGINEERING DEVELOPMENT ENGINEERING SERVICES WATER RESOURCES ENVIRONMENTAL NOISE STUDIES LAND USE & ENVIRONMENTAL PLANNING

April 25th, 2025

Municipality of Port Hope Planning Division 5 Mill Street South Port Hope, ON L1A 2S6

Attn: Ms. Theodhora Merepeza Manager, Planning

Re: Traffic Impact Brief 4646 County Road 2 Proposed Residential Subdivision Municipality of Port Hope Our File No. W23089

Dear Ms. Merepeza:

This Traffic Impact Brief provides a summary of the traffic impacts of the proposed Residential Subdivision on the surrounding road network. The proposed Residential Subdivision that is immediately east of County Road 2 and approximately 50 metres south of County Road 74 (Dale Road) will replace a single detached home with thirteen (13) single detached lots, two (2) blocks for open space, a stormwater management pond and a local road (Street 'A') that connects with County Road 2 to form a T-intersection. The Location Plan is provided in **Figure 1** and the proposed Draft Plan of Subdivision is provided in **Figure 2**. From County Road 2, the local road will travel to the east before travelling to the south and terminating via cul-de-sac.

County Road 2 is an Arterial Road that is under the jurisdiction of Northumberland County. The roadway travels in the northwest direction before travelling in the west direction when it intersects County Roads 10 and 74. Within the vicinity of the proposed Residential Subdivision, the two (2) lane roadway comprises a rural cross-section and a posted speed limit of 60 km/h.

County Roads 10 and 74 are Arterial Roads that are under the jurisdiction of Northumberland County. Within the vicinity of the proposed Residential Subdivision, the two (2) lane roadways comprise of a rural cross-section and a posted speed limit of 60 km/h.



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County Road 10/County Road 74 at County Road 2 is an un-signalized intersection with stopcontrols at the northbound, southbound and westbound approaches. The lane configuration comprises a shared through-left and a channelized right turning lane at the northbound approach; a left, a through and a right turning lane at the eastbound approach; a shared left-through-right turning lane at the southbound approach; and a left and a shared through-right turning lane at the westbound approach. By 2025, a channelized right turning lane will be constructed for the southbound approach; the auxiliary left and right turning lanes will be removed for the eastbound approach; and the auxiliary left turning lane will be removed for the westbound approach¹.

In addition, improvements to the cycling and pedestrian networks that currently do not have any supporting infrastructure include:

- on-road bicycle lanes for both directions on County Road 2 and County Road 74,
- A series of pedestrian crossovers and pedestrian walkways that are continuous and provide access to the northwest, northeast and southeast corners of the County Road 10/County Road 74 at County Road 2 intersection.

A concept plan for the future improvements mentioned was provided in the Welcome Intersection Improvements Feasibility Study and is included in **Appendix A**.

The local road that is proposed by the Residential Subdivision will impact the proposed pedestrian walkway on the east side of County Road 2. Plans for integration can be provided in the detailed design stage.

The Public Information Center on April 14th, 2022 for the Welcome Intersection Improvements Feasibility Study for County Roads 2, 10 and 74 indicated that the Levels of Service will be acceptable for the County Road 10/County Road 74 at County Road 2 intersection under the scenario where auxiliary lanes are eliminated, which includes channelized right turning lanes. Since the future improvements are similar to the scenario analyzed, the findings of the analysis are still applicable; with operations that are anticipated to be better with the channelized right turning lanes provided to the northbound and southbound approaches.

For the single detached homes (Land Use 210) that are proposed by the Residential Subdivision, trip generation formulae from the ITE Trip Generation Manual 11th Edition were applied for the A.M. and P.M. Peak Hours².

¹ Welcome Intersection Improvements Feasibility Study, County Roads 2, 10 and 74, CIMA +, August 16th, 2024.

² Trip Generation Manual (11th Edition), Institute of Transportation Engineers, September 2021.



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Table 1 summarizes the trip generation formulae and the percentages of incoming and outgoing trips for the A.M. and P.M. Peak Hours.

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	A.M. Peak H	Iour		P.M. Peak Hour		
ITE Land Use	Fitted Curve Equation	% In	% Out	Fitted Curve Equation	% In	% Out
Single-Family Detached Housing	Ln(T) = 0.91 Ln(X) + 0.12 (Note 1)	26%	74%	Ln(T) = 0.94 Ln(X) + 0.27 (Note 1)	63%	37%
(LU 210)						

 Table 1: Trip Generation Formulae with Inbound and Outbound Percentages

Note 1: T represents the total number of trips and X represents the number of dwelling units.

The resulting number of trips generated was determined by the trip generation formulae provided in **Table 1** and the number of dwelling units. The proposed Residential Subdivision comprises 13 single detached lots.

The resulting number of trips generated is provided in **Table 2** for the A.M. and P.M. Peak Hours of adjacent street traffic.

Table 2: Site-Generated Trip	S
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Land Use	No. of	A.M. Peak Hour (Adj. Street)			P.M. Peak Hour (Adj. Street)		
	Units	Trips In	Trips Out	Total	Trips In	Trips Out	Total
Single-Family Detached Housing	13	3	9	12	9	6	15
(LU 210)							

The proposed Residential Subdivision is expected to generate a total of 12 trips during the A.M. Peak Hour (3 inbound trips and 9 outbound trips) and 15 trips during the P.M. Peak Hour (9 inbound trips and 6 outbound trips).

During the A.M. and P.M. Peak Hours, the number of trips generated by the proposed Residential Subdivision is considered to be minimal and will not impact the County Road 10/County Road 74 at County Road 2 intersection.



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The Street 'A' at County Road 2 intersection will operate as an un-signalized intersection with a stop-control at the westbound approach. The intersection is expected to operate at an acceptable Levels of Service during the A.M. and P.M. Peak Hours. The Street 'A' at County Road 2 intersection is in the same location as the driveway for the existing home within the Subject Property, which currently operates as an Art Gallery. Although there is an increase in the total number of trips generated by the proposed development versus the existing resident, based on the worst-case scenario, traffic impacts are considered low. Therefore, with regards to the intersections proximity to the County Road 10/County Road 74 at County Road 2 and County Road 2 at Guideboard Road intersections, impacts to traffic safety are not anticipated.

A Preliminary Road Plan was prepared to analyze the internal traffic circulation for waste collection, fire emergency and snow removal vehicles using AutoTURN software.

For waste collection vehicles, they may have to move backwards for a short distance while within the cul-de-sac to change directions. Otherwise, the vehicle will move forward for the entirety of its path. The swept path plan for waste collection vehicles is provided in **Figure 3**.

Fire emergency and snow removal vehicles will be able to use the cul-de-sac to move forward for the entirety of its path when servicing the proposed Residential Subdivision. The swept path plan for fire emergency vehicles is provided in **Figure 4** and the swept path plan for snow removal vehicles is provided in **Figure 5**.



Page 5 April 25th, 2025 Attn: Ms. Theodhora Merepeza Manager, Planning **Re: Traffic Impact Brief**

4646 County Road 2 Proposed Residential Subdivision Municipality of Port Hope Our File No. W23089

We trust that this letter is satisfactory. However, if you have any questions or concerns or if we may be of further assistance, please do not hesitate to call us.

Yours truly,

CANDEVCON GROUP INC.



Brian Wong, P. Eng. Intermediate Transportation Engineer

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David Lee, P. Eng. Project Manager

Attachments: Figure 1 - Location Plan,

Figure 2 – Proposed Draft Plan of Subdivision,

- Figure 3 Waste Collection Swept Path Plan,
- Figure 4 Fire Emergency Swept Path Plan,
- Figure 5 Snow Removal Swept Path Plan,

Appendix A – Relevant Excerpts to the Welcome Intersection Improvements Feasibility Study FOR County Roads 2, 10 and 74.



DALE ROAD (No. 74)



MUNICIPALITY OF PORT HOPE

PROPOSED DRAFT PLAN OF SUBDIVISION

	SDS 9358 GOREWA	CANDEVCON CONSULTING ENGINE	I GROUP INC. ERS AND PLANNERS TEL (905) 794-0600
53	DATE:	AR. 10th 2025	FAX (905) 794-0611 JOB No. W23089
	DESIGN:	B.W.	FIG. No.
	SCALE:	1:2000	2



CANDEVCON GROUP INC. COSULTING ENGINEERS AND PLANNERS				
BRAMPTON ON. L6P-	11th 2025	JOB No. W23089		
DESIGN:	B.W.	FIG. No.		
SCALE:	1:2000			



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DATE: MAR.	11th 2025	^{JOB No.} W23089	
DESIGN:	B.W.	FIG. No.	
SCALE:	1:2000	4	



_		CANDEVCON CONSULTING ENGINE	I GROUP INC. ERS AND PLANNERS
	BRAMPTON ON.	L6P-0M7	FAX (905) 794-0600 FAX (905) 794-0611
	DATE: MAI	R. 11th 2025	^{JOB No.} W23089
	DESIGN:	B.W.	FIG. No.
	SCALE:	1:2000	5

APPENDIX A

RELEVANT EXCERPTS TO THE WELCOME INTERSECTION IMPROVEMENTS FEASIBILITY STUDY FOR COUNTY ROADS 2, 10 AND 24



Figure 7: 3-Way Stop Reconstruction Option