

February 10<sup>th</sup>, 2023

Corporation of the Town of Erin  
5684 Trafalgar Rd.  
Hillsburgh, ON  
N0B 1Z0

Attn: Ms. Tanjot Bal, Senior Planner

**Re: Response to 2<sup>nd</sup> Submission Comments  
Traffic Impact Study Updated July 28<sup>th</sup>, 2022  
Hillsburgh Heights Inc.  
Proposed Residential Subdivision  
5916 Trafalgar Road North  
Town of Erin  
Town File No. 23T-21002, OP21-01 & Z21-09  
Our File No. W21081**

Dear Ms. Bal:

The Town of Erin, Ainley & Associates Limited and Dillon Consulting have provided comments to the Traffic Impact Study Update that is dated July 28<sup>th</sup>, 2022. Comments from the Town of Erin were provided in a letter dated November 1<sup>st</sup>, 2022, comments from Ainley & Associates Limited were provided in a comment matrix and comments from Dillon Consulting were provided in a memorandum dated December 16<sup>th</sup>, 2022, which are attached herein.

This letter provides a response to the comments provided.

### **Comments from the Town of Erin**

#### **Comment 1**

*It's not explicitly clear from the Traffic Impact Study that the future background study included all the planned subdivisions in the Hillsburgh Urban Area. The Town of Erin is in a unique position of having the majority of its future growth already known and forecasted by the Town. Therefore, all identified subdivision growth within the Erin Urban Area should be utilized in the formulation of the Traffic Impact Study findings.*

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**Response**

Apart from the anticipated background developments that were included in the Traffic Impact Study Update, there are no further anticipated background developments within the Hillsburgh Urban Area.<sup>1</sup>

**Comment 2**

*Staff would like to include the evaluation of a traffic signal at Trafalgar Road and Howe Street, as the Traffic Impact Study does not appear to consider the accommodation of the requested school site on the subject lands, or the desire for the community on the east side of Trafalgar to access the school lands or their desire to cross Trafalgar to access parkland or other.*

**Response**

Using the Future (2031) Total Traffic Volumes that were revised in this Response Letter, the signal warrant analysis indicates that the Proposed Street 'A'/Howe Street at Trafalgar Road North intersection does not warrant traffic signals for the 2031 horizon year.

The analysis followed the procedures specified in Book 12 Justification 7 in the Ontario Traffic Manual and is provided in **Appendix A**.<sup>2</sup>

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<sup>1</sup> Current Development Applications, Town of Erin, Site Visited on December 21, 2022,  
<https://www.erin.ca/living-here/home-and-property/planning/current-development-applications>

Active Applications, Wellington County, Site Visited on December 21, 2022,  
<https://www.wellington.ca/en/resident-services/pl-active-applications.aspx>

<sup>2</sup> Ontario Traffic Manual Book 12 – Traffic Signals, Ministry of Transportation Ontario, March 2012.

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As discussed at our meeting on January 11<sup>th</sup>, 2023, if the School Board decides to construct a school at Block 2 of the Draft Plan, a conventional intersection will be provided.

**Comments from Ainley & Associates Limited**

**Comment 1**

***1<sup>st</sup> Submission Comment***

*Based on the 2031 PM total traffic volumes and MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, a 25 m northbound left turn lane on Trafalgar Road North at Street 'E' is warranted.*

***2<sup>nd</sup> Submission Comment***

*Partially done, the LT turn warrant shows a 25m length requirement, but only provides 15m.*

**Response**

For the Trafalgar Road North at proposed Street 'E' and proposed Street 'A'/Howe Street at Trafalgar Road North intersections, although the left-turn lane warrant analysis warrants a left turning lane with 25 metres of storage at the northbound approach during the P.M. Peak Hour for the 2026 horizon year, since the Future (2031) Total Traffic Analysis indicates that the queue length for the turning lanes does not exceed 15 metres, we find that a storage length of 15 metres is appropriate.

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**Comment 2**

*1<sup>st</sup> Submission Comment*

*The Street 'A'-Street 'B'/Street 'G' Intersection should operate with a reasonable level of service under stop sign control on Street 'B' and Street 'G'. A roundabout is usually considered where a traffic signal is required. In addition, a stop sign controlled intersection is easier for pedestrians to cross, especially with the proximity to a school (proposed to be located at the northwest quadrant of the intersection).*

*2<sup>nd</sup> Submission Comment*

*The documentation provided does not address our concerns for pedestrians, particularly young children, given that it is directly adjacent to the proposed school site.*

**Response**

As discussed at our subsequent meeting with the Town, if the School Board confirms their intention to acquire the School block, the intersection will be changes to a regular intersection with stop controls.

**Comment 3**

*1<sup>st</sup> Submission Comment*

*Signalized pedestrian crossings should be considered near the school for crossing Street 'A' and for crossing Trafalgar Road North at the Street 'A/Howe Street Intersection.*

*2<sup>nd</sup> Submission Comment*

*Comment to be carried forward for follow-up during detailed design.*

**Response**

This comment has been noted.

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**Comment 4**

*1<sup>st</sup> Submission Comment*

*The TIS should discuss sight line distances at the proposed Street 'A'-Trafalgar Road North Intersection, and at the Street 'E'- Trafalgar Road North Intersection. The discussion should reference the required sight line distance for stop-sign controlled intersections based on TAC design standards. This can be addressed during the detail design phase.*

*2<sup>nd</sup> Submission Comment*

*Done, but table should be for design speed of 70km/hr which requires 135m not 113m, but more than 200m is available so it is okay.*

**Response**

This comment has been noted. The sight distance analysis has been revised accordingly and is provided in this Letter.

**Comments from Dillon Consulting**

**Comment 1**

*The revised study is difficult to read and to follow.*

**Response**

This comment has been noted.

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**Comment 2**

*The draft subdivision plan has been updated and a portion of lands that were previously identified as residential in the initial subdivision plan are now assumed to be commercial and have been indicated as a background development, without detailed analysis being undertaken. The TIA should include an analysis of the final buildout conditions at the end of the final phase.*

**Response**

As directed by the Town at the meeting on January 11<sup>th</sup> 2023, the lands that are immediately north of the Subject Subdivision and that are owned by the applicant will no longer be considered as an anticipated background development in this TIS. As a result, for the trips generated during the 2031 horizon year by the elementary school that is proposed by the Subject Subdivision, trips that originated from and that were destined to the lands immediately north of the Subject Subdivision are no longer applicable. Therefore, the trip assignment for the proposed Elementary School for the 2026 horizon year (year of full build-out for the Subject Subdivision) will also be applied to the 2031 horizon year. To reflect this change, **Figures 24, 25, 28 and 29** in the Traffic Impact Study Update have been revised and are attached.

**Comment 3**

*The revised report assumes that a commercial driveway access to Wellington Road 24 (Trafalgar Road) will be established. It should be noted that this driveway may or may not be permitted by Wellington County, nor has this potential commercial driveway been proposed or discussed previously.*

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**Response**

This comment has been noted. As directed by the Town at the meeting on January 11<sup>th</sup> 2023, the commercial block will no longer be considered as a part of an anticipated background development in this TIS. In the future, this will be submitted a separate development application at that time.

**Comment 4**

*The report does not provide specific rationale why a road connection to McMurchy Lane cannot be implemented rather than introducing a new (Street 'E') connection to Wellington Road 24.*

**Response**

As discussed at our meeting on January 11<sup>th</sup> 2023 and as mentioned in the Traffic Impact Study Update and in the Response to Peer Review Comments Letter, a road connection with McMurchy Lane is not feasible due to constraints in grading. A SWM pond is also proposed at this location. To provide a better understanding of the constraints due to grading, the Preliminary Grading Plan (Drawing GR-1) provides the existing surface elevations on McMurchy Lane and within the subdivision.

**Comment 5**

*The report and subsequent analyses appears to underestimate the amount of traffic generated by the subject subdivision and the background developments that would travel to/from the north on Wellington Road 24 outside of Hillsburgh.*

**Response**

The trip assignment for the anticipated background developments owned by Carson Reid Homes Ltd (**Figures 6 and 7**), Thomasfield Homes Ltd (**Figures 8 and 9**), Tavares (**Figures 10 and 11**), and Chantler (**Figures 12 and 13**) were revised accordingly and are attached.

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**Comment 6**

*An 80% internal capture rate was applied to the future commercial lands while a 50% internal capture rate was applied to the proposed elementary school (institutional land uses). These rates are very unlikely to be this high as the commercial site would not likely absorb most of the subject residential trips, especially considering that the residential lands are generally within easy walking distance to the commercial site.*

- *For the commercial component within the subdivision, appropriate trip generation rates, pass by rates and internal capture rates should be applied and calculated and assigned separately from the residential and institutional land uses (considering a reasonable interaction between land uses).*
- *The number of trips generated by the proposed elementary school should also be calculated separate from the residential and commercial land uses.*

**Response**

The lands that are immediately north of the Subject Subdivision, that are owned by the applicant and that includes the future commercial land uses mentioned in this comment will no longer be considered as an anticipated background development.

In the Traffic Impact Study Update, the catchment area for the proposed Elementary School was assumed to be bounded by Erin-Garafraxa Townline to the north, Winston Churchill Boulevard to the east, George Street to the south and Fourth Line to the west. After reviewing the residential land use within the attendance area, we find that the capture rate of 47% that was assumed is appropriate. The boundaries of the attendance area and the residential land uses within the attendance area are illustrated in **Figure A**.

For the Elementary School Block and the residential land uses within the Subject Subdivision, the trip generation calculations and figures illustrating the assumed trip assignment were provided separately in the Traffic Impact Study Update.

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The Future (2026 & 2031) Total Traffic Volumes (**Figures 32, 33, 36 and 37**) were updated to account for the revised trip assignment for the anticipated background developments (**Figures 6 and 13**), the removal of the anticipated background development that was immediately north of the Subject Subdivision and the reassignment of the trips generated by the elementary school within the Subject Subdivision for the 2031 horizon year (**Figures 24 and 25**).

**Comment 7**

*The required design speed of 70 km/h (posted 40 km/h + 30 km/h) that was required to be utilized for the sight distance assessment was not considered in the subsequent analyses.*

**Response**

The findings of the sight distance analysis were revised and are provided in **Table 1**.

**Table 1: The Required and Provided Sight Distances**

Departing From	Turning Movement	Sight Distance Required	Sight Distance Provided	
			Vertical	Horizontal
Street 'A'	EBL	156m	220m	>300m
	EBT	137m	220m	>300m
	EBR	126m	240m	>300m
Street 'E'	EBL	156m	>300m	>300m
	EBR	126m	220m	>300m

Note: The design speed for Trafalgar Road North is 70 km/h.

Based on the results of the analysis, the sight distances provided exceed the sight distances required.

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**Comment 8**

*Given the vertical profile of Wellington Road 24 fronting the subject subdivision, northbound left turn lanes and southbound right turn lanes are recommended to be constructed at each proposed intersection, noting the specific storage lengths, parallel lengths and tapers of these turn lanes will need to be determined based on a 70 km/h design speed, requirements found within TAC's Geometric Design Guidelines as well as based on findings from the future traffic capacity analysis.*

**Response**

The Future (2026) Total Traffic and Future (2031) Total Traffic Analyses that was updated in this letter indicates that a left-turning lane at the northbound approach is warranted for the Trafalgar Road North at Howe Street/proposed Street 'A' and Trafalgar Road North at proposed Street 'E' intersections. Although the results of the right-turn lane warrant analysis indicate that a right turning lane at the southbound approach for the concerned intersections is not warranted for the 2026 and 2031 horizon years, to minimize the impact on vehicles making a through movement on Trafalgar Road North from vehicles on Trafalgar Road North that are decelerating to make a right-turn, a right-turn taper with a recovery taper will be provided.

The design of the left turning lanes and right-turn tapers will be provided at the detailed design stage.

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**Comment 9**

*As a result, this second TIS submission is recommended not to be accepted and a subsequent traffic addendum should be prepared and submitted. The future submission should provide an analysis for each buildout phase of the development, and consider each individual land use (residential, commercial and institutional) separately. Each of the different land uses should have different trip generation rates, assignments, and distributions. Internal capture rates and pass-by rates for some of the proposed land uses should also be included, at reasonable rates.*

**Response**

Phasing of the proposed Residential Subdivision is not anticipated. The 2026 and 2031 horizon years for the Traffic Impact Study Update and for this letter represent the year of full build-out and five (5) years post. Trip generation calculations, trip distributions and trip assignments for the residential and institutional land uses proposed by the Subject Subdivision have been provided separately in the Traffic Impact Study Update. In addition, the rationale for the internal capture rate applied to the proposed elementary school has been provided with more detail in this Response Letter.

For the Future (2026) Total Traffic Volumes provided in **Figures 32 and 33**, the LOS was analyzed using SYNCHRO 9.0 software<sup>3</sup>.

Proposed Street 'A'/Howe Street at Trafalgar Road North was analyzed as an un-signalized intersection with stop-controls at the eastbound and westbound approaches. The lane configuration used in the analysis comprises a shared left-through-right turning lane at all approaches.

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<sup>3</sup> Synchro 9 Traffic Signal Optimization and Simulation Modeling Software, Version 9, Trafficware Corporation, 2014.

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Proposed Street ‘E’ at Trafalgar Road North was analyzed as an un-signalized intersection with a stop-control at the eastbound approach. The lane configuration used in the analysis comprises a shared through-left turning lane at the northbound approach; a shared left-right turning lane at the eastbound approach; and a shared through-right turning lane at the southbound approach.

The results of the analysis are summarized in **Table 2** and the related calculations are provided in **Appendix B**.

**Table 2: Future (2026) Total Traffic – Level of Service**

Intersection	Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay <sup>1</sup>	95th Queue (m)	V/C	LOS	Delay <sup>1</sup>	95th Queue (m)
Trafalgar Road North at Howe Street/ Proposed Street ‘A’ (Un-signalized)	<b>Overall</b>	<b>0.29</b>	<b>A</b>	<b>4.9</b>	<b>n/a</b>	<b>0.14</b>	<b>A</b>	<b>2.5</b>	<b>n/a</b>
	EB Approach	0.29	B	12.0	9.8	0.14	B	13.6	3.9
	WB Approach	0.09	C	15.4	2.3	0.03	D	29.6	0.7
	NB Approach	0.06	A	2.6	1.6	0.09	A	2.4	2.4
	SB Approach	0.00	A	0.1	0.1	0.01	A	0.2	0.2
Trafalgar Road North at Proposed Street ‘E’ (Un-signalized)	<b>Overall</b>	<b>0.28</b>	<b>A</b>	<b>2.0</b>	<b>n/a</b>	<b>0.15</b>	<b>A</b>	<b>2.2</b>	<b>n/a</b>
	EB Approach	0.20	B	13.2	5.9	0.15	B	13.7	4.1
	NB Approach	0.03	A	1.1	0.7	0.09	A	2.3	2.5
	SB Approach	0.28	A	0.0	0.0	0.24	A	0.0	0.0

*Note 1: Delays are measured in seconds per vehicle.*

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**Trafalgar Road North at Howe Street/proposed Street ‘A’**

The analysis of the Future (2026) Total Traffic Conditions indicates that the un-signalized intersection will operate at a Level of Service “A” during the A.M. and P.M. Peak Hours.

All of the turning movements will operate at a Level of Service “C” or better during the A.M. Peak Hour and at a Level of Service “D” or better during the P.M. Peak Hour.

**Trafalgar Road North at proposed Street ‘E’**

The analysis of the Future (2026) Total Traffic Conditions indicates that the un-signalized intersection will operate at a Level of Service “A” during the A.M. and P.M. Peak Hours.

During the A.M. and P.M. Peak Hours, all of the turning movements will operate at a Level of Service “B” or better.

For the southbound right turning movements at the Trafalgar Road North at Howe Street/proposed Street ‘A’ and Trafalgar Road North at proposed Street ‘E’ intersections, a right-turn lane warrant analysis was conducted using the principles provided in the Ministry of Transportation Ontario’s Geometric Design Standards for Ontario Highways<sup>4</sup>. Based on the procedure to the right-turn lane warrant analysis, a right-turning lane should be considered when traffic volumes are 60 vehicles per hour or higher. With the southbound right turning movements at the concerned intersections operating with 12 vehicles per hour or less, right turning lanes are not warranted.

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<sup>4</sup> Geometric Design Standards for Ontario Highways, Ministry of Transportation Ontario.

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For the northbound left turning movement at the Trafalgar Road North at Howe Street/proposed Street 'A' and Trafalgar Road North at proposed Street 'E' intersections, the left-turn lane warrant analysis that is illustrated in **Figures 34 and 35** was updated to reflect the revised volumes for the Future (2026) Total Traffic Scenario. The analysis followed the procedure specified in the Ministry of Transportation Ontario's Geometric Design Standards for Ontario Highways.

For the Trafalgar Road North at Howe Street/proposed Street 'A' intersection, the analysis determined that a left-turning lane at the northbound approach is warranted during the A.M. and P.M. Peak Hours. To balance the intersection, a left turning lane at the southbound approach will be recommended.

For the Trafalgar Road North at proposed Street 'E' intersection, the analysis determined that a left-turning lane at the northbound approach is warranted during the P.M. Peak Hour.

Based on the findings of the left-turn lane warrant analysis, the following improvements are recommended for the concerned intersections:

**Proposed Street 'A'/Howe Street at Trafalgar Road North**

- Include a left turning lane at the northbound and southbound approaches with 15 metres of storage.

**Proposed Street 'E' at Trafalgar Road North**

- Include a left turning lane at the northbound approach with 15 metres of storage.

The traffic conditions with the recommended improvements are summarized in **Table 3** and the related calculations are provided in **Appendix B**.

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**Table 3: Future (2026) Total Traffic – Level of Service – with Improvements**

Intersection	Turning Lane /Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay <sup>1</sup>	95th Queue (m)	V/C	LOS	Delay <sup>1</sup>	95th Queue (m)
Trafalgar Road North at Howe Street/ Proposed Street 'A' (Un-signalized)	<b>Overall</b>	<b>0.29</b>	<b>A</b>	<b>4.7</b>	<b>n/a</b>	<b>0.28</b>	<b>A</b>	<b>2.0</b>	<b>n/a</b>
	EB Approach	0.29	B	12.0	9.8	0.14	B	13.6	3.9
	WB Approach	0.09	C	15.4	2.3	0.03	D	29.4	0.6
	NBL	0.06	A	7.9	1.6	0.09	A	8.3	2.4
	NB TR	0.13	A	0.0	0.0	0.28	A	0.0	0.0
	SBL	0.00	A	7.7	0.1	0.01	A	8.3	0.2
	SB TR	0.14	A	0.0	0.0	0.21	A	0.0	0.0
Trafalgar Road North at Proposed Street 'E' (Un-signalized)	<b>Overall</b>	<b>0.28</b>	<b>A</b>	<b>1.9</b>	<b>n/a</b>	<b>0.35</b>	<b>A</b>	<b>1.6</b>	<b>n/a</b>
	EB Approach	0.20	B	13.2	5.9	0.15	B	13.7	4.1
	NBL	0.03	A	8.4	0.7	0.09	A	8.5	2.5
	NBT	0.18	A	0.0	0.0	0.35	A	0.0	0.0
	SB Approach	0.28	A	0.0	0.0	0.24	A	0.0	0.0

*Note 1: Delays are measured in seconds per vehicle.*

The Trafalgar Road North at Howe Street/proposed Street 'A' intersection operates at a Level of Service "A" during the A.M. and P.M. Peak Hours. All of the turning movements will operate at a Level of Service "C" or better during the A.M. Peak Hour and a Level of Service "D" or better during the P.M. Peak Hour.

The Trafalgar Road North at proposed Street 'E' intersection operates at a Level of Service "A" during the A.M. and P.M. Peak Hours. All of the turning movements will operate at a Level of Service "B" or better during the A.M. and P.M. Peak Hours.

For the Future (2031) Total Traffic Volumes provided in **Figures 36 and 37**, the LOS was analyzed using SYNCHRO 9.0 software.

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The lane configurations recommended in the Future (2026) Total Traffic Scenario will be used for the Future (2031) Total Traffic Analysis.

The results of the analysis are summarized in **Table 4** and the related calculations are provided in **Appendix B**.

**Table 4: Future (2031) Total Traffic – Level of Service**

Intersection	Turning Lane /Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay <sup>1</sup>	95th Queue (m)	V/C	LOS	Delay <sup>1</sup>	95th Queue (m)
Trafalgar Road North at Howe Street/ Proposed Street 'A' (Un-signalized)	<b>Overall</b>	<b>0.30</b>	<b>A</b>	<b>4.6</b>	<b>n/a</b>	<b>0.31</b>	<b>A</b>	<b>1.9</b>	<b>n/a</b>
	EB Approach	0.30	B	12.3	10.3	0.15	B	14.3	4.3
	WB Approach	0.09	C	16.1	2.4	0.03	D	32.9	0.7
	NBL	0.06	A	8.0	1.6	0.09	A	8.4	2.5
	NB TR	0.14	A	0.0	0.0	0.31	A	0.0	0.0
	SBL	0.00	A	7.7	0.1	0.01	A	8.5	0.2
	SB TR	0.16	A	0.0	0.0	0.23	A	0.0	0.0
Trafalgar Road North at Proposed Street 'E' (Un-signalized)	<b>Overall</b>	<b>0.29</b>	<b>A</b>	<b>1.8</b>	<b>n/a</b>	<b>0.38</b>	<b>A</b>	<b>1.5</b>	<b>n/a</b>
	EB Approach	0.21	B	13.6	6.2	0.16	B	14.4	4.4
	NBL	0.03	A	8.5	0.7	0.10	A	8.6	2.5
	NBT	0.20	A	0.0	0.0	0.38	A	0.0	0.0
	SB Approach	0.29	A	0.0	0.0	0.26	A	0.0	0.0

*Note 1: Delays are measured in seconds per vehicle.*

The Trafalgar Road North at Howe Street/proposed Street 'A' intersection will continue to operate at a Level of Service "A" during the A.M. and P.M. Peak Hours. All of the turning movements will continue to operate at a Level of Service "C" or better during the A.M. Peak Hour and a Level of Service "D" or better during the P.M. Peak Hour.

Page 17  
February 10<sup>th</sup>, 2023

Attn: Ms. Tanjot Bal, Senior Planner

**Re: Response to 2<sup>nd</sup> Submission Comments  
Traffic Impact Study Updated July 28<sup>th</sup>, 2022  
Proposed Residential Subdivision  
5916 Trafalgar Road North  
Town of Erin  
Town File No. 23T-21002, OP21-01 & Z21-09  
Our File No. W21081**

The Trafalgar Road North at proposed Street 'E' intersection will continue to operate at a Level of Service "A" during the A.M. and P.M. Peak Hours. All of the turning movements will continue to operate at a Level of Service "B" or better during the A.M. and P.M. Peak Hours.

For the southbound right turning movements at the Trafalgar Road North at Howe Street/proposed Street 'A' and Trafalgar Road North at proposed Street 'E' intersections, since an increase in volume is not anticipated for the 2031 horizon year, a right-turning lane is not warranted.

Since the turning movements at the concerned intersection operate at acceptable Levels of Service, there are no recommendations for the 2031 horizon year.

#### **Comment 10**

*The subsequent submission should be limited to the future proposed intersections along the Wellington Road 24 corridor that service and directly connect to future roads within the subdivision, in order to confirm the required lane geometry and traffic control at these future (proposed) intersections.*

#### **Response**

This letter has provided a Future (2026) Total Traffic and Future (2031) Total Traffic analyses for the Trafalgar Road North at Howe Street/proposed Street 'A' and Trafalgar Road North at proposed Street 'E' intersections. Based on the results of the analyses, recommended improvements to the lane configuration were provided for the 2026 horizon year.

Page 18  
February 10<sup>th</sup>, 2023

Attn: Ms. Tanjot Bal, Senior Planner

**Re: Response to 2<sup>nd</sup> Submission Comments  
Traffic Impact Study Updated July 28<sup>th</sup>, 2022  
Proposed Residential Subdivision  
5916 Trafalgar Road North  
Town of Erin  
Town File No. 23T-21002, OP21-01 & Z21-09  
Our File No. W21081**

We trust that this Letter addresses all of the comments to the Traffic Impact Study Update dated July 28<sup>th</sup> 2022 for the proposed Residential Subdivision. If you have any questions on the above please advise.

Yours truly,

**CANDEVCON LIMITED**



**Brian Wong, P. Eng.**  
**Intermediate Transportation Engineer**



**David Lee, P. Eng.**  
**Project Manager**

Attachments: Figures 6 to 13 – Trip Assignment of the Anticipated Background Developments,  
Figures 24 and 25 – Trip Assignment of the proposed Elementary School within the Subject Subdivision,  
Figures 28 and 29 – Trip Assignment of the Subject Subdivision,  
Figures 32, 33, 36 and 37 – Future (2026 & 2031) Total Traffic Volumes,  
Figures 34 and 35 – Future (2026) Total Traffic – Left-Turn Lane Warrant Analysis,  
Figure A – Boundaries of the Assumed Attendance Area for the Proposed Elementary School,  
Appendix A – Signal Warrant Analysis,  
Appendix B – Synchro Reports,  
Letter dated November 1<sup>st</sup>, 2022 that was prepared by the Town of Erin,  
Comments Matrix prepared by Ainley & Associates Limited,  
Memorandum dated December 16<sup>th</sup>, 2022 that was prepared by Dillon Consulting,  
Drawing GR-1 – Preliminary Grading Plan.

**Trip Assignment of Anticipated Development (Carson Reid Homes Ltd)  
A.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

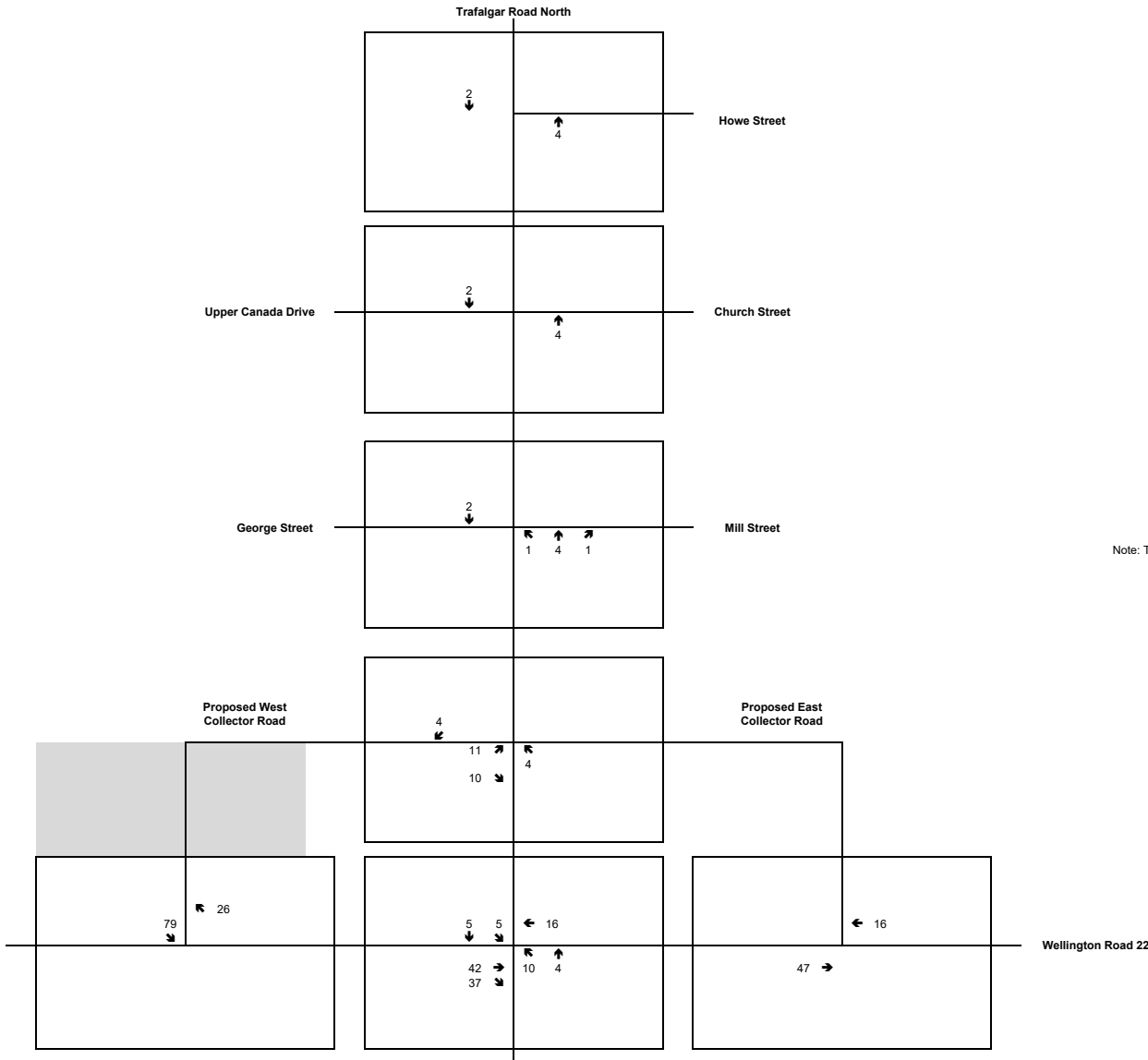
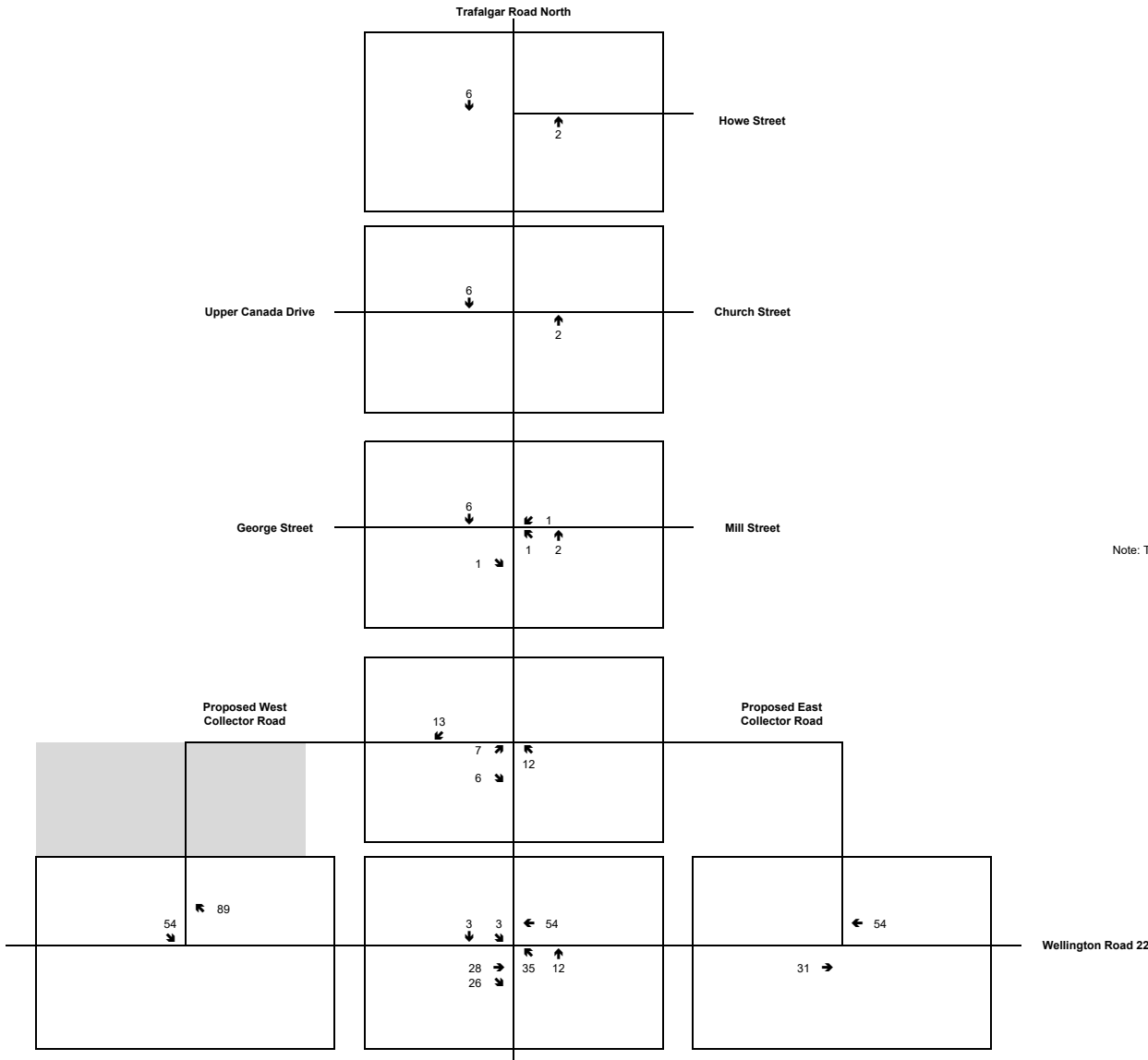


Figure No: 6  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development (Carson Reid Homes Ltd)  
P.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



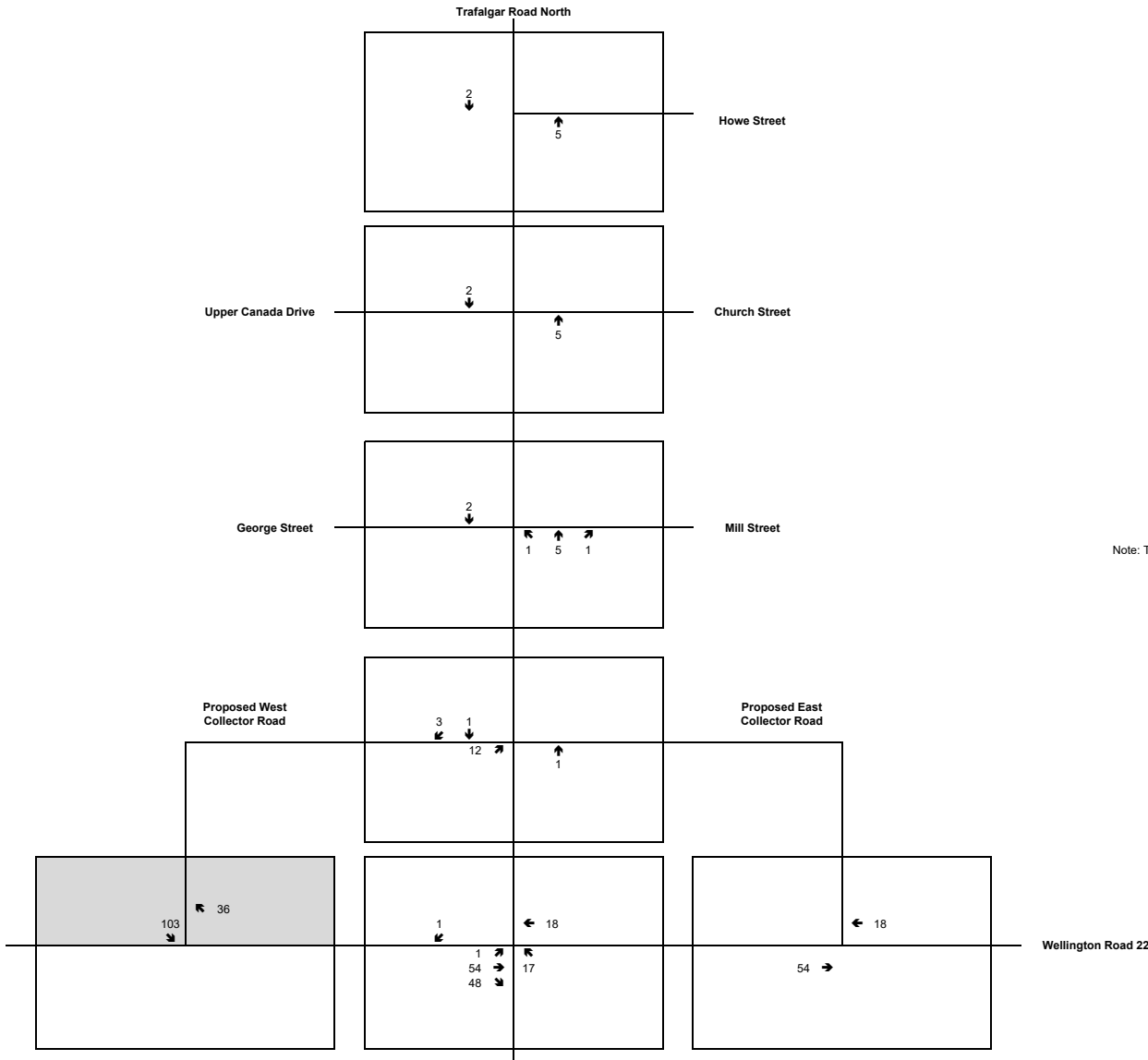
Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 7  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development (Thomasfield Homes Ltd)  
A.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



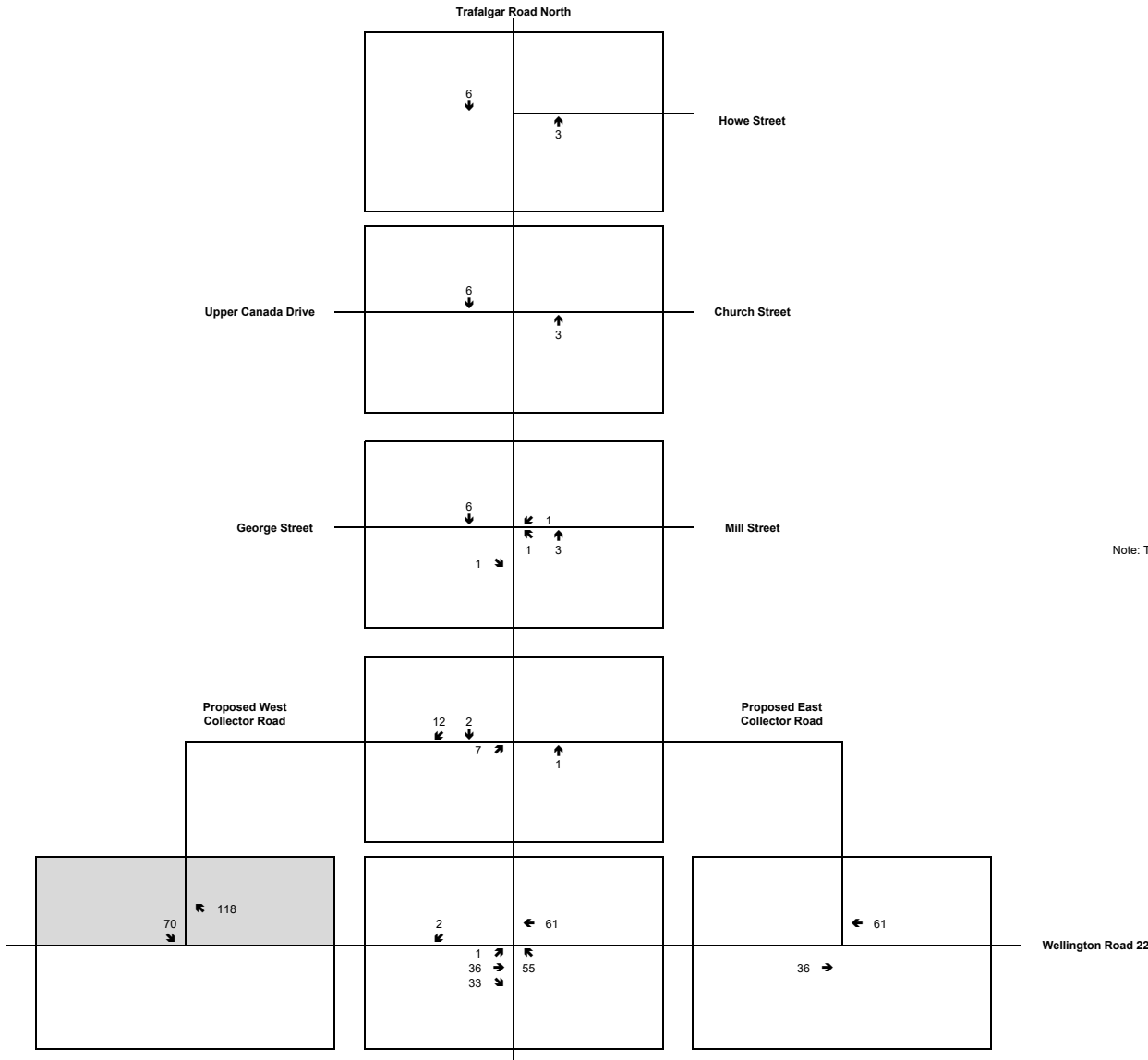
Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 8  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development (Thomasfield Homes Ltd)  
P.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



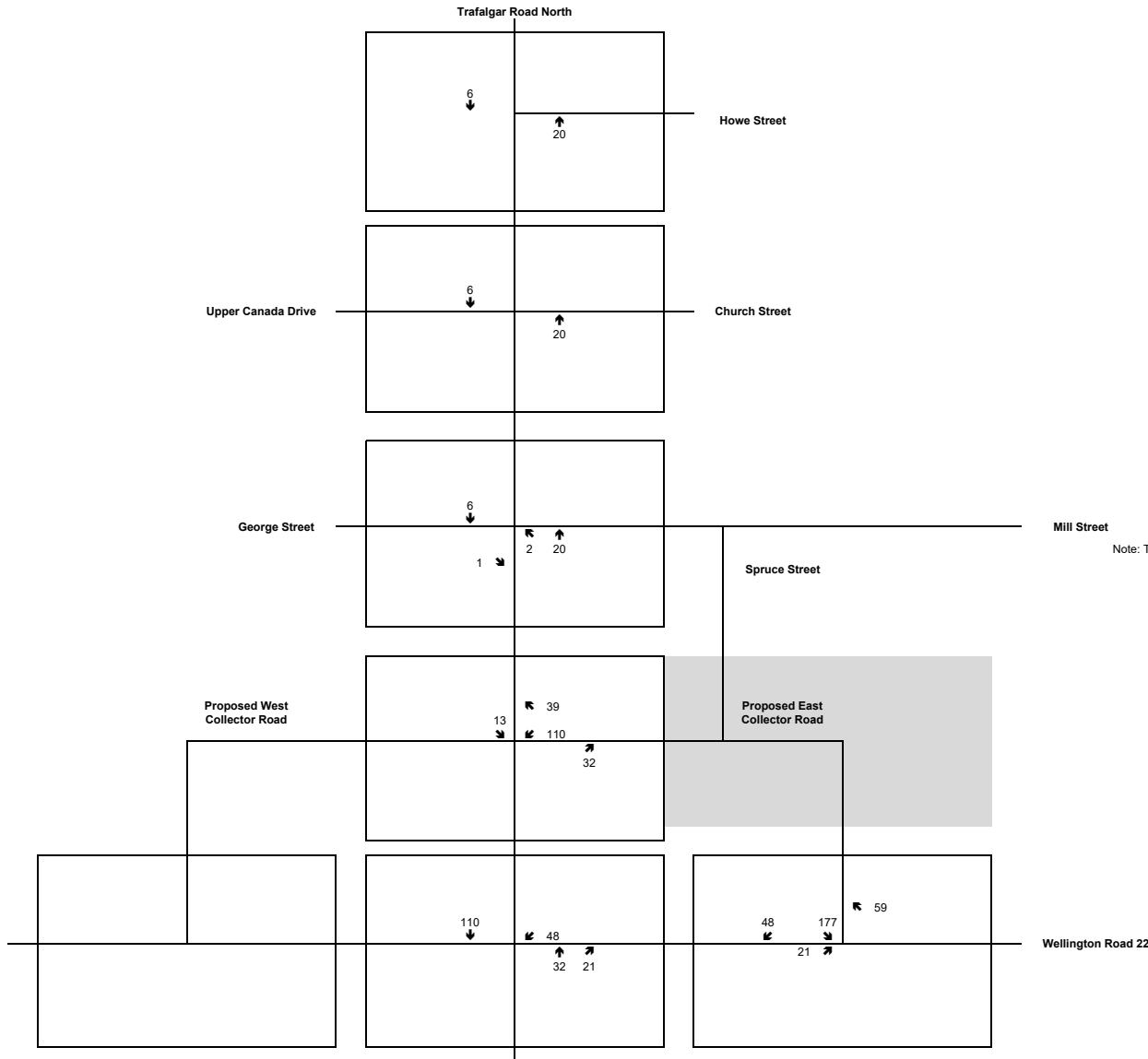
Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 9  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development  
(Dominion Packers & Realities (Tavares))  
A.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



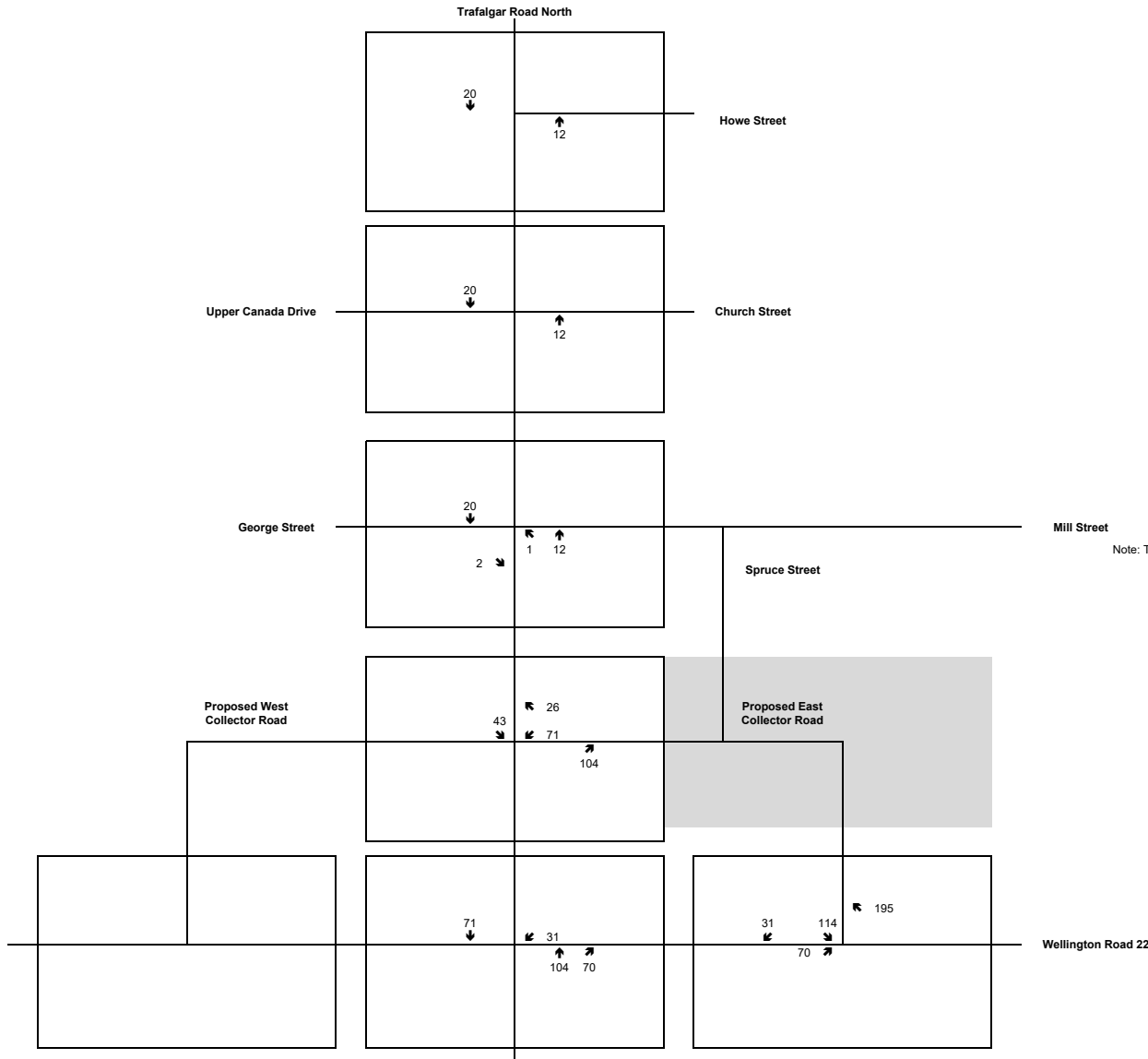
Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 10  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development  
(Dominion Packers & Realities (Tavares))  
P.M. Peak Hour**

W21084  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



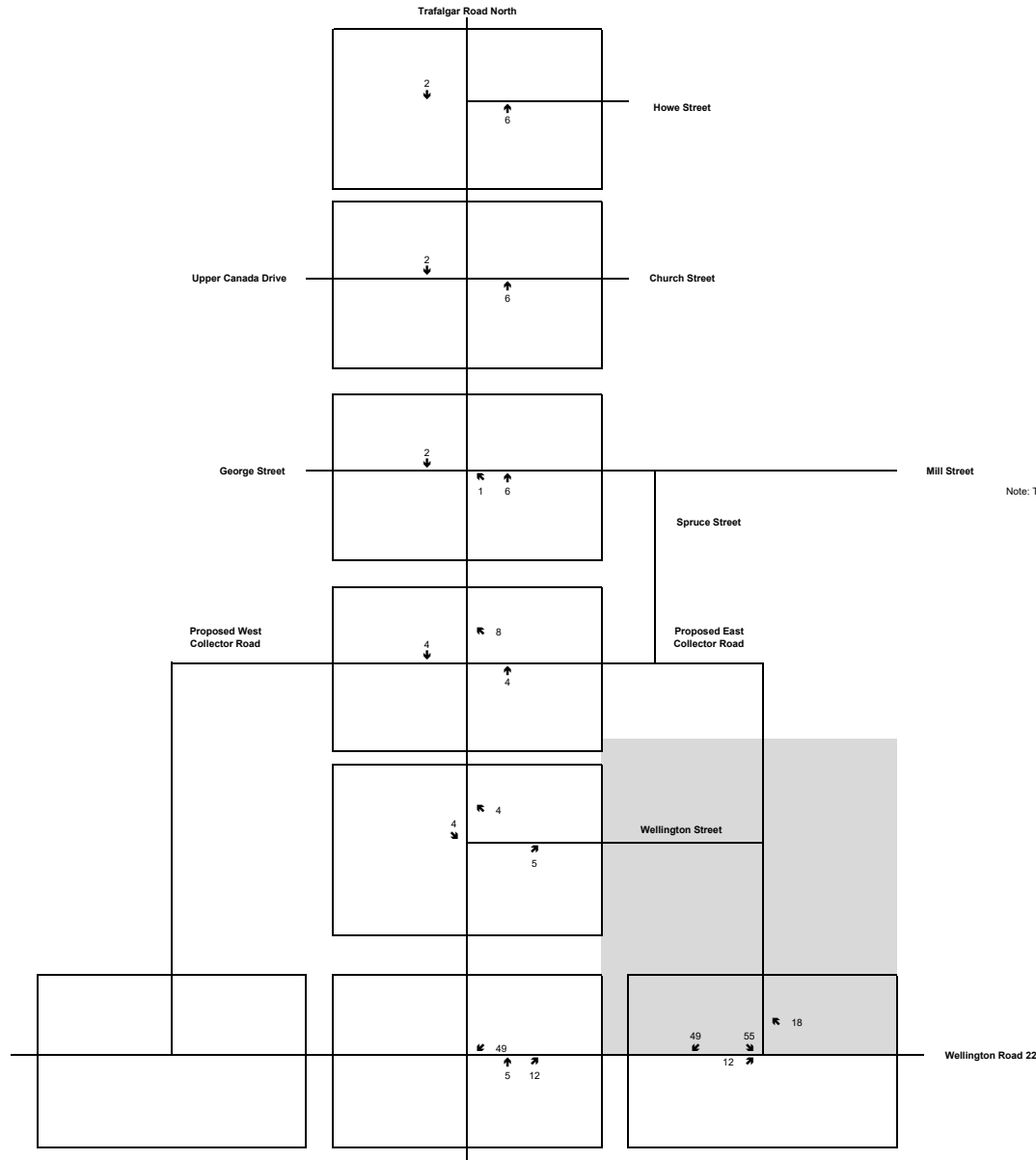
Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 11  
Date: January 13 2023  
Prepared by: B.W.



**Trip Assignment of Anticipated Development (Chantler)  
A.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.



Note: The Location of the Anticipated Background Development is Shaded in Grey.

Figure No: 12

Date: January 13 2023

Prepared by: B.W.



**Trip Assignment of Anticipated Development (Chantler)  
P.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

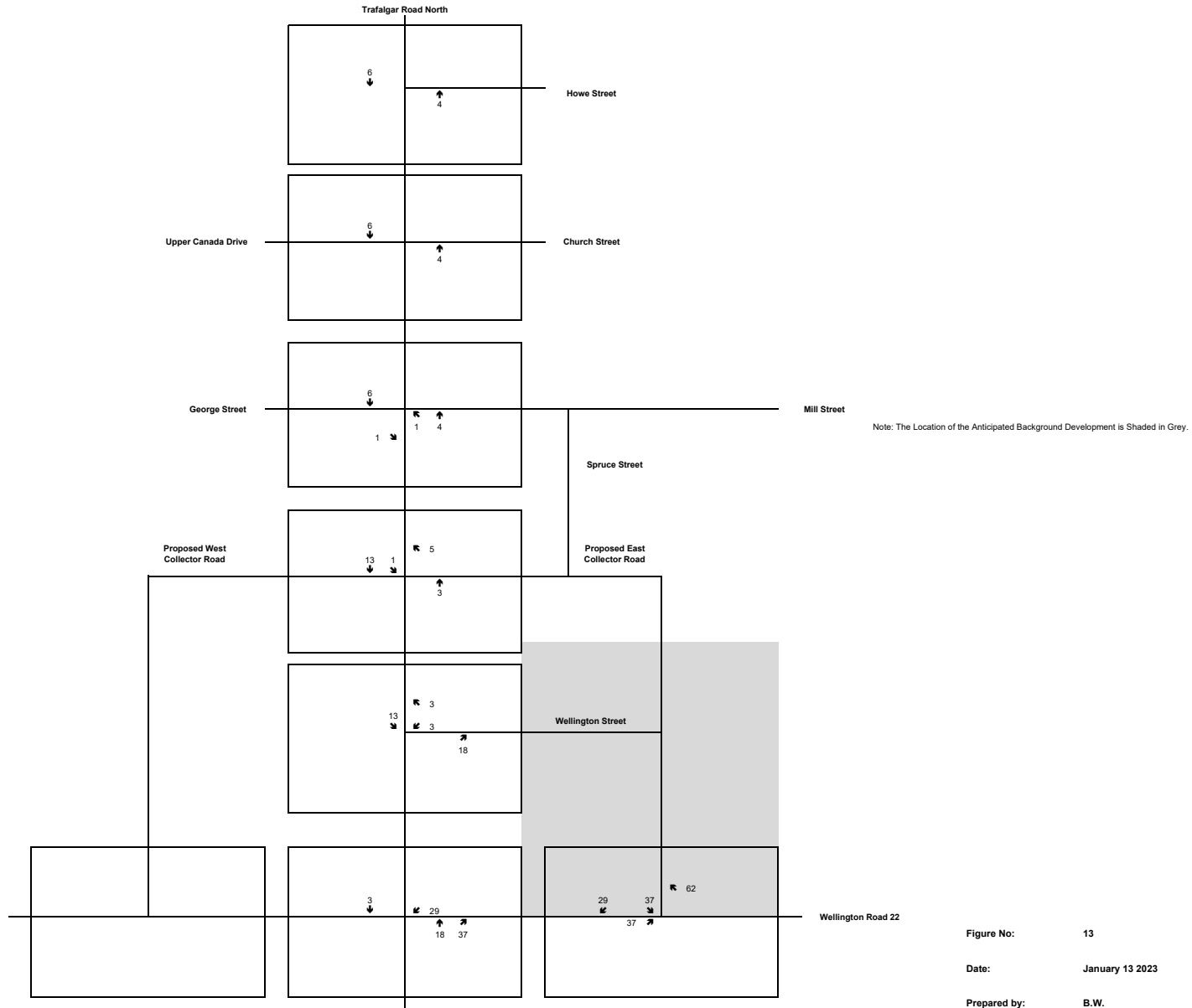


Figure No: 13  
Date: January 13 2023  
Prepared by: B.W.



Trip Assignment of Proposed Elementary School  
 within the Subject Subdivision (2026 and 2031 Horizon Years)  
 A.M. Peak Hour

W21081  
 Proposed Residential Subdivision  
 Town of Erin  
 Hillsburgh Heights Inc.

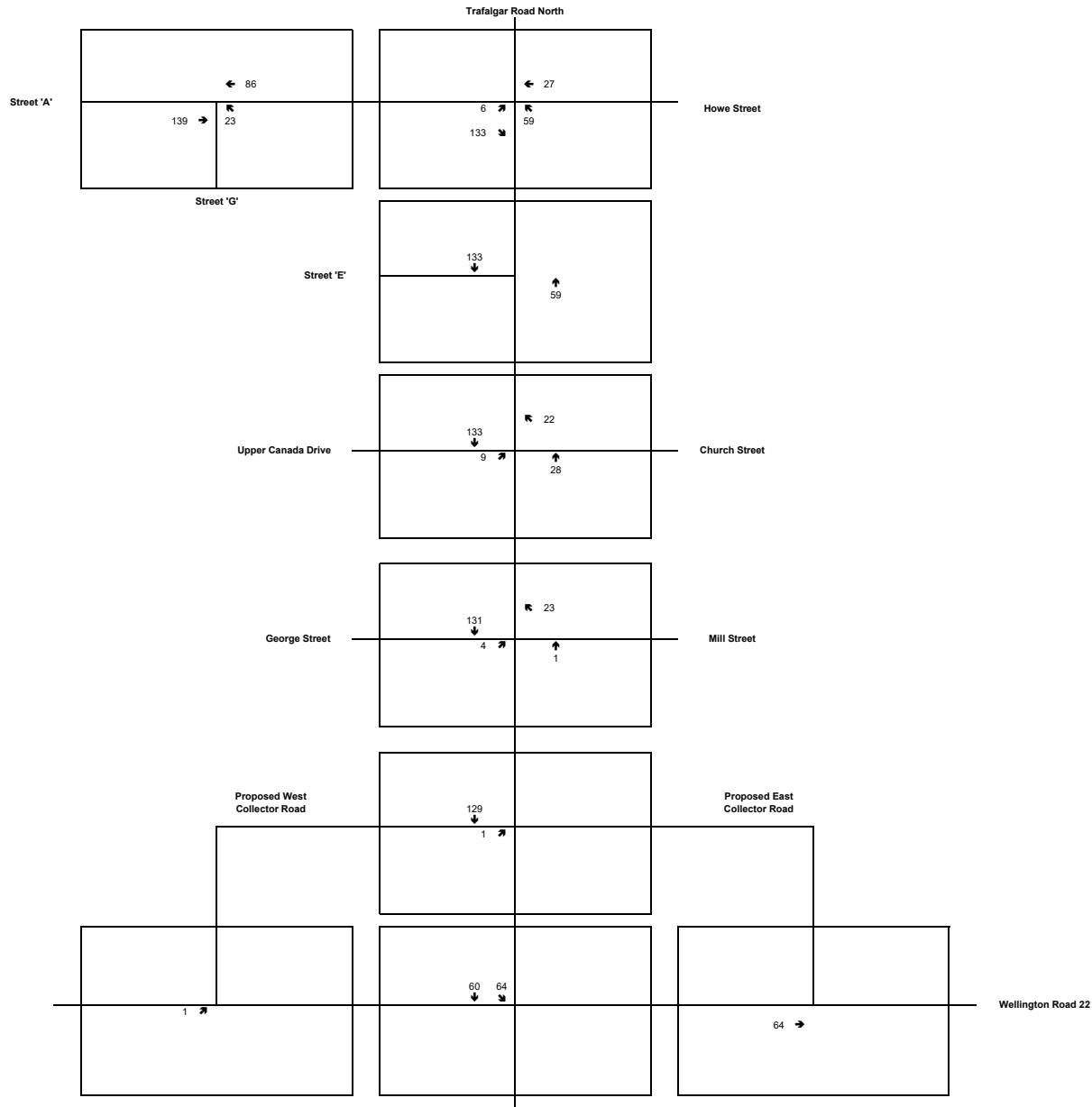


Figure No: 24  
 Date: January 13 2022  
 Prepared by: B.W.



Trip Assignment of Proposed Elementary School  
 within the Subject Subdivision (2026 and 2031 Horizon Years)  
 P.M. Peak Hour

W21081  
 Proposed Residential Subdivision  
 Town of Erin  
 Hillsburgh Heights Inc.

Trafalgar Road North

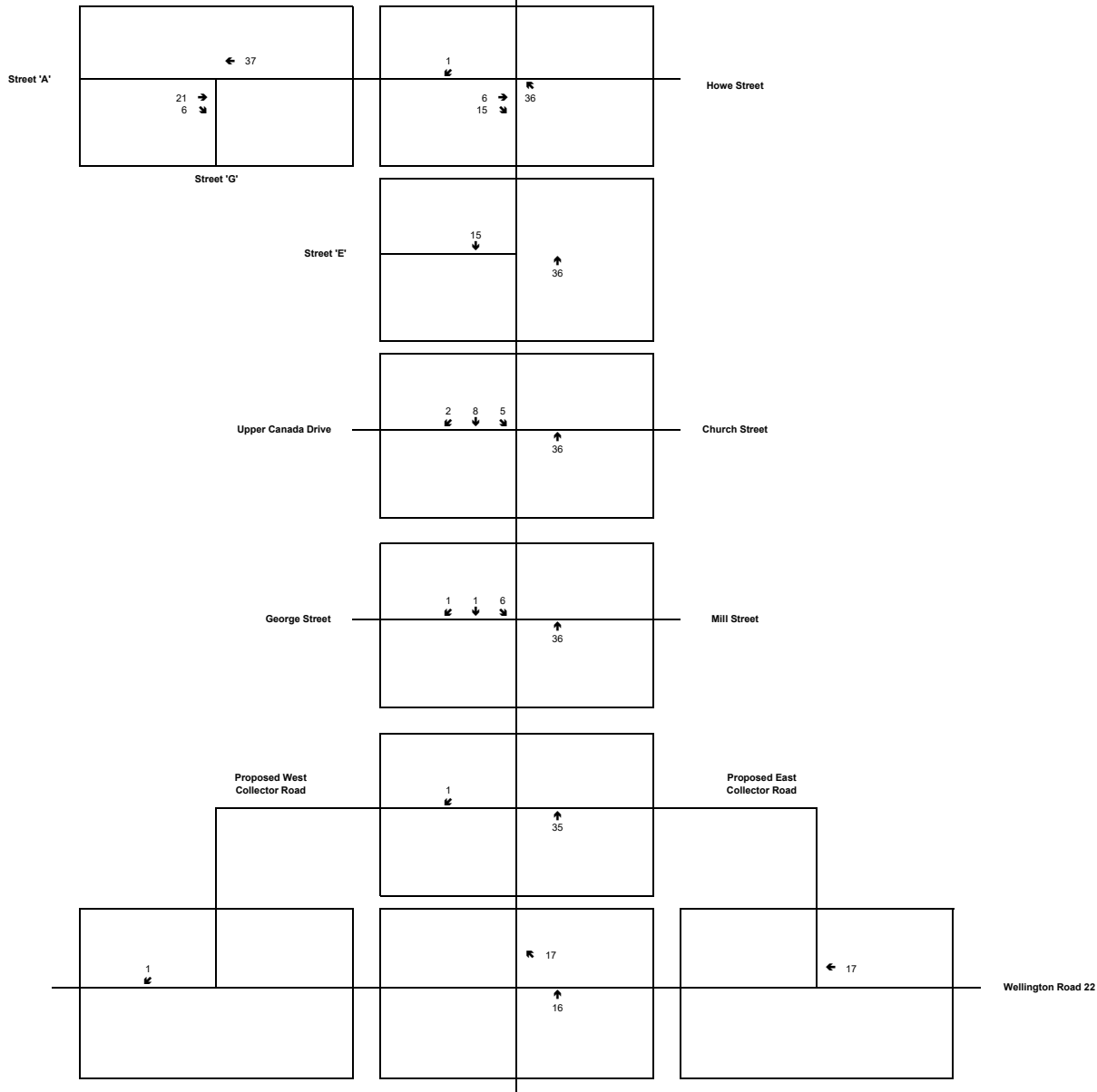


Figure No: 25

Date: January 13 2022

Prepared by: B.W.



**Trip Assignment of Subject Subdivision (2026 and 2031 Horizon Years)  
A.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

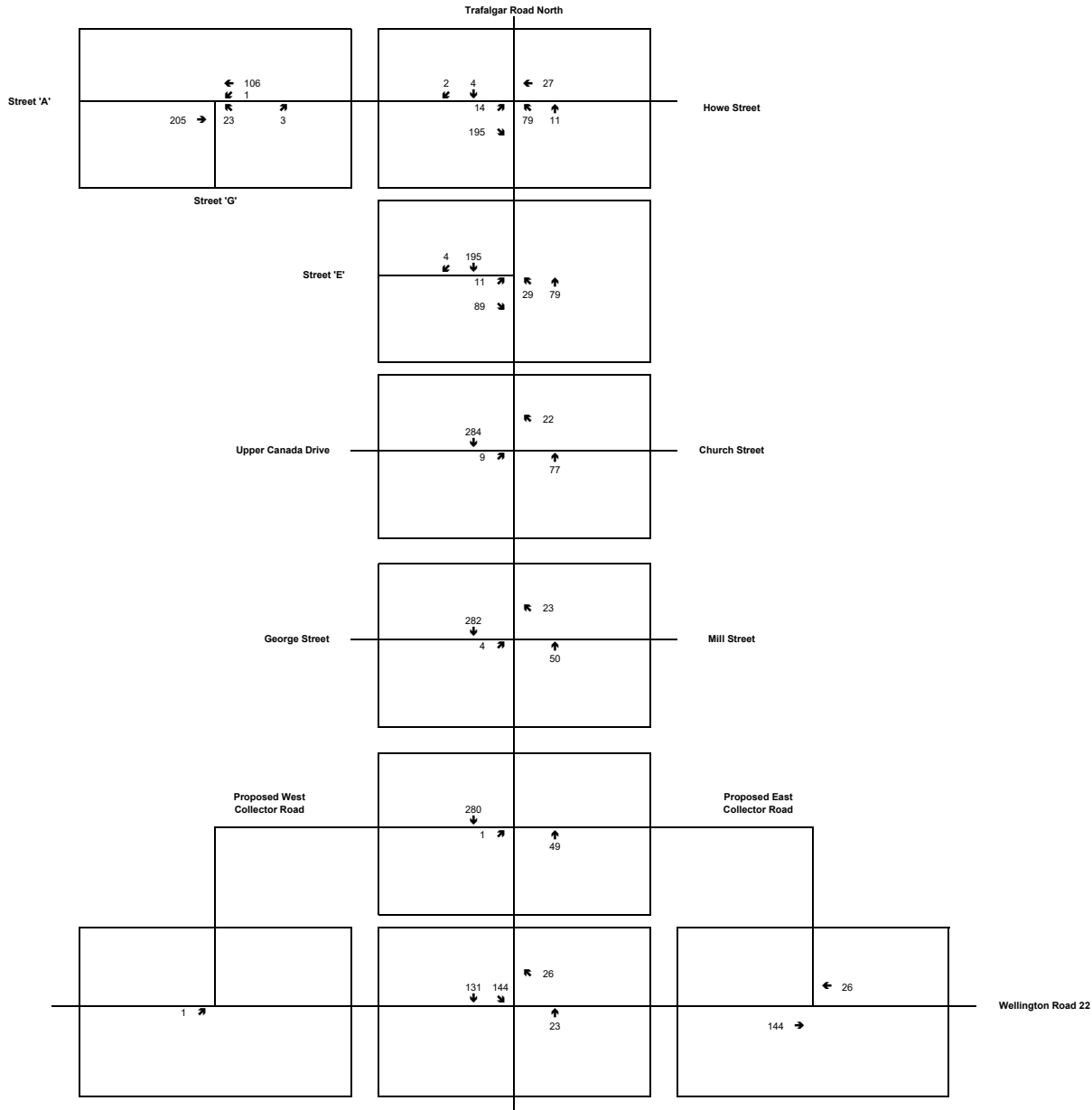


Figure No: 28

Date: January 13 2022

Prepared by: B.W.



**Trip Assignment of Subject Subdivision (2026 and 2031 Horizon Years)  
P.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

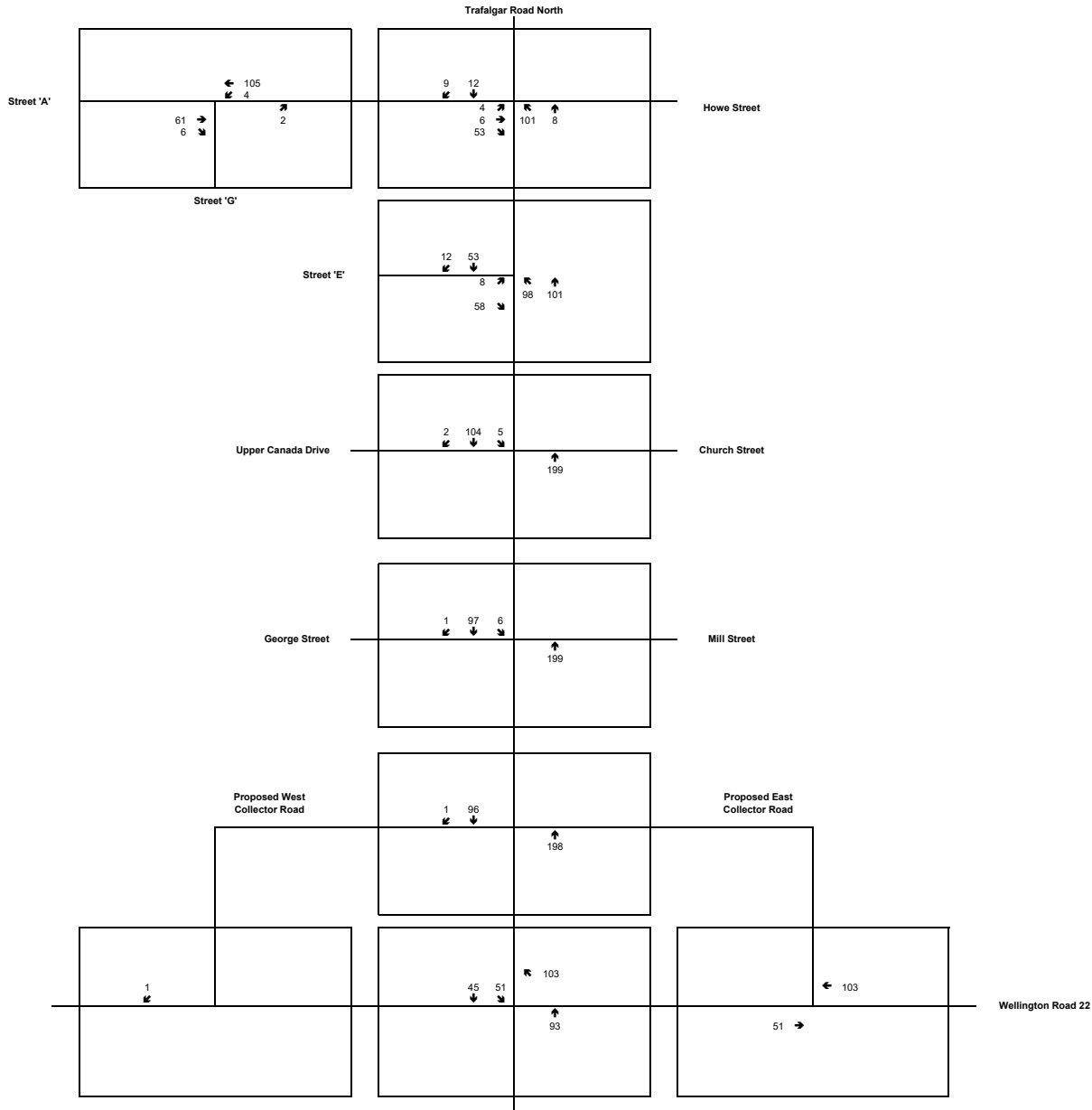


Figure No: 29

Date: January 13 2022

Prepared by: B.W.



**Future (2026) Total Traffic Volumes - A.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

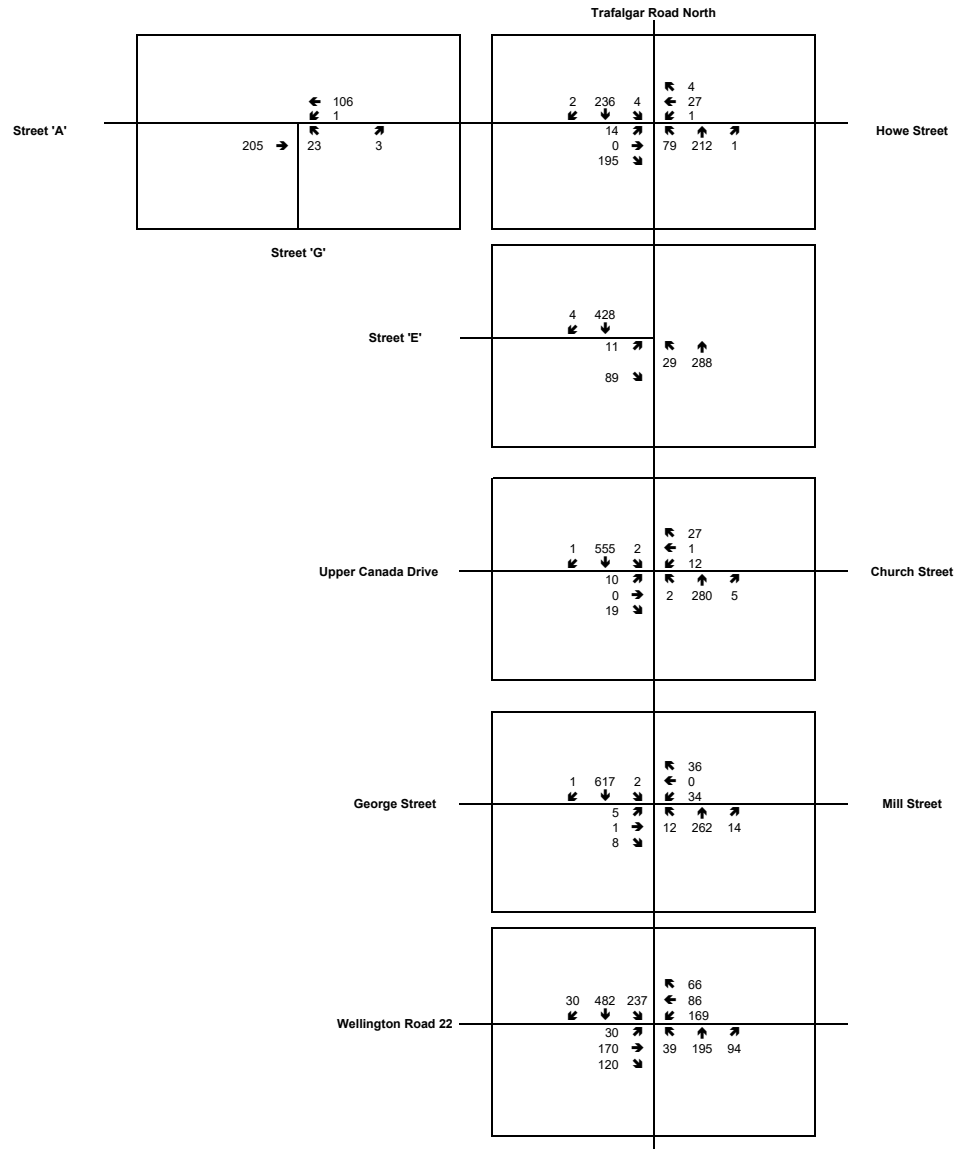


Figure No: 32  
Date: January 13 2022  
Prepared by: B.W.



**Future (2026) Total Traffic Volumes - P.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

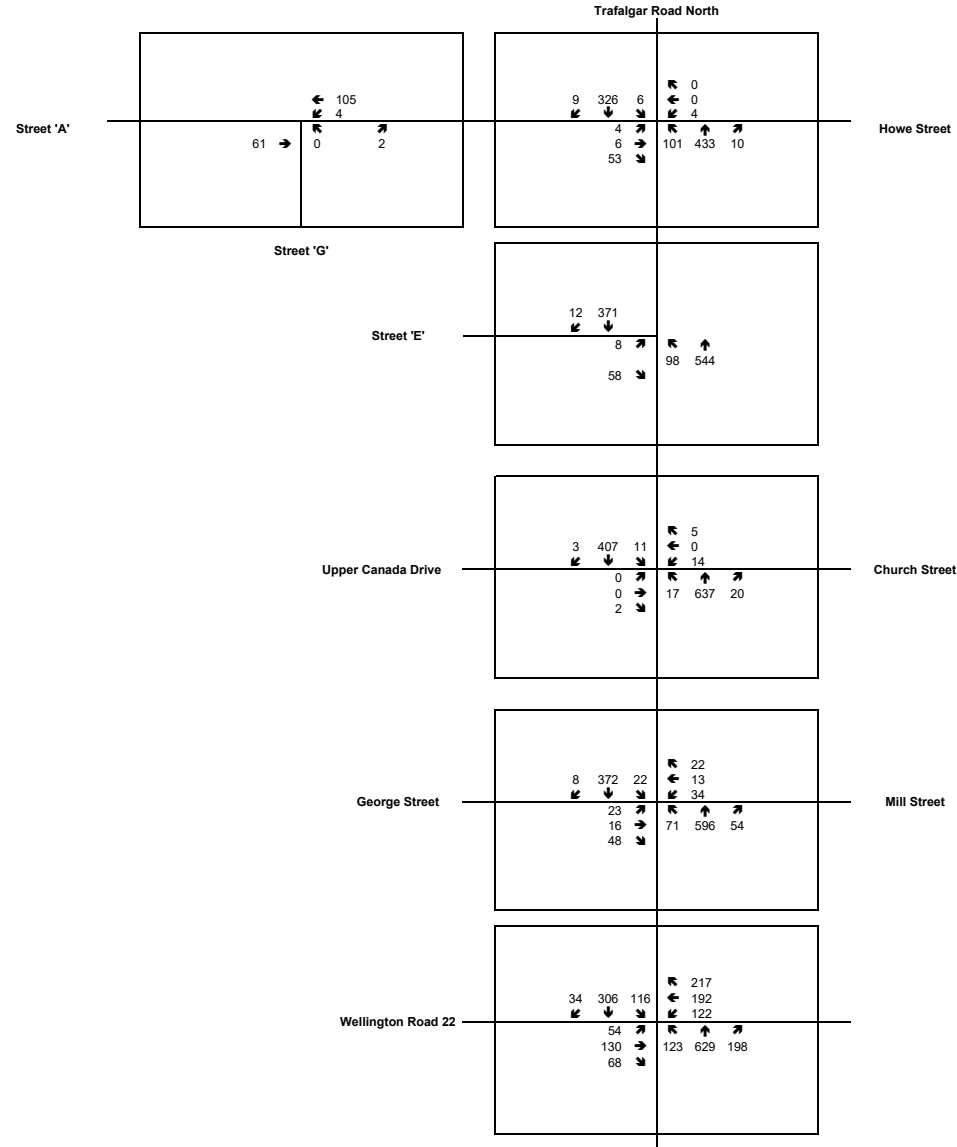
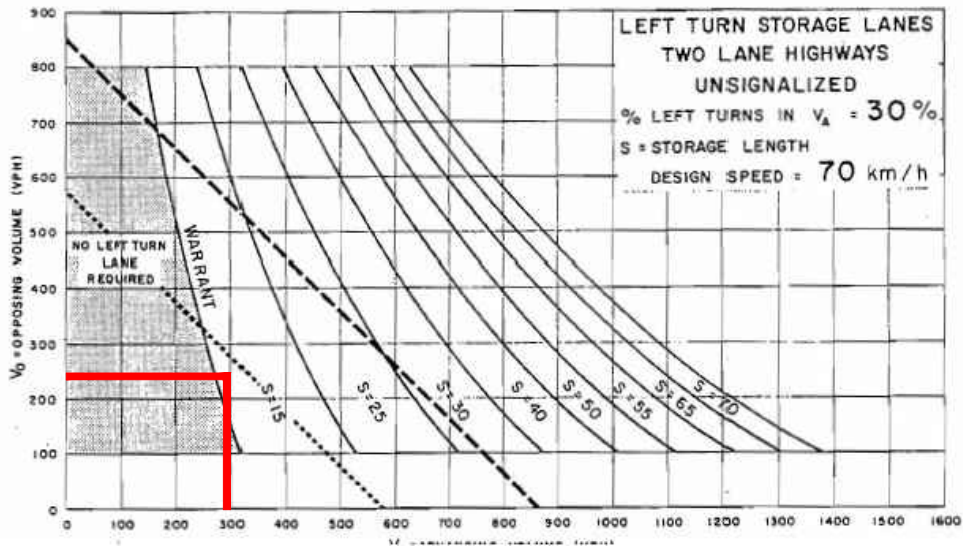
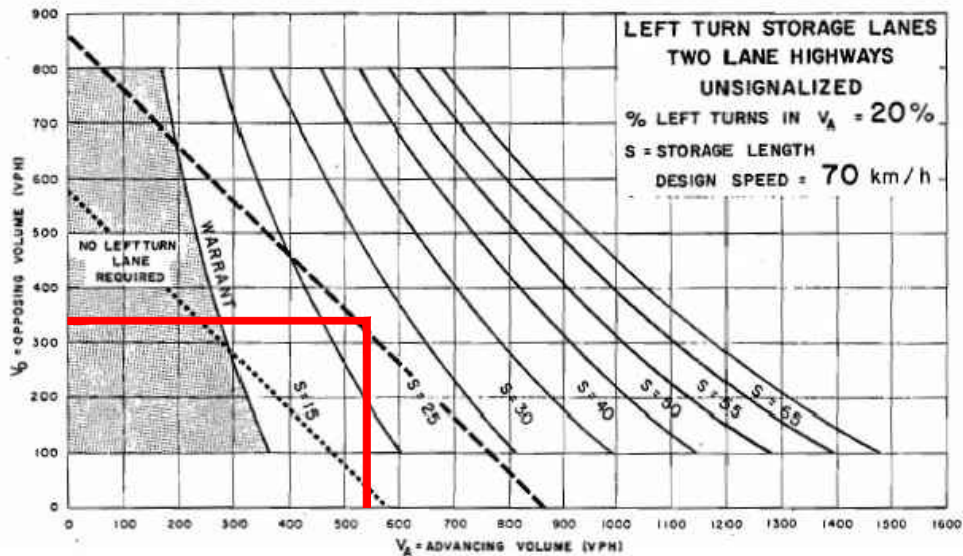


Figure No: 33  
Date: January 13 2022  
Prepared by: B.W.





A.M. PEAK HOUR



P.M. PEAK HOUR

TRAFFIC IMPACT STUDY  
PROPOSED RESIDENTIAL SUBDIVISION  
HILLSBURGH HEIGHTS INC.  
TOWN OF ERIN



TEL. (905) 794-0600

FAX (905) 794-0611

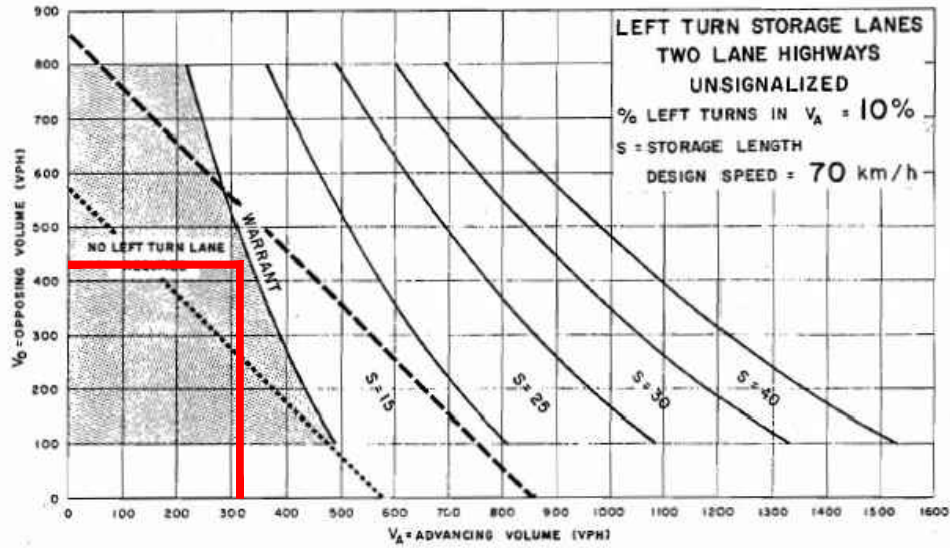
DATE  
JANUARY 16, 2023

JOB NO.  
W21081

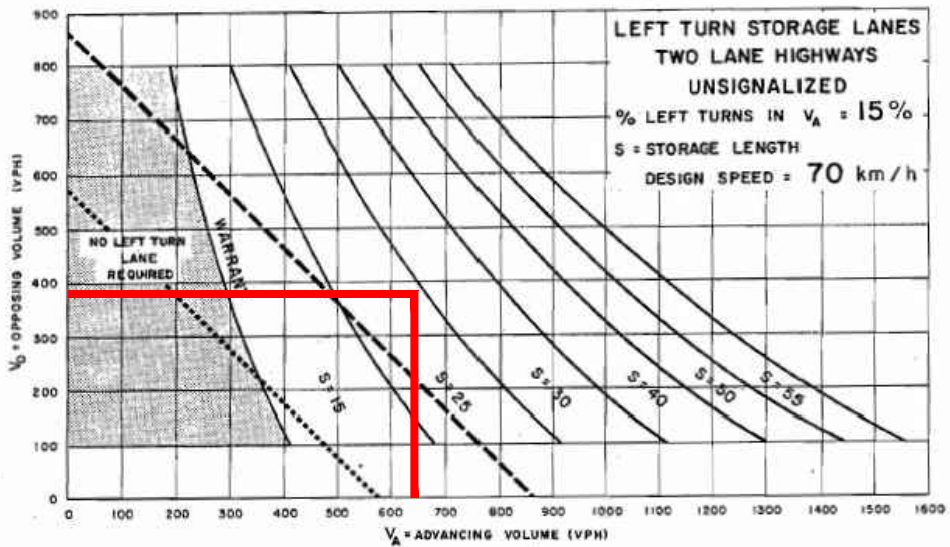
DRAWN BY  
B.W.

FIG. No

LEFT-TURN LANE WARRANT ANALYSIS  
FUTURE (2026) TOTAL TRAFFIC  
TRAFALGAR ROAD NORTH AT HOWE STREET/STREET 'A' - NB APPROACH



A.M. PEAK HOUR



P.M. PEAK HOUR

TRAFFIC IMPACT STUDY  
PROPOSED RESIDENTIAL SUBDIVISION  
HILLSBURGH HEIGHTS INC.  
TOWN OF ERIN

**CD CANDEVCON LIMITED**  
CONSULTING ENGINEERS AND PLANNERS

TEL. (905) 794-0600

FAX (905) 794-0611

DATE  
JANUARY 16, 2023

JOB NO.  
W21081

LEFT-TURN LANE WARRANT ANALYSIS  
FUTURE (2026) TOTAL TRAFFIC  
TRAFALGAR ROAD NORTH AT STREET 'E' - NB APPROACH

DRAWN BY  
B.W.

FIG. No

**Future (2031) Total Traffic Volumes - A.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

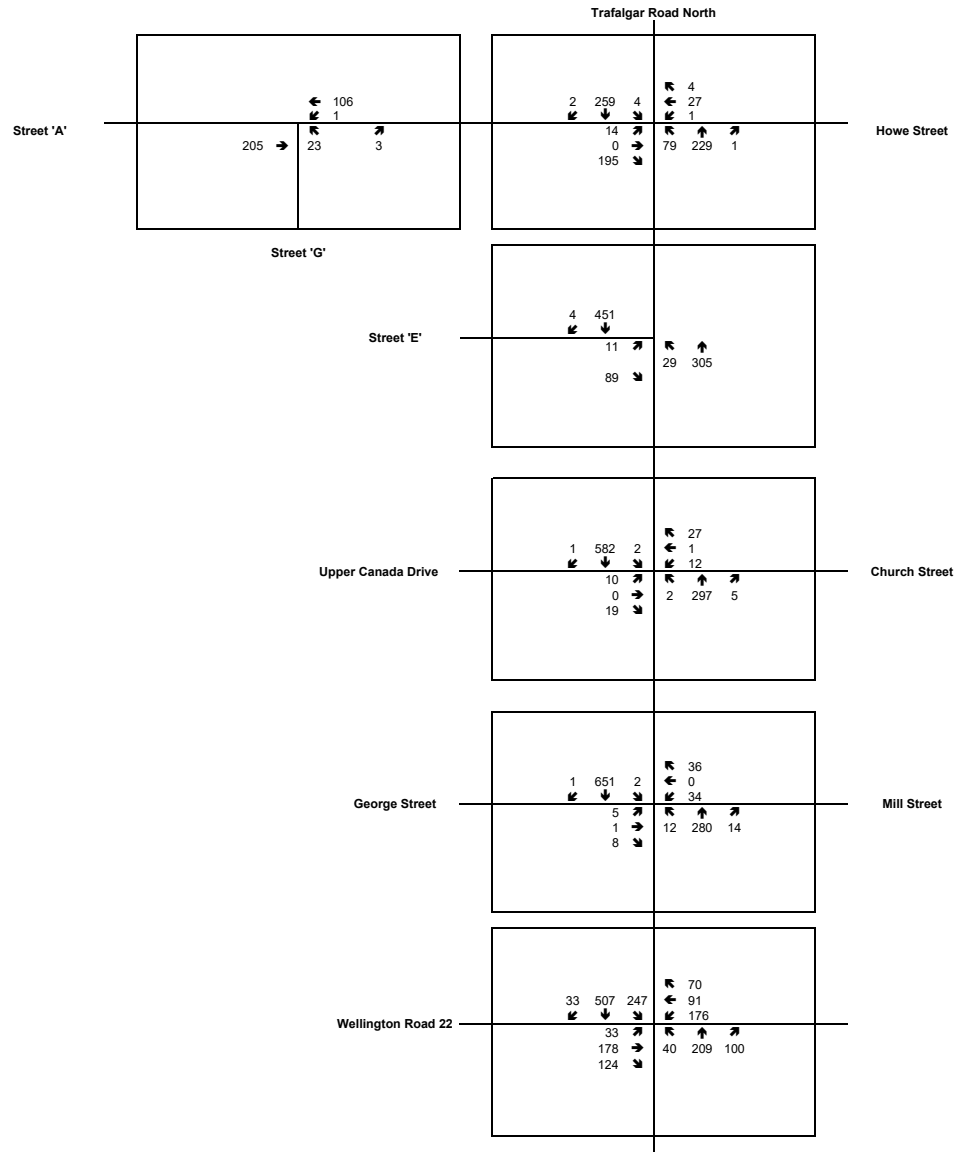


Figure No: 36  
Date: January 13 2022  
Prepared by: B.W.



**Future (2031) Total Traffic Volumes - P.M. Peak Hour**

W21081  
Proposed Residential Subdivision  
Town of Erin  
Hillsburgh Heights Inc.

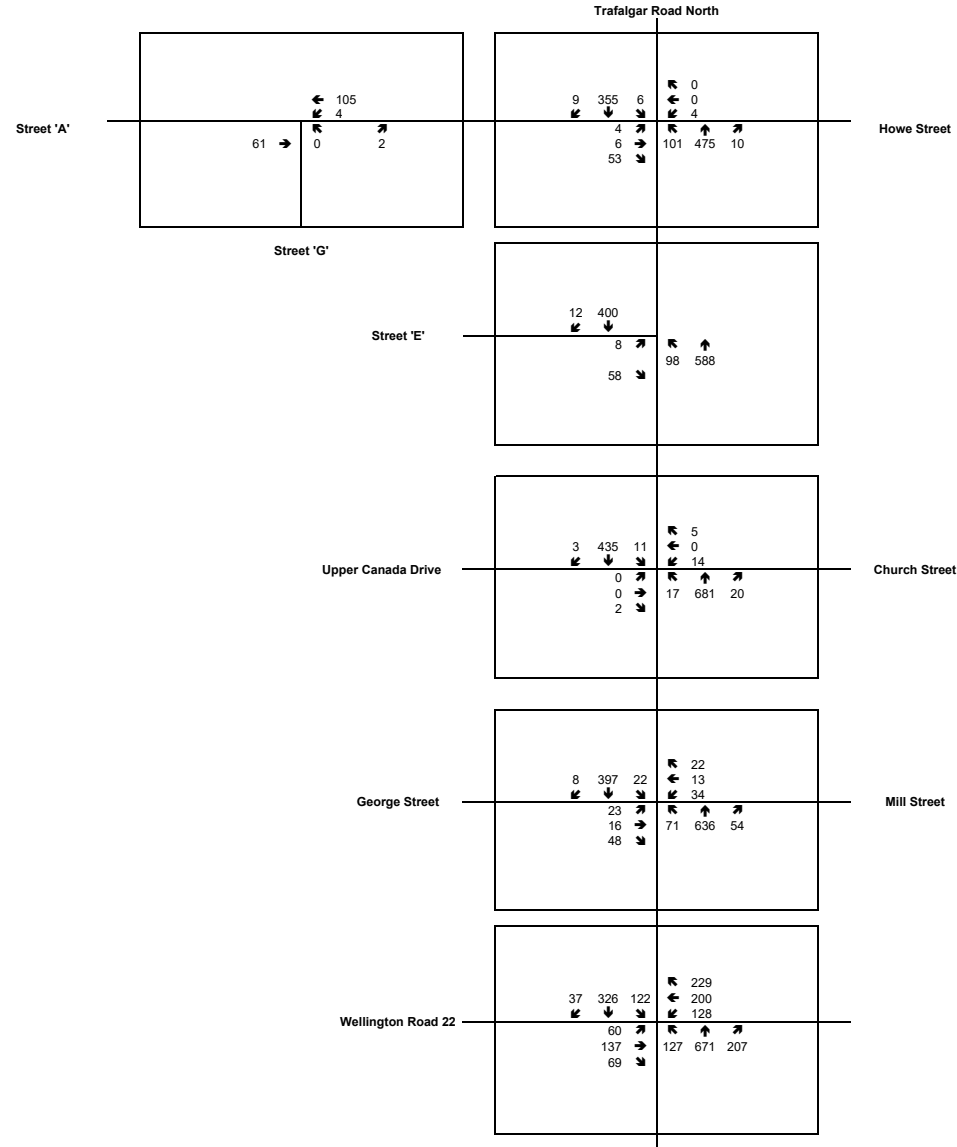
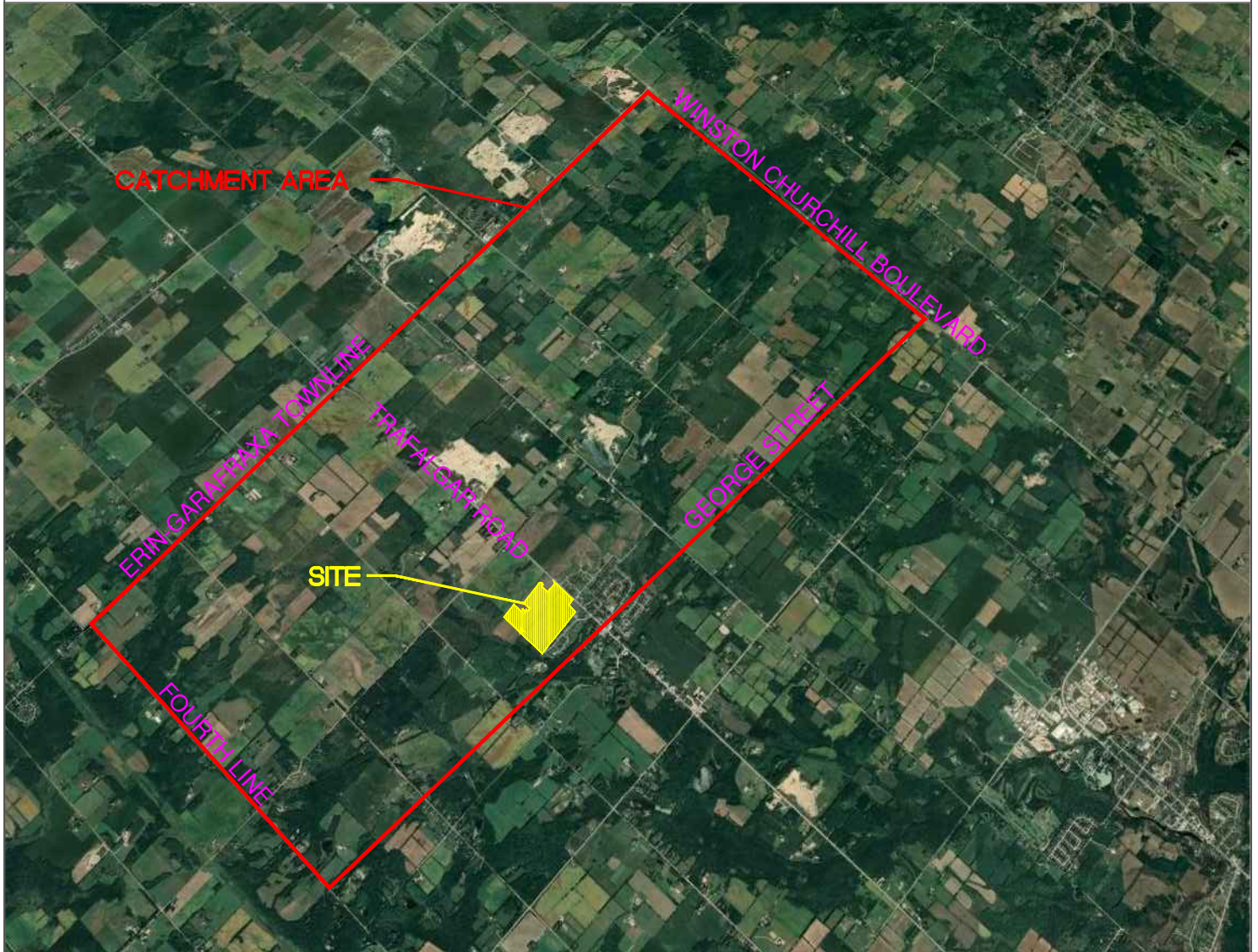


Figure No: 37  
Date: January 13 2022  
Prepared by: B.W.





TRAFFIC IMPACT STUDY

HILLSBURGH HEIGHTS INC.  
PROPOSED RESIDENTIAL SUBDIVISION

5916 TRAFALGAR ROAD NORTH  
PART 1 OF PLAN 61R-9590  
PART OF LOT 26, CONCESSION 7  
HILLSBURGH URBAN AREA  
TOWN OF ERIN

BOUNDARIES OF THE  
ASSUMED  
CATCHMENT AREA FOR  
THE PROPOSED  
ELEMENTARY SCHOOL

**CDG** CANDEVCON LIMITED  
CONSULTING ENGINEERS AND PLANNERS  
9358 GOREWAY DRIVE  
TEL. (905) 794-0600  
BRAMPTON, ONTARIO L6P 0M7  
FAX (905) 794-0611

DRAWN BY: B.W.	PROJECT No. W21081
CHECKED BY: D.L.	FIGURE
SCALE: N.T.S.	<b>A</b>
DATE: FEB. 16th, 2023	

**APPENDIX A**

**SIGNAL WARRANT ANALYSIS**

Intersection	Proposed Street A/ Howe Street at Trafalgar Road North Future (2031) Total Traffic
Number of Lanes on Main Road (1 = 2 lane 2= more than 2 lanes)	1
Rural (enter 1) or Urban (enter 2)	1
Existing (enter 1) or New (enter 2) intersection	2
T Intersection (yes =1 no = 2)	2

Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM	79	229	1	4	259	2	14	0	195	1	27	4
PM	101	475	10	6	355	9	4	6	53	4	0	0
Average Hourly Volume	45	176	3	3	154	3	5	2	62	1	7	1

Justification 7

















Justification	Description	Minimum Requirement 1 Lane		Minimum Requirement 2 lane		Initial Requirement	T intersection Factor	Existing /New Intersection Factor	Scenario Requirement	Scenario Volume			Compliance %			Justification
		Rural	Urban	Rural	Urban					AM	PM	AHV	AM	PM	AHV	
1A Minimum Veh. Volume	All Approaches	480	720	600	900	480	1	1.5	720	815	1023	460	100%	100%	64%	No
1B Minimum Veh. Volume	Minor Street	120	170	120	170	120	1	1.5	180	241	67	77	100%	37%	43%	
2A Crossing Traffic	Major Street Volume	480	720	600	900	480	1	1.5	720	574	956	383	80%	100%	53%	
2B Crossing Traffic	Crossing volume of Minor Street	50	75	120	170	50	1	1.5	75	42	14	12.5	56%	19%	17%	No

**APPENDIX B**

**SYNCHRO REPORTS**










HCM Un-signalized Intersection Capacity Analysis  
3: Trafalgar Road North & Street 'A'/Howe Street

2026 Future Total Traffic - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	195	1	27	4	79	212	1	4	236	2
Future Volume (Veh/h)	14	0	195	1	27	4	79	212	1	4	236	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	14	0	201	1	28	4	81	219	1	4	243	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	652	634	244	834	634	220	245			220		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	634	244	834	634	220	245			220		
tC, single (s)	7.1	6.5	6.2	8.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.4	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	75	99	92	100	94			100		
cM capacity (veh/h)	340	371	795	142	371	825	1321			1361		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	215	33	301	249								
Volume Left	14	1	81	4								
Volume Right	201	4	1	2								
cSH	731	378	1321	1361								
Volume to Capacity	0.29	0.09	0.06	0.00								
Queue Length 95th (m)	9.8	2.3	1.6	0.1								
Control Delay (s)	12.0	15.4	2.5	0.1								
Lane LOS	B	C	A	A								
Approach Delay (s)	12.0	15.4	2.5	0.1								
Approach LOS	B	C										
<b>Intersection Summary</b>												
Average Delay			4.9									
Intersection Capacity Utilization			57.4%		ICU Level of Service				B			
Analysis Period (min)			15									

















HCM Un-signalized Intersection Capacity Analysis  
 14: Trafalgar Road North & Street 'E'

2026 Future Total Traffic - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	89	29	288	428	4
Future Volume (Veh/h)	11	89	29	288	428	4
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)	12	97	32	313	465	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	844	467	469			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	844	467	469			
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	84	97			
cM capacity (veh/h)	324	596	1093			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	109	345	469			
Volume Left	12	32	0			
Volume Right	97	0	4			
cSH	545	1093	1700			
Volume to Capacity	0.20	0.03	0.28			
Queue Length 95th (m)	5.9	0.7	0.0			
Control Delay (s)	13.2	1.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.2	1.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			52.1%	ICU Level of Service	A	
Analysis Period (min)			15			










HCM Un-signalized Intersection Capacity Analysis  
3: Trafalgar Road North & Street 'A'/Howe Street

2026 Future Total Traffic - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	6	53	4	0	0	101	433	10	6	326	9
Future Volume (Veh/h)	4	6	53	4	0	0	101	433	10	6	326	9
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)	4	7	58	4	0	0	110	471	11	7	354	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1070	1075	359	1131	1074	476	364			482		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1070	1075	359	1131	1074	476	364			482		
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	96	92	97	100	100	91			99		
cM capacity (veh/h)	184	198	685	150	198	593	1195			1091		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	69	4	592	371								
Volume Left	4	4	110	7								
Volume Right	58	0	11	10								
cSH	487	150	1195	1091								
Volume to Capacity	0.14	0.03	0.09	0.01								
Queue Length 95th (m)	3.9	0.7	2.4	0.2								
Control Delay (s)	13.6	29.6	2.4	0.2								
Lane LOS	B	D	A	A								
Approach Delay (s)	13.6	29.6	2.4	0.2								
Approach LOS	B	D										
<b>Intersection Summary</b>												
Average Delay			2.5									
Intersection Capacity Utilization			60.7%		ICU Level of Service				B			
Analysis Period (min)			15									



















HCM Un-signalized Intersection Capacity Analysis  
 14: Trafalgar Road North & Street 'E'

2026 Future Total Traffic - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	58	98	544	371	12
Future Volume (Veh/h)	8	58	98	544	371	12
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)	9	63	107	591	403	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1214	410	416			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1214	410	416			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	90	91			
cM capacity (veh/h)	182	642	1143			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	72	698	416			
Volume Left	9	107	0			
Volume Right	63	0	13			
cSH	488	1143	1700			
Volume to Capacity	0.15	0.09	0.24			
Queue Length 95th (m)	4.1	2.5	0.0			
Control Delay (s)	13.7	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.7	2.3	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization			68.3%	ICU Level of Service		C
Analysis Period (min)			15			











HCM Un-signalized Intersection Capacity Analysis  
3: Trafalgar Road North & Street 'A'/Howe Street

2031 Future Total Traffic - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	195	1	27	4	79	229	1	4	259	2
Future Volume (Veh/h)	14	0	195	1	27	4	79	229	1	4	259	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	14	0	201	1	28	4	81	236	1	4	267	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	692	675	268	874	676	236	269			237		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	692	675	268	874	676	236	269			237		
tC, single (s)	7.1	6.5	6.2	8.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.4	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	74	99	92	100	94			100		
cM capacity (veh/h)	318	351	771	131	351	807	1295			1342		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	215	33	81	237	4	269						
Volume Left	14	1	81	0	4	0						
Volume Right	201	4	0	1	0	2						
cSH	705	357	1295	1700	1342	1700						
Volume to Capacity	0.30	0.09	0.06	0.14	0.00	0.16						
Queue Length 95th (m)	10.3	2.4	1.6	0.0	0.1	0.0						
Control Delay (s)	12.3	16.1	8.0	0.0	7.7	0.0						
Lane LOS	B	C	A		A							
Approach Delay (s)	12.3	16.1	2.0		0.1							
Approach LOS	B	C										
Intersection Summary												
Average Delay			4.6									
Intersection Capacity Utilization			47.2%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Un-signalized Intersection Capacity Analysis  
 14: Trafalgar Road North & Street 'E'

2031 Future Total Traffic - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	89	29	305	451	4
Future Volume (Veh/h)	11	89	29	305	451	4
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)	12	97	32	332	490	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	888	492	494			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	888	492	494			
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	83	97			
cM capacity (veh/h)	305	577	1070			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	109	32	332	494		
Volume Left	12	32	0	0		
Volume Right	97	0	0	4		
cSH	525	1070	1700	1700		
Volume to Capacity	0.21	0.03	0.20	0.29		
Queue Length 95th (m)	6.2	0.7	0.0	0.0		
Control Delay (s)	13.6	8.5	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	13.6	0.7		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			36.9%	ICU Level of Service	A	
Analysis Period (min)			15			











HCM Un-signalized Intersection Capacity Analysis  
3: Trafalgar Road North & Street 'A'/Howe Street

2031 Future Total Traffic - PM



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	6	53	4	0	0	101	475	10	6	355	9
Future Volume (Veh/h)	4	6	53	4	0	0	101	475	10	6	355	9
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)	4	7	58	4	0	0	110	516	11	7	386	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1141	1152	391	1203	1152	522	396			527		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1141	1152	391	1203	1152	522	396			527		
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	96	91	97	100	100	91			99		
cM capacity (veh/h)	164	178	658	133	178	559	1163			1050		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	69	4	110	527	7	396						
Volume Left	4	4	110	0	7	0						
Volume Right	58	0	0	11	0	10						
cSH	454	133	1163	1700	1050	1700						
Volume to Capacity	0.15	0.03	0.09	0.31	0.01	0.23						
Queue Length 95th (m)	4.3	0.7	2.5	0.0	0.2	0.0						
Control Delay (s)	14.3	32.9	8.4	0.0	8.5	0.0						
Lane LOS	B	D	A		A							
Approach Delay (s)	14.3	32.9	1.5		0.1							
Approach LOS	B	D										
<b>Intersection Summary</b>												
Average Delay			1.9									
Intersection Capacity Utilization			42.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Un-signalized Intersection Capacity Analysis  
 14: Trafalgar Road North & Street 'E'

2031 Future Total Traffic - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	58	98	588	400	12
Future Volume (Veh/h)	8	58	98	588	400	12
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)	9	63	107	639	435	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1294	442	448			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1294	442	448			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	90	90			
cM capacity (veh/h)	162	616	1112			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	72	107	639	448		
Volume Left	9	107	0	0		
Volume Right	63	0	0	13		
cSH	456	1112	1700	1700		
Volume to Capacity	0.16	0.10	0.38	0.26		
Queue Length 95th (m)	4.4	2.5	0.0	0.0		
Control Delay (s)	14.4	8.6	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	14.4	1.2		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			41.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Un-signalized Intersection Capacity Analysis 2026 Future Total Traffic - AM - with Improvements  
 3: Trafalgar Road North & Street 'A'/Howe Street



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	195	1	27	4	79	212	1	4	236	2
Future Volume (Veh/h)	14	0	195	1	27	4	79	212	1	4	236	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	14	0	201	1	28	4	81	219	1	4	243	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	651	634	244	834	634	220	245			220		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651	634	244	834	634	220	245			220		
tC, single (s)	7.1	6.5	6.2	8.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.4	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	75	99	92	100	94			100		
cM capacity (veh/h)	341	371	795	142	371	825	1321			1361		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	215	33	81	220	4	245						
Volume Left	14	1	81	0	4	0						
Volume Right	201	4	0	1	0	2						
cSH	731	378	1321	1700	1361	1700						
Volume to Capacity	0.29	0.09	0.06	0.13	0.00	0.14						
Queue Length 95th (m)	9.8	2.3	1.6	0.0	0.1	0.0						
Control Delay (s)	12.0	15.4	7.9	0.0	7.7	0.0						
Lane LOS	B	C	A		A							
Approach Delay (s)	12.0	15.4	2.1		0.1							
Approach LOS	B	C										
<b>Intersection Summary</b>												
Average Delay			4.7									
Intersection Capacity Utilization			46.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Un-signalized Intersection Capacity Analysis 2026 Future Total Traffic - AM - with Improvements  
 14: Trafalgar Road North & Street 'E'



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	89	29	288	428	4
Future Volume (Veh/h)	11	89	29	288	428	4
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)	12	97	32	313	465	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	844	467	469			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	844	467	469			
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	84	97			
cM capacity (veh/h)	324	596	1093			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	109	32	313	469		
Volume Left	12	32	0	0		
Volume Right	97	0	0	4		
cSH	545	1093	1700	1700		
Volume to Capacity	0.20	0.03	0.18	0.28		
Queue Length 95th (m)	5.9	0.7	0.0	0.0		
Control Delay (s)	13.2	8.4	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	13.2	0.8		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			36.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Un-signalized Intersection Capacity Analysis 2026 Future Total Traffic - PM - with Improvements  
 3: Trafalgar Road North & Street 'A'/Howe Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	6	53	4	0	0	101	433	10	6	326	9
Future Volume (Veh/h)	4	6	53	4	0	0	101	433	10	6	326	9
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)	4	7	58	4	0	0	110	471	11	7	354	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1064	1075	359	1126	1074	476	364			482		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1064	1075	359	1126	1074	476	364			482		
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	96	92	97	100	100	91			99		
cM capacity (veh/h)	186	198	685	151	198	593	1195			1091		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	69	4	110	482	7	364						
Volume Left	4	4	110	0	7	0						
Volume Right	58	0	0	11	0	10						
cSH	488	151	1195	1700	1091	1700						
Volume to Capacity	0.14	0.03	0.09	0.28	0.01	0.21						
Queue Length 95th (m)	3.9	0.6	2.4	0.0	0.2	0.0						
Control Delay (s)	13.6	29.4	8.3	0.0	8.3	0.0						
Lane LOS	B	D	A		A							
Approach Delay (s)	13.6	29.4	1.5		0.2							
Approach LOS	B	D										
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			40.4%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Un-signalized Intersection Capacity Analysis 2026 Future Total Traffic - PM - with Improvements  
 14: Trafalgar Road North & Street 'E'



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	58	98	544	371	12
Future Volume (Veh/h)	8	58	98	544	371	12
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)	9	63	107	591	403	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1214	410	416			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1214	410	416			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	90	91			
cM capacity (veh/h)	182	642	1143			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>		
Volume Total	72	107	591	416		
Volume Left	9	107	0	0		
Volume Right	63	0	0	13		
cSH	488	1143	1700	1700		
Volume to Capacity	0.15	0.09	0.35	0.24		
Queue Length 95th (m)	4.1	2.5	0.0	0.0		
Control Delay (s)	13.7	8.5	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	13.7	1.3		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			1.6			
Intersection Capacity Utilization			39.7%		ICU Level of Service	A
Analysis Period (min)			15			

**TOWN OF ERIN**

5684 Trafalgar Rd.  
Hillsburgh, ON N0B 1Z0  
[www.erin.ca](http://www.erin.ca)



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November 1, 2022

SENT BY E-MAIL – [maria@candevcon.com](mailto:maria@candevcon.com)

Dear Maria Jones,

RE: **Second Submission of 23T-21002, OP21-01, Z21-09  
Hillsburgh Heights Inc.  
5916 Trafalgar Road  
Part of Lot 26, Concession 7, now Part 1 on Plan 61R-9590  
Town of Erin**

This letter summarizes the comments received from Town Staff, agencies and peer reviewers to date for the second submission of the above-referenced applications.

**COMMENT SUMMARY**

**Town Planning - Jack Krubnik, Director of Planning and Development**

[Jack.Krubnik@erin.ca](mailto:Jack.Krubnik@erin.ca) or 519.855.4407 ext. 253

**Tanjot Bal, Senior Planner**

[Tanjot.Bal@erin.ca](mailto:Tanjot.Bal@erin.ca) or 519.855.4407 ext. 242

**Comments:**

**Density and Affordable Housing**

- Staff recognize that the revised plan has increased the density by 2.75 units per gross hectare, to bring the density to 11.45 units per gross hectare. The justification for the reduced density must be reviewed and accepted by County Planning Staff. Town staff have reviewed the applicants Planning Justification Report and are in agreement that although a greater density can be achieved on site, the inclusion of the heritage structure within the subdivision, as well as larger units along the south property perimeter as a built form transition to an existing community, are positive and desirable elements of this application.
- As the County Official Plan directs that a minimum of 25% of new housing in the County will be affordable to low and moderate income households, this policy is not being achieved solely through smaller single detached lots. Town staff are continuing

to request that a higher percentage of proposed units be provided with an accessory unit.

#### Heritage Home

- As a condition of draft plan approval, Town Staff will require an applicant-initiated designation of the restored farmhouse, a documentation and salvage plan for the barns and driveshed, and other recommendations within the HIA, for option 3.
- Please provide an update on the proposed rehabilitation of the heritage home.

#### Open Space and Trails

- The open space trail within Block 1 (Park) has a connection to the future development lands (Block 5). As a condition of draft plan approval, the park plan should be designed to show the future trail connection to the sidewalk and the conceptual proposed programming of the future parklands. The intent is to understand the entirety of the parkland upon full build out.
- The pedestrian circulation figure within the Urban Design Brief shows a 5 minute walking distance radius. Please note that as per the Town's Urban Design Guidelines, this radius should be provided from Block 1. Please revise accordingly.
- As the Tree Preservation/Compensation and Enhancement Plan is proposed to be provided at detailed design stage, please add a notation to the Draft Plan that shows CVC fencing and fencing along the shared property lines with existing residential properties.
- Staff request that the pedestrian walkway (Block 7) be increased in width to a minimum of 6.0 metres to improve safety, and to permit service and emergency vehicle access if required.
- It is requested that a sidewalk be provided along the length of the site frontage on Trafalgar Road.
- Increase all curb side landscape boulevards to a 3.0 metre minimum width.

#### Zoning

- The Town has initiated a Technical Amendment of Zoning By-law 07-67, as amended (Z21-05). Please revise the draft by-law to be consistent with the Technical Amendment. Please see our notes below:
  - Rezone the residential lands to UR1 or UR2, with a site-specific amendment
  - Include the institutional uses (e.g. school and day nursery) in the site-specific
  - Zone the SWM facilities, park and open space, OS1 Zone
  - Concerned with the requested height of 12.5 metres and exterior side yard setback of 3 metres for single detached dwellings and semi-detached dwellings. Please align these provisions with the Town's Zoning By-law with 11 metres heights and 4.5 metre exterior side yard setback.
  - Please provide justification for the proposed townhouse height of 14.5 metres, whereas the Town's Zoning By-law permits a height of 12.5 metres for stacked townhouses and 11 metres for all other types of townhouses.

- Please revise the draft by-law to include a holding symbol for the entire site (see Kensington's Site Specific Provisions for details).
- The future development lands need to have a zone category, or else there is no benefit of including them in the rezoning application. Are you rezoning the residential portion to the same zone code as the other residential lands, with a (H)? Are you rezoning the commercial lands to a site specific commercial zone?
- Town staff is seeking a minimum of 6.0 metre separation between driveways to accommodate the potential for vehicular parking. Also, where two driveways are adjacent to one another, they should be paired.

#### Traffic

- It's not explicitly clear from the Traffic Impact Study that the future background study included all the planned subdivisions in the Hillsburgh Urban Area. The Town of Erin is in a unique position of having the majority of its future growth already known and forecasted by the Town. Therefore, all identified subdivision growth within the Erin Urban Area should be utilized in the formulation of the Traffic Impact Study findings.
- Staff would like to include the evaluation of a traffic signal at Trafalgar Road and Howe Street, as the Traffic Impact Study does not appear to consider the accommodation of the requested school site on the subject lands, or the desire for the community on the east side of Trafalgar to access the school lands or their desire to cross Trafalgar to access parkland or other.

#### Other:

- Provide more evidence and attention to the topic of sustainability. Make clear how pedestrian movement and cycling will be encouraged and planned for. What type of luminaire and lighting poles are proposed? What type of sustainable hardscaping and softscaping initiatives are proposed within this initiative? What material are proposed that have been sustainably harvested? Also, be clearer with regards to water conservation and management without a reliance on future private home owners. These are questions and concerns that are top of mind for the Town of Erin and its residents. Please clarify how sustainability can be addressed and executed within this subdivision application process. The Town's engineering standards can be updated, if necessary, to reflect sustainable solutions brought forth by the applicant.
- The Town of Erin will seek a Control Architect within the draft subdivision conditions, to assist staff in the review and execution of the subdivision built form.

#### **Engineering – Nick Colucci, Director of Infrastructure Services**

[Nick.Colucci@erin.ca](mailto:Nick.Colucci@erin.ca) or 519.855.4407 ext. 227

**Joe Mullan, Ainley (Peer Review)**

- To be provided under separate cover

**Tree Inventory Protection & Removal Plan & Environmental Impact Study Peer Review Comments**

**(GWS Ecological & Forestry Services Inc.)**

- With respect to the list of vascular plants provided in the EIS, two species were noted as being regionally and locally significant, tall blue lettuce and clammy ground-cherry. I recommend that the precise location of these plants should be confirmed in 2023 and if it is determined that they are within the area proposed for future development they should be transplanted to suitable habitat that will be protected from development. Aside from this issue I am otherwise satisfied by the responses provided by Birks NHC.
- With respect to the updated Tree Inventory Protection and Removal Plan, 5 additional trees are now identified for preservation and protection thereby increasing to total number of trees to be retained from 27 to 32. However, 4 of these trees are located in Future Residential Development Block 5 (i.e., tree #1303 to 1306) and the other tree #1307 is located in School Block 2 so their long-term survival is still uncertain.
- The Urban Arborist acknowledges that further review of tree saving opportunities will be carried out after a Grading Plan has been prepared. Since a Draft Plan of Subdivision has now been submitted, it should be feasible to now assess tree preservation in conjunction with grading requirements.
- With respect to the trees found in Tree Groups 1 and 2, the Urban Arborist indicates that fixed area plots will be used to estimate the number of trees 10 to 20cm dbh and larger that are growing in these areas. I am not in favour of this approach. In my opinion, all trees established in these areas should be tallied by species and diameter. Some of these trees may also be suitable for transplanting along with smaller sapling sized trees. This may not require the tagging of all trees found in these groupings, but only those that have some potential for preservation. For example, in Tree Group 1 only the trees found in SWM Block 4 or in the backyards of adjacent housing lots would need to be individually tagged and inventoried. It is nonetheless important to record the total number of trees 10cm dbh and larger that will be affected by proposed development as this has a bearing on follow-up compensation requirements for tree losses.

**Building Services – [building@erin.ca](mailto:building@erin.ca)**

- No comments or concerns

**Fire Services – Jim Sawkins, Fire Chief**

[Jim.Sawkins@erin.ca](mailto:Jim.Sawkins@erin.ca) or 519.855.4407 ext. 243

- No comments

**Wellington County**

<ul style="list-style-type: none"> <li>To be provided under separate cover</li> </ul>
<b>Credit Valley Conservation – Annie Li</b> <a href="mailto:Annie.li@cvc.ca">Annie.li@cvc.ca</a> <ul style="list-style-type: none"> <li>See attached comment letter</li> </ul>
<b>Upper Grand District School Board – Ruchika Angrish</b> <a href="mailto:Ruchika.angrish@ugdsb.on.ca">Ruchika.angrish@ugdsb.on.ca</a> <ul style="list-style-type: none"> <li>See attached comment letter</li> </ul>
<b>Sourcewater Protection – <a href="mailto:sourcewater@centrewellington.ca">sourcewater@centrewellington.ca</a></b> <ul style="list-style-type: none"> <li>See attached comment letter</li> </ul>
<b>Conseil scolaire Viamonde - <a href="mailto:planification@csviamonde.ca">planification@csviamonde.ca</a></b> <ul style="list-style-type: none"> <li>No comments</li> </ul>

Please review all comments provided and provide a comprehensive resubmission, including a comment matrix outlining how each comment has been addressed. In addition, please provide the following:

- Revised Draft By-law
- Landscape Plan or revised Draft Plan

If you have any questions or concerns, please contact me by email ([Tanjot.bal@erin.ca](mailto:Tanjot.bal@erin.ca)) or by telephone (519.855.4407 Ext. 242).

Sincerely,

Tanjot Bal, MCIP, RPP  
Senior Planner  
Town of Erin

## Hillsburgh Heights Inc. Development (5916 Trafalgar Rd) 2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments

Item	Ainley 1 <sup>st</sup> Submission Review Comments		Proponents Response Comments	Ainley 2 <sup>nd</sup> Submission Review Comments
<b>Draft Plan of Subdivision</b>				
1	The draft plan should include dimensions for 1.1. right-of-way widths 1.2. sight triangles ensuring they conform with the Engineering Standards and the Zoning By-law (i.e., minimum distance of 6 metres) 1.3. radii on rights-of-way between internal intersections and at cul-de-sac bulbs 1.4. each lot line.	Candevcon	Requested dimensions have been included on the draft plan of subdivision. Dimensions at each Lot Line not provided; this information is premature for a Draft Plan. The revised draft plan of subdivision is included in the resubmission package.	Done
2	Block 2 appears to have a residential lot fabric overlaid on it, but the Traffic Impact Study assumes it is a School Block. If the School Board does not require a school site, then this lot block can be redeveloped as residential (if there is capacity). Separate applications will be required for these lands. The residential lot fabric overlay should be removed from on top of the school block.	Candevcon	The draft plan of subdivision has been revised by removing the residential lot fabric overlay from on top of the school block.	Done
3	Block 8, Walkway, should be a minimum of 6.0 m wide, and wider if the match lines for the backs of swale on each side of the walkway extend beyond 6.0 m width.	Candevcon	Noted;	Okay, but subject to Block 55 at the end of Upper Canada Dr., being owned by the Town.
4	The lot line dimensions should include metric (meters) units.	Candevcon	It is premature to provide Lot Line Dimensions; the Lot types which specify Minimum Dimensions are identified.	Okay
5	Please provide further clarifications of the existing right of way limits at the end of Upper Canada Drive and McMurchy Lane and in particular if the existing cul-de-sacs are within the municipal right of way or are on private property via easements.	Candevcon	This requirement has not bearing on the subject subdivision; the Town has this information in its records.	Okay
6				Lots 8 and 73 will have restricted driveway access because of their close proximity to the roundabout. Consideration should be given to have their driveways off Street G, which will be less busy.
<b>Preliminary Geotechnical Investigation</b>				
7	The groundwater levels should be monitored year-round to determine the high groundwater level for detail design purposes.	Soil Engineers	Noted. A hydrogeological assessment has been completed by HLV2K Engineering. The scope of work included the installation of 5 monitoring wells within the property and groundwater level was observed in September 2021 and November 2021. Further monitoring will be carried out, notwithstanding that it is not warranted.	Okay
8	Borehole 6 indicates that it includes a topsoil fill material. The report indicates that the topsoil fill should be excavated, examined, and sorted free of topsoil and deleterious material before being reused as fill material, or removed and not re-used.	Soil Engineers	Noted.	Okay
9	As the detail engineering design evolves, the geotechnical bore holes should be advanced to be at least 1 m below the lowest servicing and excavation.	Soil Engineers	Noted.	Okay
10	The preliminary servicing drawings in the Functional Servicing Report indicate that some road sections (e.g. Street 'B') will have a profile and some sewer sections above existing grades. The geotechnical investigation should be advanced during the detail engineering phase to provide recommendations for placement of fill to support infrastructure.	Soil Engineers	Noted. Recommendation for placement of fill to support infrastructure has been provided in Section 6.1 of the geotechnical report.	Okay
<b>Hydrogeological Investigation</b>				
11	The sanitary sewer and stormwater management facilities should be designed as per Wellhead Protection policies SWG-13 and SWG-14 to protect the groundwater quality.	Candevcon	The storm water management ponds are located outside the zone of influence as per the Well Head Protection mapping included in the CTC Source Protection Plan. The sanitary sewer is also located outside the zone of influence but to ensure no impact it is proposed that the sanitary sewer located within Streets A and B be constructed to a higher standard with tighter joints per SWG-13 and plan is going through the subdivision planning process in accordance with SWG-14	Poorly addressed. The August 3, 2022 Hydrology Report by HLV2K covers water balance, quantifies the difference but other than suggesting LID's can reduce the loss, it offers nothing further

**Hillsburgh Heights Inc. Development (5916 Trafalgar Rd)**  
**2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments**

Item	Ainley 1 <sup>st</sup> Submission Review Comments	Proponents Response Comments		Ainley 2 <sup>nd</sup> Submission Review Comments
<b>Phase I and II Environmental Site Assessment</b>				
12	The Phase II Environmental Site Assessment (ESA) Report describes one soil sample had exceedances for petroleum hydrocarbons. The sample was from one of the two (2) hand sample locations, and near the barn near the northeast property boundary. The soil encountered in the area is considered to be loose soil comprising of sand and silty sand, which is conducive for the spread of contaminants in the subsurface soils. Recommendations in the Phase II ESA Report include: 12.1. further investigation around the hand sample location to define the limits of the contaminated soil. 12.2. removal of the contaminated soil and further testing to confirm the contamination is removed.	HLV2K Engineering	Noted. Removal of the contaminated soil will be completed prior to servicing.	Okay. Note April 25, 2022 ESA2 Recommends delimitation of extent of contamination, removal and confirmation sampling to verify.
13	The site was found to meet the MECP Table 2 Standards RPI in a Potable Ground Water Condition for soil from the boreholes.	HLV2K Engineering	Noted	Okay
14	The boreholes were advanced between 6.2 and 9.8 m below the ground surface and did not find any groundwater. No groundwater was sampled.	HLV2K Engineering	Noted;	Okay
15	Based upon the results of the parameters tested across all boreholes for soil during the Phase II ESA investigation, the soil from the boreholes and hand samples met the applicable MECP Table 2 Residential Parkland Institutional (RPI) Use Site Conditions Standards except for one of the hand samples taken from the site which had an exceedance for Petroleum Hydrocarbons F4 Fraction.	HLV2K Engineering	Noted;	Okay, but include cyanide which was exceeded, see April 25, 2022 ESA2
16	After the contaminated soil is removed and further samples in the same area are analyzed to confirm no contamination is present by a professional qualified to perform this work, the report should be filed as a Record of Site Condition (RSC) with the Ministry of Environment, Conservation and Climate Control.	HLV2K Engineering	Noted;	Okay
<b>Functional Servicing Report</b>				
17	As the development proceeds, please ensure that the latest version of the Town of Erin Development Engineering Manual (Town Standards) is utilized.	Candevcon	Design will be in accordance with the Town of Erin Development Engineering Manual	Okay
18	The north leg of Street 'B' and the Street 'A'-Street 'B'/Street 'G' Intersection indicate significant fill depth is required. For example, on Preliminary Servicing Plan, PS-1, at the Street 'A'-Street 'B'/Street 'G' Intersection (i) the existing grade is 463.0; (ii) the proposed sanitary sewer obvert is 466.60; (iii) the proposed storm sewer obvert is 466.56; and (iv) the proposed road grade is 470.0 (i.e., the sanitary sewer and storm sewer are shown to be above the existing grade, and the proposed road grade is approximately 7 m above the existing grade). Detailed geotechnical recommendations for engineered fill should be required where proposed grades are above existing grades.	Candevcon/S oil Engineers	Detailed geotechnical recommendations will be provided at the detailed design stage.	Comment to be carried forward for follow-up during detailed design.
<b>Sanitary Servicing</b>				
19	Adequate wastewater treatment capacity will be available to accommodate the proposed development.	Candevcon	Acknowledged	Okay
20	The sanitary sewer outlet from the development is proposed through Block 4, which contains SWM Pond 1, to McMurchy Drive (MH 70A to MH 74A). The route of this sewer through Block 4 will need a dedicated 6m access road for maintenance purposes.	Candevcon	Access will be provided	Not done, Dedicated access road along the sanitary sewer needs to be shown to confirm it will not impact the SWM Block.
21	The Town is proceeding with the engineering design for a trunk sanitary collection system in Erin and Hillsburgh. The Town's trunk sewer in Hillsburgh will be extended north on Trafalgar Road and terminate at Upper Canada Drive; therefore, the sanitary sewer from this development will have to be extended to the intersection of Trafalgar Road & Upper Canada Drive.	Candevcon	Acknowledged	Okay
22	The extending of the sanitary sewer to the intersection of Trafalgar Road & Upper Canada Drive, will require a sewer to be constructed on Upper Canada Dr (from McMurchy Ln to Trafalgar Rd) and on McMurchy Ln. The sewer on Upper Canada Dr will need to be deep enough to accommodate the servicing of the existing homes, further west on Upper Canada Dr, in the future.	Candevcon	The sewer on McMurchy and Upper Canada Drive will be designed to accommodate the existing homes	Comment to be carried forward for follow-up during detailed design.

## Hillsburgh Heights Inc. Development (5916 Trafalgar Rd) 2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments

Item	Ainley 1 <sup>st</sup> Submission Review Comments	Proponents Response Comments		Ainley 2 <sup>nd</sup> Submission Review Comments
23	Given that the proposed Draft Plan includes the lot layout, the sanitary drainage design sheet should be based on population per dwelling unit (e.g., 3 people per single detached, semi-detached, townhouse) rather than population per hectare. This can be addressed during the detail design phase.	Candevcon	Sanitary design sheets have been revised based on unit count	Partially done, residential is now 2.8 people/unit but school is at 2.51 ha and 60 people per ha should be 150 not 140 and need to provide calcs to confirm commercial equivalent of 281 people for 4.8 ha
24	Regarding the Sanitary Drainage Design Sheet, 24.1. Given the relatively small design flows, the spreadsheet calculating the design flows and sewer flow capacities should use units of "l/s" rather than "m3/s". This can be addressed during the detail design phase. 24.2. For each pipe section, the upstream and downstream structure numbers should match those on the Sanitary Drainage Plan (e.g., for Area 4, the downstream structure number should read MH10A). 24.3. All the pipe sections shown on the Sanitary Drainage Plan should be represented in the Design Sheet (e.g., sanitary pipe from structure MH15A to MH 16A should be included). 24.4. In structures with more than 1 inlet, the outlet pipe should include the design flow from each inlet plus the area to the next structure downstream. The accumulated population appears to omit a few sub-area populations at structures with more than 1 inlet. 24.5. The area for Park Block 1 should be included to account for infiltration, even if no facility building is included. 24.6. The accumulated area for infiltration should be accounted from MH70A through MH74A (i.e., through SWM Pond Block 4).	Candevcon	The sanitary design sheets have been updated	Comment to be carried forward for follow-up during detailed design.
<b>Water Servicing</b>				
25	The Town should confirm that adequate water treatment capacity and storage is available to accommodate the proposed development.	Candevcon	Noted	Pending the finalization of the Town's Water Model, which is anticipated in the next couple of months, further details will be provided regarding the need for: •Any external watermain upgrades on Trafalgar Road or adjacent streets to accommodate the proposed development. •The development of a new Municipal well and/or an additional Fire Storage Reservoir in Hillsburgh to accommodate the proposed development.
26	The Town is proceeding with the development of a new water model for the existing and future water system(s). Subsequent to the completion of the water model the proposed water distribution network will need to be reviewed to confirm that it can supply the necessary flows and pressures as per the Town Standards, Ministry of the Environment, Conservation and Parks (MECP), and Fire Underwriters Survey with respect to maximum day flows, peak hour flows, and maximum day plus fire flows.	Candevcon	Acknowledged	On-going
27				To provide a looped watermain a watermain should be extended through Block 7 and connected to the dead-end watermain at the end of Upper Canada Drive.
<b>Storm Drainage and Storm Management</b>				
28	The Existing Drainage Parameters in Table 1 should correspond to the catchment areas outlined on Drawing EX-DR- 1, Existing Drainage Plan. Discrepancies that should be resolved include, but not limited to: 27.1. Drawing EX-DR-1 shows Area A-1 flowing through the northwest corner of the site, but TABLE 1 indicates Area A-1 directs runoff to McMurchy Lane just south of the southeast corner of the site. 27.2. TABLE 1 indicates only 2 external areas direct runoff through the subject site, but Drawing EX-DR-1 show the area on the north directing runoff from 3 sub-areas. 27.3. The sum of the areas in TABLE 1 does not equal the sum of the areas on Drawing EX-DR-1	Candevcon	Drainage Areas are made consistent between Plans, Reports and Calcs; Table 1 is fixed with correct corresponding areas. Table 1 revised in updated Report.	Comment to carried forward and addressed through detailed design. Note: There are still some minor discrepancies between Table 1 and GR-1, and the total area draining to the ponds in the VO model in comparison to the total existing drainage area.

**Hillsburgh Heights Inc. Development (5916 Trafalgar Rd)**  
**2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments**

Item	Ainley 1 <sup>st</sup> Submission Review Comments	Proponents Response Comments		Ainley 2 <sup>nd</sup> Submission Review Comments
29	The Preliminary Grading Plan PG-1 or the Preliminary Servicing Plan PS-1 should include existing and proposed grades at all property corners to confirm that the proposed lot layout is feasible.	Candevcon	Grading at all corners will be provided at the detailed design stage	Comment to be carried forward for follow-up during detailed design.
30	Drawing EX-DR-1 should show be extended to show the upper limits of the external catchment areas, or the report should have a supplementary drawing showing the limits of the external catchment areas. In addition, the size of each external area should be provided.	Candevcon	External catchment areas from North is added to the EX-DR-1 Plan.	Done
31	The catchment areas for each pond used in the Visual Otthymo (VO) modelling should match the catchment areas contributing runoff to each pond summed in the storm sewer design sheets. The design sheets show a total of 18.52 ha contributing runoff through the storm sewers to Pond 1, and 29.12 ha contributing runoff through the storm sewers to Pond 2. The total area contributing runoff through storm sewers is 47.64 ha, and excludes the Pond Block areas. The VO modelling indicates that the total area (including the pond block areas) is 21.8 ha (for Pond 1, Table III, page 10) and 24.08 ha (for Pond 2, Table VI, page 12), summing to 45.88 ha, which is less than the areas shown on the storm design sheets. This discrepancy should be resolved.	Candevcon	Drainage Areas are made consistent between Plans, Reports and SWM Calculations. VO Model data coordinated with Storm Drainage Plans.	There are still discrepancies to be resolved. The most significant, which are to be addressed prior to Draft Plan approval, as they may impact the storm sewer design. The storm sewer design sheets indicate a contributing area of 19.99 ha to Pond 1 while the VO model is based on 21.68 ha to the facility. There is an error on the storm sewer design sheet for the total area to Pond 2, identified as 9.52 ha. The VO model is based on 26.26 ha to this pond.
32	The information on the Storm Drainage Plan should be reflected in the Storm Drainage Design Sheets, including, for example, all pipe sections, pipe percent grades, using runoff coefficients as per the Town Standards.	Candevcon	Storm Drainage Plan and Design Sheets have been revised	Partially done, they need to provide calculations supporting C=0.59 for ext-4 and 0.4 (elsewhere it is 0.3)
33	Several pipe flow velocities in the Storm Drainage Design Sheets exceed 4.5 m/s. Pipe flow velocities for design flows and flows when the sewer is flowing full should be as per the Town Standards. This can be addressed during the detail design phase.	Candevcon	Acknowledged	Comment to be carried forward for follow-up during detailed design.
34	The Stormwater Management System should consider the peak flows from Hurricane Hazel to determine what event has the critical design flows (i.e., 100-year or Hurricane Hazel). The critical design flows should be used to demonstrate that overland flow conditions will not cause unacceptable flooding damage to private property and not exceed flood storage depths per the Town Standards.	Candevcon	Refer to VO Results appended for Regional Storm run. In this case peak flows from 100-year is higher than Regional flows.	Done
35	The side slopes in both ponds should not be steeper than 5:1.	Candevcon	Pond slopes have been updated	The Town has updated their requirements for pond grading. Pond blocks must be adjusted to account for grading requirements in accordance with ERIN SD 501, including elements such as a 7:1 safety shelf in the vicinity of the permanent pool, and a 6 m buffer between residential lots and the top of pond slope.
36	Stormwater Management (SWM) Pond emergency spillways should be shown on the drawings, located a minimum of 3.0 m horizontal clearance from the outlet control structures. The spillways should have a minimum of 0.30 m freeboard over the design flow depth.	Candevcon	Weirs will be designed at the detailed design stage	Comment to be carried forward for follow-up during detailed design.
37	SWM Pond maintenance access roads should be shown to confirm the block size is satisfactory. The turning radii for the maintenance access should be confirmed with a swept path analysis, and the access road extending from the public road rights-of-way to the bottom of the ponds, to the inlets and outlet controls points should not exceed 6%. These maintenance access roads should be independent from any proposed walking trails around the facilities.	Candevcon	Access roads will be detailed as part of the Final Design.	We require all details to be shown at this stage to confirm that the pond blocks are large enough. There must be 2 access points from the municipal road with a maximum allowable grade of 10%, and a minimum curve radii of 12. If 2 access points cannot be provided to a pond, either turning circles (preferred) or hammerheads will be required within the pond blocks in accordance with Section 8.14.7 of the new Town Standards. Sediment drying areas are required for each facility in accordance with Section 8.10.9 of the revised Town Standards

## Hillsburgh Heights Inc. Development (5916 Trafalgar Rd) 2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments

Item	Ainley 1 <sup>st</sup> Submission Review Comments	Proponents Response Comments	Ainley 2 <sup>nd</sup> Submission Review Comments
38	Provide further details regarding the outlet from SWM Pond No 2, at the western limit of the development, as the flows from the pond will traverse a parcel of property which is not owned by the applicant before reaching the creek and ultimately the wetland area to the south.	Candevcon  This item was discussed during the site walk with the CVC on July 16, 2021; the low point in the field was identified at the south west corner of the SWM Pond...this is where the surface runoff from the westerly part of the subdivision exits the property and drains overland [no swale] through the treed area to a clearing that runs north south from the Additional Lands west of the subdivision towards a wetland located west of Upper Canada Drive; ... the clearing has a slightly defined grass swale. Since, the treed area and the clearing evidently receive runoff from the subdivision land, it was agreed that the post development runoff from the subdivision should mimic the pre-development condition and continue to drain overland [i.e. riparian rights]. Accordingly, the outlet from the SWM Pond will be designed to mimic pre- development conditions ... flow controlled to pre-development levels, a plunge pool/stilling basin to dissipate energy, and a spreader swale.	Written confirmation from CVC will be required to confirm that the proposed outlet from SWM Pond No. 2 is sufficient, as well as minutes from the July 16, 2021 site walk. The explanation provided in the comment matrix is unclear since riparian rights do not apply to overland flow. Clarification will be required from CVC regarding the basis on how the receiving lands can be classified as a watercourse in order for riparian rights to apply. Otherwise, written permission from the Owner of the adjacent lands for permission for the outlet to discharge to this area as proposed.
38			The Town has updated their rainfall-intensity-duration-frequency (IDF) curves as part of the Town's new Design Standards (dated May 2022) and incorporated considerations for climate change. The SWMHYMO models and storm sewer design sheets should be updated accordingly based on the revised IDF information and the design of the sewers and ponds modified accordingly, as necessary.
<b>Traffic Impact Study</b>			
39	In Section 5.1, Other Background Traffic, for trip distribution and assignment, there should be development traffic traveling to/from Orangeville (the northeast) via Trafalgar Road North, and travelling to/from Guelph or Fergus (the northwest and southwest). The 47% to/from the east via Wellington Road 22 appears too high compared to the existing background traffic and the split between northbound and southbound traffic counts on Trafalgar Road fronting the proposed subdivision.	Candevcon  The trip distribution is based on the results from the 2016 Transportation Tomorrow Survey. The results from the 2016 Transportation Tomorrow Survey that are provided in Appendix F (where the origin – destination table is filtered to only show trips originating from Hillsburgh (2006 TTS Zones 8370)) indicate that trips from Hillsburgh will not be going to Orangeville, Guelph or Fergus during the Weekday A.M. Peak Period. After reviewing the existing traffic volumes during the A.M. Peak Hour that are provided in Figure 3, at the George Street/Mill Street at Trafalgar Road North, Upper Canada Drive/Church Street at Trafalgar Road North and Howe Street at Trafalgar Road North intersections, traffic heading southbound by leaving local roads to enter Trafalgar Road North is significantly higher than traffic heading northbound, which reflects the trip distribution being used.	Okay
40	In Section 6.3, Trip Distribution and Assignment, the distribution of trips generated by the school should be a different distribution than the trips generated by the residences, and the distributions should be shown on two (2) different turning movement diagrams.	Candevcon  The trip distribution that was applied for the proposed residential land uses is different than the trip distribution that was applied for the proposed elementary school. The report was revised to show the trip assignment of trips generated by the proposed residential land uses and trips generated by the proposed elementary school separately.	Done
41	In Section 6.3, Trip Distribution and Assignment, the number of trips generated by the school from within the subdivision during the AM peak hour is assumed to be 22 (i.e., 10% internal capture).	Candevcon  In the Traffic Impact Study that was prepared in November 18th, 2021, during the A.M. Peak Hour, with 148 inbound trips using the proposed Street 'A'/Howe Street at Trafalgar Road North and proposed Street 'E' at Trafalgar Road North intersections and with the proposed Residential Subdivision generating 221 inbound trips, it is apparent that 73 trips will be coming from within the Subject Subdivision to enter the elementary school. With the elementary school generating 163 inbound trips, the internal capture rate is 45%.	Okay
42	Based on the 2031 PM total traffic volumes and MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, a 25 m northbound left turn lane on Trafalgar Road North at Street 'E' is warranted.	Candevcon  The report was revised to include a left-turn lane warrant analysis.	Partially done, the LT turn warrant shows a 25m length requirement, but only provides 15m

**Hillsburgh Heights Inc. Development (5916 Trafalgar Rd)**  
**2<sup>nd</sup> Submission of Draft Plan - Engineering Peer Review Comments**

Item	Ainley 1 <sup>st</sup> Submission Review Comments	Proponents Response Comments		Ainley 2 <sup>nd</sup> Submission Review Comments
43	Based on the 2031 PM total traffic volumes and MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, a 25 m northbound left turn lane on Trafalgar Road North at Street 'A' is warranted. A 15 m southbound left turn lane should also be considered at that intersection to assist with sight lines for southbound left turning drivers.	Candevcon	The report was revised accordingly.	Done
44	Street 'A' will function as a minor collector from Street 'B'/Street 'G' westerly to Street 'D' and should have a 23 m wide right-of-way per the Engineering Standards.	Candevcon	The Draft Plan of Subdivision was revised accordingly.	Done
45	The Street 'A'-Street 'B'/Street 'G' Intersection should operate with a reasonable level of service under stop sign control on Street 'B' and Street 'G'. A roundabout is usually considered where a traffic signal is required. In addition, a stop sign controlled intersection is easier for pedestrians to cross, especially with the proximity to a school (proposed to be located at the northwest quadrant of the intersection).	Candevcon	The roundabout location was discussed and supported by the Town's Urban Design team, which will create an entry feature into the residential subdivision with a centre median along Street "A". From a traffic perspective, the level of service at the roundabout intersection will operate better than a traditional stop-controlled scenario. The roundabout will also be equipped with proper pedestrian crossings at each of its approaches.	The documentation provided does not address our concerns for pedestrians, particularly young children, given that it is directly adjacent to the proposed school site.
46	Signalized pedestrian crossings should be considered near the school for crossing Street 'A' and for crossing Trafalgar Road North at the Street 'A'/Howe Street Intersection.	Candevcon	If and when the School Board decides to select this location, there will be safe pedestrian crossings installed for students at the intersection. We will explore more options during detailed design stage for other pedestrian crossing along Street 'A'.	Comment to be carried forward for follow-up during detailed design.
47	Street 'J' and Street 'B' should be aligned directly across from each other at Street 'A'.	Candevcon	The Draft Plan of Subdivision was revised accordingly.	Done
48	The Preliminary Development Plan, Figure 2, indicates that Block 6 and Block 7 are the only 2 accesses to "Other Lands Owned by Applicant" (Grey Area) abutting the west end of the development plan. The traffic generated by the Grey Area may significantly affect the operations of traffic through the Street 'A'-Street 'B'/Street 'G' Intersection. A sensitivity analysis should be completed to determine the quantity of traffic that could be generated by the Grey Area and if that quantity will conceivably warrant traffic signals at the Street 'A'-Street 'B'/Street 'G' Intersection.	Candevcon	These lands lie outside of the Hillsburgh Urban Boundary and are designated under Agricultural and Greenland. The future development potential for these lands, since they lie outside the Urban Boundary, will only be recognized once the lands are brought into the Urban Boundary, which could take up to 30 years. Since it is anticipated that the potential development will be built after the 2031 horizon year, a sensitivity analysis will not be provided.	Okay
49	The TIS should discuss sight line distances at the proposed Street 'A'-Trafalgar Road North Intersection, and at the Street 'E'- Trafalgar Road North Intersection. The discussion should reference the required sight line distance for stop-sign controlled intersections based on TAC design standards. This can be addressed during the detail design phase.	Candevcon	For the proposed Street 'A'/Howe Street at Trafalgar Road North and proposed Street 'E' at Trafalgar Road North intersections, the report was revised to provide a sight distance analysis for vehicles leaving the minor roads.	Done, but table should be for design speed of 70km/hr which requires 135m not 113m, but more than 200m is available so it is okay.

# Memo



**To:** Pasquale Costanzo, C.E.T., County of Wellington  
**From:** Tim Kooistra, C.E.T., Dillon Consulting Limited  
**Date:** December 16, 2022  
**Subject:** Briarwood Subdivision, Hillsburgh, Revised Traffic Impact Study – High-Level Peer Review  
**Our File:** 21-2592

Dillon Consulting Limited (Dillon) has been retained by the County of Wellington to undertake a follow-up peer review of the response and revised Traffic Impact Study (TIS) for the proposed Briarwood Subdivision found in the community of Hillsburgh, located in the Town of Erin. The response letter associated with the initial TIS was submitted by Candevcon Limited (Candevcon) on July 22, 2022, while the revised TIS was issued on July 28, 2022.

Earlier this year (in May 2022), Dillon provided a peer review of the initial TIS that was developed by Candevcon in November 2021

This memorandum documents the high-level findings of our peer review of the revised TIS.

1.0

## High-Level Peer Review Summary

The following represents a high-level summary of the findings of this peer review exercise:

- The revised study is difficult to read and to follow.
- The draft subdivision plan has been updated and a portion of lands that were previously identified as residential in the initial subdivision plan are now assumed to be commercial and have been indicated as a background development, without detailed analysis being undertaken. The TIA should include an analysis of the final buildout conditions at the end of the final phase.
- The revised report assumes that a commercial driveway access to Wellington Road 24 (Trafalgar Road) will be established. It should be noted that this driveway may or may not be permitted by Wellington County, nor has this potential commercial driveway been proposed or discussed previously.
- The report does not provide specific rationale why a road connection to McCurchy Lane cannot be implemented rather than introducing a new (Street 'E') connection to Wellington Road 24.
- The report and subsequent analyses appears to underestimate the amount of traffic generated by the subject subdivision and the background developments that would travel to/from the north on Wellington Road 24 outside of Hillsburgh.
- An 80% internal capture rate was applied to the future commercial lands while a 50% internal capture rate was applied to the proposed elementary school (institutional land uses). These rates are very unlikely to be this high as the commercial site would not likely absorb most of the subject residential trips, especially considering that the residential lands are generally within easy walking distance to the commercial site.

- For the commercial component within the subdivision, appropriate trip generation rates, pass-by rates and internal capture rates should be applied and calculated and assigned separately from the residential and institutional land uses (considering a reasonable interaction between land uses).
- The number of trips generated by the proposed elementary school should also be calculated separate from the residential and commercial land uses.
- The required design speed of 70 km/h (posted 40 km/h + 30 km/h) that was required to be utilized for the sight distance assessment was not considered in the subsequent analyses.
- Given the vertical profile of Wellington Road 24 fronting the subject subdivision, northbound left-turn lanes and southbound right-turn lanes are recommended to be constructed at each proposed intersection, noting the specific storage lengths, parallel lengths and tapers of these turn lanes will need to be determined based on a 70 km/h design speed, requirements found within TAC's *Geometric Design Guidelines* as well as based on findings from the future traffic capacity analysis.

As a result, this second TIS submission is recommended not to be accepted and a subsequent traffic addendum should be prepared and submitted. The future submission should provide an analysis for each buildout phase of the development, and consider each individual land use (residential, commercial and institutional) separately. Each of the different land uses should have different trip generation rates, assignments, and distributions. Internal capture rates and pass-by rates for some of the proposed land uses should also be included, at reasonable rates.

The subsequent submission should be limited to the future proposed intersections along the Wellington Road 24 corridor that service and directly connect to future roads within the subdivision, in order to confirm the required lane geometry and traffic control at these future (proposed) intersections.

Yours sincerely,

**DILLON CONSULTING LIMITED**

Prepared by:

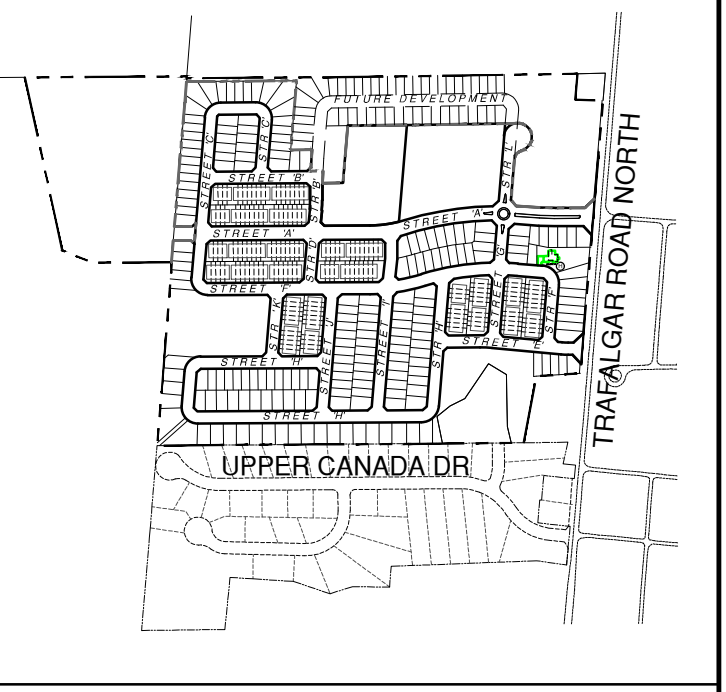
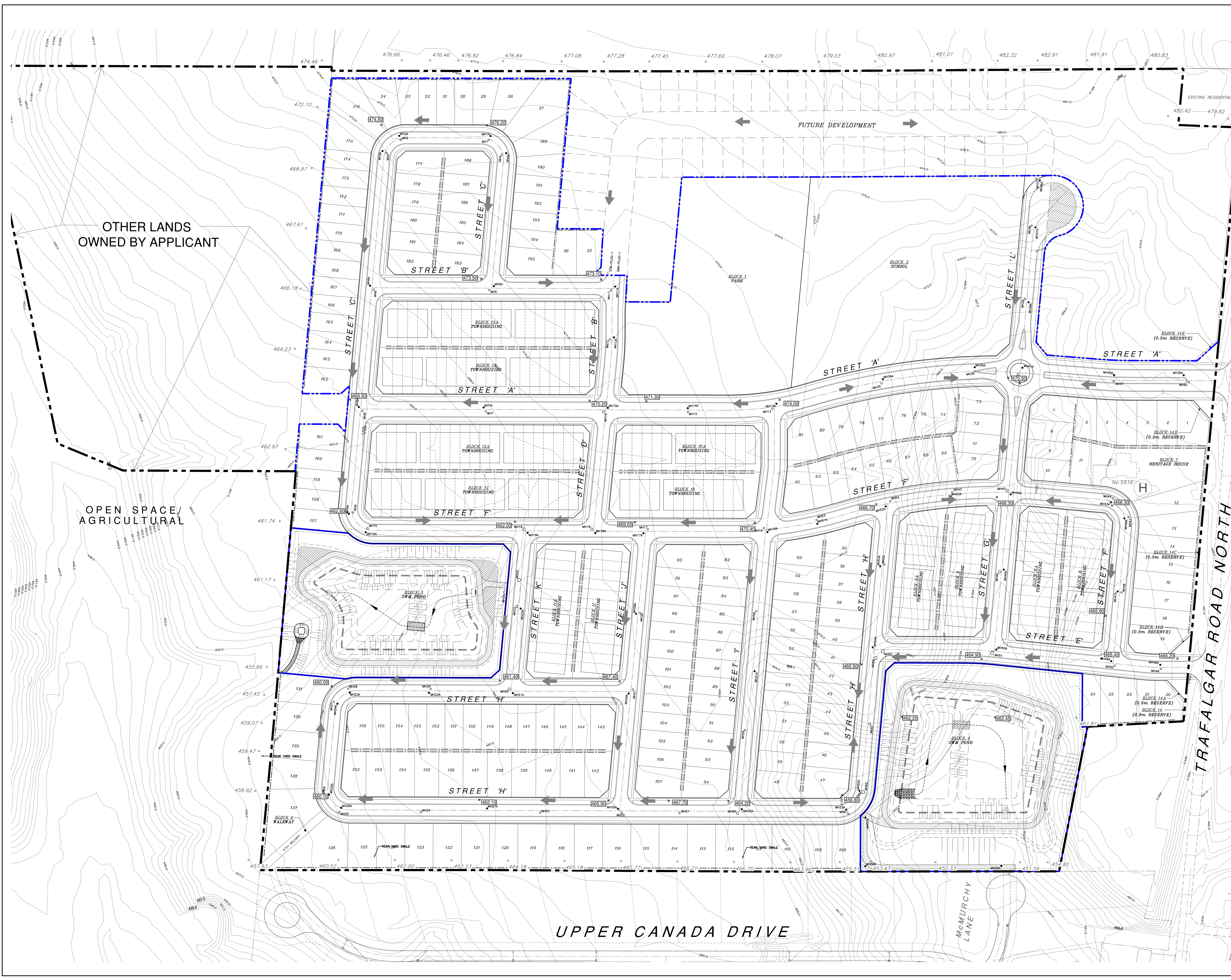


Tim Kooistra, C.E.T.  
Traffic and Transportation Technologist

Reviewed by:



Doug Green, P.Eng.  
Transportation Engineer



**KEY PLAN**

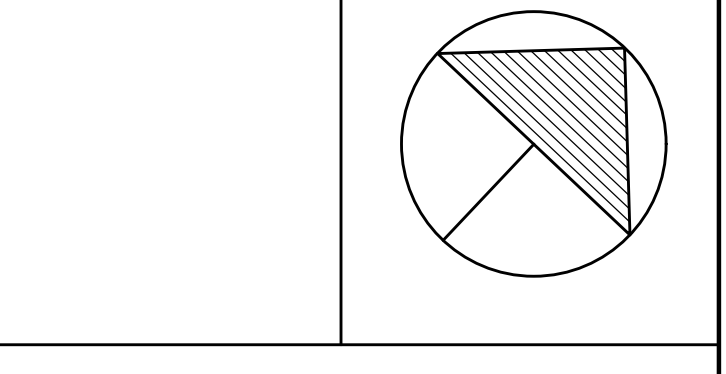
- LEGEND:**
- LIMIT OF SUBDIVISION
  - PHASING LIMIT
  - - - - EXISTING PROPERTY LINE
  - 481.80 PROPOSED ELEVATIONS
  - 455.51 EXISTING ELEVATIONS
  - - - - INFILTRATION TRENCH
  - - - - REAR YARD SWALE
  - ➔ OVERLAND FLOW ROUTE

- REFERENCE DRAWINGS:**
1. REFER TO DRAFT PLAN (PL-1) PREPARED BY CANDEVCON LIMITED FOR SUBDIVISION LAYOUT.
  2. REFER TO DRAWING PS-1 FOR INFORMATION ON STORM, SANITARY & FDC

NO.	DESCRIPTION	DATE	BY
1	THIRD SUBMISSION	2023-02-15	SL
2	SECOND SUBMISSION	2022-07-29	SL

**REVISIONS**

**CDI CANDEVCON LIMITED**  
CONSULTING ENGINEERS AND PLANNERS  
TEL (905) 794-0600 FAX (905) 794-0611



**HILLSBURGH HEIGHTS INC.**  
RESIDENTIAL SUBDIVISION  
5616 TRAFALGAR ROAD NORTH  
PART 1 OF PLAN 61R-9590  
PART OF LOT 26, CONCESSION 7  
HILLSBURGH URBAN AREA  
TOWN OF ERIN

**PRELIMINARY GRADING PLAN**

DRAWN BY:	E.A.M	PROJECT No.:	W21081
CHECKED BY:	S.L	DRAWING No.:	
SCALE:	1:1000		
DATE:	OCT 1st, 2021		

**GR-1**