Proposed Residential Development – Smithville Phase 3A/Block Plan 9 Submission Smithville Ontario – Noise Impact Study

Draft Report

July 19, 2024

Prepared for:
Lockbridge Development Inc.
25 Sable Street
North York ON M6M 3K8

Prepared by:
Stantec Consulting Ltd.
400-2100 Derry Road West,
Mississauga ON L5N 0B3

Project Number:
161414473

Limitations and Sign-off

The conclusions in the Report titled Proposed Residential Development – Smithville 3A/Block Plan 9 Submission, Smithville Ontario – Noise Impact Study are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Lockbridge Development Inc. (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by: _____
Signature

Kingson Ho, B.Sc.
Acoustics, Noise & Vibration Specialist
Printed Name and Title

Reviewed by: _____ Approved by: _____
Signature Signature

Galen Wong, M.A.Sc.
Acoustics, Noise and Vibration Specialist
Printed Name and Title

Mohammed Salim, MBA, P.Eng.
Associate, Senior Acoustics,
Noise and Vibration Engineer
Printed Name and Title

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Lockbridge Development Inc. to prepare a Noise Impact Study in support of the Block Plan approval for the lands within the Southern 3A limits of the Urban Boundary expansion in Smithville, in the Township of West Lincoln, Ontario, noted as Block Plan Area 9 (the Site) in the Land Use Concept Plan (Appendix B). The study is limited to the area indicated by the project manager as the Block Plan located west of the trail behind the Shute Road residences. The proposed development includes a total of 498 low density residential dwellings and 459 medium density residential dwellings.

The purpose of this study is to assess road traffic noise impact from the surrounding roads and stationary noise sources in the vicinity on the proposed development and to recommend noise control measures where needed. Road traffic noise from Port Davidson Road and Townline Road has been identified as potential impact on the development. This assessment was conducted in accordance with the applicable Ministry of the Environment, Conservation, and Parks (MECP) Environmental Noise Guideline NPC-300, Part C Land Use Planning (MECP 2013), based on the Southeast Smithville – Block Pan Area 9 Preferred Land Use Concept, dated January 05, 2024, prepared by Arcadis. A site visit was conducted on June 26, 2024 and a review of adjacent parcels of land during a site visit revealed that there are no significant stationary noise sources in the area surrounding the site.

Given that no rail lines exist within 500 m of the proposed site and that the site is beyond the NEF-25 noise contours for local airports, an assessment of rail noise and vibration and aircraft traffic noise was not required or assessed in this noise study. A review of adjacent parcels of land during a site visit revealed that there are no significant stationary noise sources in the area surrounding the site.

Four (4) representative points of reception (PORs) were identified and considered for this assessment. The road traffic noise levels at the PORs were predicted using STAMSON v5.0 noise modelling software which implements the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) (MOE 1989). ORNAMENT is one of the MECP recommended road traffic noise prediction methods.

Based on the road traffic noise level predictions at the identified PORs, noise warning clauses are required, in addition to complying with the Ontario Building Code. Standard building components meeting Ontario Building Code specifications are expected to sufficiently mitigate the impact of road traffic noise to comply with applicable noise criteria.

The following suggested warning clauses are adapted from MECP for PORs within the Site fronting Townline Road or Port Davidson Road. The warning clauses are to be included in the agreements of Offers of Purchase and Sale:

Warning clause for the first row of residential buildings along Port Davidson Road:

Type C Warning Clause:

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks.”

Noise control measures, such as noise barriers and warning clauses may be required if the OLAs for these lots are facing or exposed to Port Davidson Road.

Warning clauses for the first two rows of residential buildings directly exposed to Townline Road:

Type A Warning Clause:

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Type C Warning Clause:

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks.”

The noise impact assessment and corresponding noise control measures presented in this report shall be reviewed and updated as needed once the detailed design, floor plan, architectural drawings and wall/window construction details are available.

Table of Contents

List of Tables

List of Appendices

Acronyms / Abbreviations

AADT	Annual Average Daily Traffic
LDR	Low Density Residential Zone
MDR	Medium Density Residential Zone
MECP	Ontario Ministry of the Environment, Conservation and Parks
NEF	Noise Exposure Forecast
NWC	Noise Warning Clause
OBC	Ontario Building Code
OLA	Outdoor Living Area
ORNAMENT	Ontario Road Noise Analysis Method for Environment and Transportation
POR	Point of Reception
STC	Sound Transmission Class

1 Introduction

Stantec Consulting Ltd. (Stantec) was retained by Lockbridge Development Inc. to prepare a Noise Impact Study in support of the Block Plan approval for the proposed residential development within the Southern 3A limits of the Urban Boundary expansion in Smithville, in the Township of West Lincoln, Ontario, noted as Block Plan Area 9 (the Site) in the Land Use Concept Plan. The study is limited to the area indicated by the project manager as the Block Plan located west of the trail behind the Shute Road residences. The proposed development includes a total of 498 low density residential dwellings and 459 medium density residential dwellings.

The purpose of this study is to assess road traffic noise impact from the surrounding roads and stationary noise sources in the vicinity on the proposed development and to recommend noise control measures where needed. Road traffic noise from Port Davidson Road and Townline Road has been identified as potential impact on the development.

A site visit was conducted on June 26, 2024 and a review of adjacent parcels of land during a site visit revealed that there are no significant stationary noise sources in the area surrounding the site. The existing background sound level in the area is dominated by the road traffic noise from Port Davidson Road and Townline Road. Road traffic noise from Shurie Road was found to be insignificant at the site and was not included in this assessment.

Given that no rail lines exist within 500 m of the proposed site and that the site is beyond the NEF-25 noise contours for local airports, an assessment of rail noise and vibration and aircraft traffic noise was not required or assessed in this noise study.

This assessment was conducted in accordance with the applicable Ministry of the Environment, Conservation, and Parks (MECP) Environmental Noise Guideline NPC-300, Part C Land Use Planning (MECP 2013), based on the Southeast Smithville – Block Pan Area 9 Preferred Land Use Concept, dated January 05, 2024, prepared by Arcadis.

The aerial view of project footprint and POR locations are shown in Figure 1, Appendix A.

2 Site Location and Plan

The Site is bounded by parcels of land zoned as residential space and Townline Road to the north, Shurie Road to the east, Port Davidson Road to the west, and agricultural areas to the south. The study is limited to the area indicated as the Block Plan Boundary located west of the trail behind the Shurie Road residences.

The proposed Site will be composed of blocks currently zoned as Low Density Residential (LDR), Medium Density Residential (MDR), and Commercial, along with other non-residential features such as the NP5 park and stormwater management areas. The proposed site layout is presented in Appendix B

An excerpt from the Township of West Lincoln, showing the zoning of lands adjacent to the Site, is attached in Appendix C.

3 Guidelines and Criteria - Transportation Noise

The Ministry of the Environment, Conservations and Parks (MECP) NPC-300, Part C, Environmental Noise Guideline for Land Use Planning (MECP 2013) is applicable and considered for this noise impact assessment.

Noise criteria as set by the MECP guidelines are adapted for assessing road traffic noise impact on the proposed development. Table 3.1 provides a summary of the applicable limits for road traffic noise assessment.

Table 3.1 MECP Noise Criteria for Road Traffic

Type of Space	Time Period	Noise Criteria L_{eq} (dBA)
Indoor Living/Dining room	Daytime - (07:00 - 23:00)	45
	Nighttime - (23:00 - 07:00)	45
Indoor Sleeping Quarters (Bedrooms)	Daytime - (07:00 - 23:00)	45
	Nighttime - (23:00 - 07:00)	40
Outdoor Living Areas (OLA)	Daytime - (07:00 - 23:00)	55
	Nighttime - (23:00 - 07:00)	N/A

An OLA is defined as an outdoor amenity area where the enjoyment of the outdoor environment is important during the daytime period (07:00 to 23:00). Such areas may include:

- The backyard or patio within 3 meters (m) of the rear wall of a residential unit, or the recreational area designated on the development application;
- The common outdoor area allocated for recreational purposes outside residential buildings such as apartments or condominiums;
- Balconies[1]; and
- Parks and open spaces identified by the Area Municipality for passive recreation purposes within a plan of subdivision.

[1] Balconies are considered part of the outdoor living area where they are the only outdoor living area for the occupant and meet the following conditions: depth greater than 4 m; Outside exterior building façade; and unenclosed.

4 Noise Control Requirements

In accordance with MECP Guidelines, where predicted noise levels exceed the criteria in Table 3.1, appropriate warning clauses and/or noise control measures will be required as a condition of the development application. These noise control measures are summarized in terms of ventilation requirements, building component requirements, and outdoor noise controls in Table 4.1, Table 4.1 and Table 4.3 respectively, and are further explained below.

Noise Warning Clause (NWC): Since sensitivity to noise varies among individuals, the projected noise level may be allowed to exceed the noise level objective by up to 5 dB without attenuation provided that a clause warning future occupants of the potential noise concern is included in the Regional or Area Municipal Development Agreement whereby the owner agrees to advise future owners or tenants through all offers of purchase and sale, and rental agreements.

Provision for Air Conditioning: Units with this requirement must be designed to allow future occupants to install central air conditioning which will provide alternative ventilation if windows must be closed to reduce interior noise levels. In general, a forced air ducted heating system suitably sized and designed to permit the future installation of a central air conditioning system by the occupant is required. A Noise Warning Clause is required to be included in agreements of Offers of Purchase and Sale to notify future occupants of this provision. The provision for, or installation of, window or through-the-wall box air conditioners is not generally acceptable as a means of satisfying the requirement for air conditioning.

Central Air Conditioning or Provision of Alternate Ventilation: Central air conditioning is required where projected interior noise levels are more than 10 dB in excess of the noise criteria limits, so that windows may be closed to provide effective noise attenuation.

Building Components Designed to Achieve Indoor Sound Level Criteria: Special wall, window, and door construction that exceeds Ontario Building Code specifications may be required as determined by Sound Transmission Class. The recommendations must comply with local regulations; it should be clearly stated how the recommendations differ from Ontario Building Code requirements.

Table 4.1 Noise Control Ventilation Requirements for Indoor Living Areas

Predicted Indoor Noise Level[1], L_{eq} (dBA)		**Required Noise Control Measures**
Daytime (07:00 to 23:00)	**Nighttime (23:00 to 07:00)**	
46-55	41-50	Provision for air conditioning (A/C) and NWC[2] (Type C)
56+	51+	Central A/C or other ventilation system installed prior to occupancy and NWC (Type D)

Notes:

[1] Defined as 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.

[2] NWC is Noise Warning Clause.

Table 4.2 Building Component Requirements for Indoor Living Areas

Predicted Indoor Noise Level[1], L_{eq} (dBA)		Required Noise Control Measures
Daytime (07:00 to 23:00)	**Nighttime (23:00 to 07:00)**	
46-55	41-50	Compliance with Ontario Building Code
56+	51+	Building components designed and/or specified to achieve indoor sound level criteria

Note:

[1] Defined as 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.

Table 4.3 Noise Control Requirements for Outdoor Living Areas

Predicted Outdoor Noise Level, L_{eq} (dBA)	Required Noise Control Measures
Daytime (07:00 to 23:00)	
56-60	NWC[1] (Type A)
61+	Alternative Land Use, Alternative Draft Plan Designs, Barriers and Possible NWC (Type B)

Note:

[1] NWC is Noise Warning Clause

5 Points of Reception

Noise Impacts are evaluated at physical locations defined as points-of-reception (POR), which represent the noise-sensitive residential dwellings proposed at the Site. A summary of the representative PORs and their setback distances from significant roads considered in this assessment is provided in Table 5.1.

The facade PORs considered in the assessment were located on the exterior plane of window, at the second-floor height (4.5 m) of each storey as representative of the indoor living areas. The site plan only identifies parcel/lots and does not identify the location of the dwellings or Outdoor Living Areas (OLA). Thus the OLAs are not assessed separately in this assessment. The approximate locations of PORs considered in the assessment are shown on Figure 1 in Appendix A.

Table 5.1 Points of Reception Summary

POR ID	POR Type	POR Height (m)	Reference Road Setback Distance[1] (m)	
			Townline Road	Port Davidson Road
R1	Facade	4.5	194	20
R2	Facade	4.5	96	161
R3	Facade	4.5	254	179
R4	Facade	4.5	329	423
R5[2]	Facade	4.5	148	578
R6[2]	Facade	4.5	20	622

Notes:

[1] Refers to the setback distance from the centreline of the reference road to the POR.

[2] STAMSON calculations account a maximum distance of 500m.

6 Assessment Methodology

The road traffic noise levels at the PORs were predicted in accordance with the MECP guideline using STAMSON v5.0 noise modelling software which implements the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) (MOE 1989). ORNAMENT is one of the recommended road traffic noise prediction method by the MECP.

STAMSON noise model was configured to account for the separation distance between the roads and PORs and set to calculate road traffic noise levels over an acoustically reflective intermediate surface (pavements, hard packed gravel, earth, etc.) between the roadway and the PORs.

The Annual Average Daily Traffic (AADT) counts for Townline Road and Port Davidson Road were not available as inputs for the traffic noise modelling. One-day average traffic data provided by Stantec Transportation team for 2024 is expected to be representative of the AADT and is used for this traffic noise modelling. The data was projected to 2034 forecasted traffic volumes which were used as inputs for the traffic modelling.

Based on the Township of West Lincoln Infrastructure and Transportation Plan (Appendix C), Townline Road and Port Davidson Road are classified as arterial roads, and Shurie Road as a local road. Based on the road classifications and observations during the site visit, Shurie Road was not a major contributor of traffic noise to the site, hence it is not included in this assessment.

A summary of the forecasted 2034 road traffic data used in the noise model is provided in Table 6.1. Traffic composition (% of automobiles, % of medium trucks, % of heavy trucks), and the daytime/nighttime traffic volume split were provided by Stantec Transportation, attached as Appendix D. Traffic growth rate was not provided thus it is assumed at 6.6% per year based on Stantec data from other traffic projects in the area. The speed limit for Townline Road was noted to be 50 km/h. No speed limit sign was observed for Port Davidson Road. Based on a report by the Public Works/Recreation/Arena Committee of the Township of West Lincoln, titled *Speed Limit Review Policy & Speed Limit Reduction Requests* (Report PW-29-2020, dated December 7, 2020), the speed limit along Port Davidson Road is noted to be 80 km/h between Townline Road and Sixteen Road, which is the segment of Port Davidson Road along the west boundary of the Site. Report PW-29-2020 is provided in Appendix E.

Table 6.1 Forecasted 2034 Road Traffic Volume Summary

Roadway	Speed Limit (Km/h)	Traffic Volume					
		Daytime (07:00 to 23:00)			Nighttime (23:00 to 07:00)		
		Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
Townline Road	50	4,246	180	99	326	14	8
Port Davidson Road	80	3,040	164	31	301	16	3

7 Noise Impact Assessment

Equivalent Sound Levels (L_{eq}) representative of the overall daytime and nighttime sound levels due to traffic were predicted at the worst impacted façades and OLAs (most exposed to roadways) for each of the PORs noted in Table 5.1. The predicted 2034 road traffic noise levels at facade PORs and applicable noise controls are summarized in Table 7.1. STAMSON sample calculations are attached as Appendix E.

The STC requirements of building components (i.e., windows) are calculated using algorithm outlined in National Research Council (NRC) publication Building Practice Note (BPN) 56 “Controlling Sound Transmission into Buildings.”. Typical constructions building component in compliance with OBC is sufficient to meet the STC requirement for the proposed development.

The assessment of OLA results shows Noise Warning Clause Type A is required for the first two rows of houses where R2 and R6 are located. Results of R1 OLA indicates the noise level exceeds 60dBA at the first row of houses facing Port Davidson Road. Noise mitigation measures such as noise barrier and warning clauses may be required if the OLAs for these lots are facing or exposed to Port Davidson Road.

Table 7.1 Summary of Predicted Road Traffic Noise Levels at PORs and Noise Control Measures

POR	Plane of Window Exterior Noise Level (L_{eq}, dBA)		Indoor Noise Level (L_{eq}, dBA)[1]		Indoor Noise Limit (L_{eq}, dBA)		Within Limits?	Warning Clause	Window STC Requirement
	Daytime	Nighttime	Daytime	Nighttime	Daytime[2]	Nighttime[2]			
R1	63	55	53	45	45	40	No	NWC Type C (Provision for A/C)[3]	Compliance with OBC
R2	56	49	46	39	45	40	No	NWC Type A (OLA) and Type C (Provision for A/C)	Compliance with OBC
R3	54	47	44	37	45	40	Yes	N/A	Compliance with OBC
R4	52	44	42	34	45	40	Yes	N/A	Compliance with OBC
R5	53	45	43	35	45	40	Yes	N/A	Compliance with OBC
R6	60	52	50	42	45	40	No	NWC Type A (OLA) and Type C (Provision for A/C)	Compliance with OBC

Notes:

[1] Indoor Noise Level is calculated by subtracting 10dB from Plane of Window Exterior Noise Level

[2] Daytime period: 0700-2300; Nighttime period: 2300-0700

[3] Noise barriers and warning clauses may be required if the OLAs for these lots are facing or exposed to Port Davidson Road

8 Mitigation and Warning Clauses

8.1 Warning Clauses

The results of the noise impact assessment indicate that road traffic noise levels at the indoor living areas for the first two rows of lots facing Townline Road (R2 and R6) and the first row of lots along Port Davidson Road (R1) exceed the applicable MECP noise limits. Warning Clauses are required for these first row of residential dwellings along Port Davidson Road, and the first two rows of residential dwellings along Townline Road, and they should be presented to the occupants/owners when the agreements of Offers of Purchase and Sale are prepared.

Warning clause for the first row of dwellings along Port Davidson Road:

Type C Warning Clause:

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Noise mitigation measures, such as noise barriers and warning clauses may be required if the OLAs for these lots are facing or exposed to Port Davidson Road.

Warning clauses for the first two rows of residential buildings along Townline Road:

Type A Warning Clause:

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Type C Warning Clause:

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

8.2 Building Components Design

Standard wall and window construction meeting Ontario Building Code specifications are expected to have a sufficient minimum Sound Transmission Class (STC) ratings to achieve indoor sound level criteria.

9 Conclusions

Stantec was retained by Lockbridge Development Inc. to prepare a Noise Impact study in support of the Block Plan approval l for the lands within the Southern 3A limits of the Urban Boundary expansion in Smithville, Ontario, noted as Block Plan Area 9 in the Land Use Concept Plan. The study is limited to the area indicated by the project manager as the Block Plan located west of the trail behind the Shurie Road residences

Townline Road to the north of the site, and Port Davidson Road to the west of the site were identified as potential sources of road traffic noise, impacting the proposed development. A site review of adjacent parcels of land determined that there are no significant stationary noise sources in the area surrounding the Site.

No rail lines exist within 500 m of the proposed site and the site is beyond the NEF-25 noise contours for local airports. Therefore, an assessment of rail noise and vibration and aircraft traffic noise on the site was not warranted or completed.

The results of the noise impact assessment indicate that road traffic noise levels at the indoor living areas for the first two rows of lots facing Townline Road (R2 and R6) and the first row of lots along Port Davidson Road (R1) exceed the applicable MECP noise limits. Warning Clauses are required for these first row of residential dwellings along Port Davidson Road, and the first two rows of residential dwellings along Townline Road, and they should be presented to the occupants/owners when the agreements of Offers of Purchase and Sale are prepared. Additionally, building components (e.g., windows) for all dwellings should comply with Ontario Building Code requirements.

The noise impact assessment and corresponding noise control measures presented in this report shall be reviewed and updated as needed once the detailed design, floor plan, architectural drawings and wall/window construction details are available.

10 References

MECP, Conservation and Parks. 2013. *Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300).*

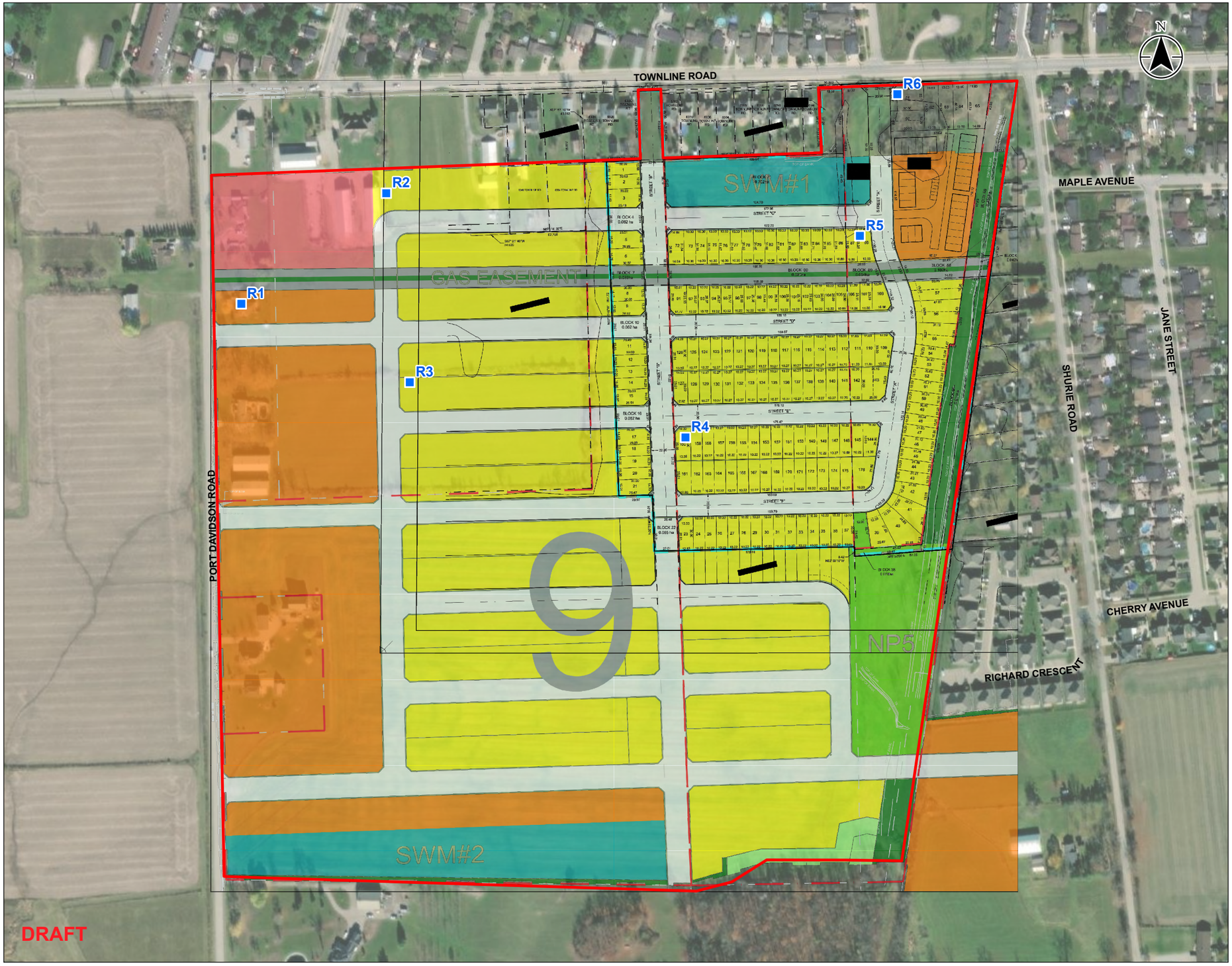
MOE, Conservation and Parks. 1989. *Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT).*

Township of West Lincoln. 2021. *Official Plan of the Township of West Lincoln.*

Township of West Lincoln. 2020. "PW-29-2020 Speed Limit Review Policy & Speed Limit Reduction Requests."

Appendices

Appendix A Figures



Stantec

Legend

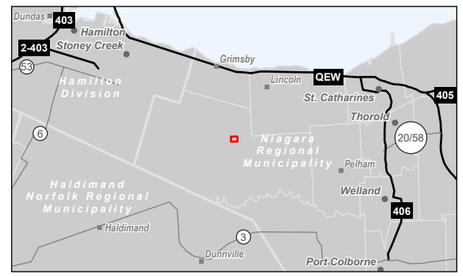
- Site Boundary
- Points of Reception (PORs)

0 100 200 Meters

1:3,500 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
2. Base features produced under the license with the Ontario Ministry of Natural Resources © King's Printer for Ontario, 2024.
3. Orthoimagery Maxar. Imagery date, unknown.



Project Location
TOWNSHIP OF WEST LINCOLN

161414473 REVA
Prepared by RP on 2024-07-18
Technical Review by JWH on 2024-07-11

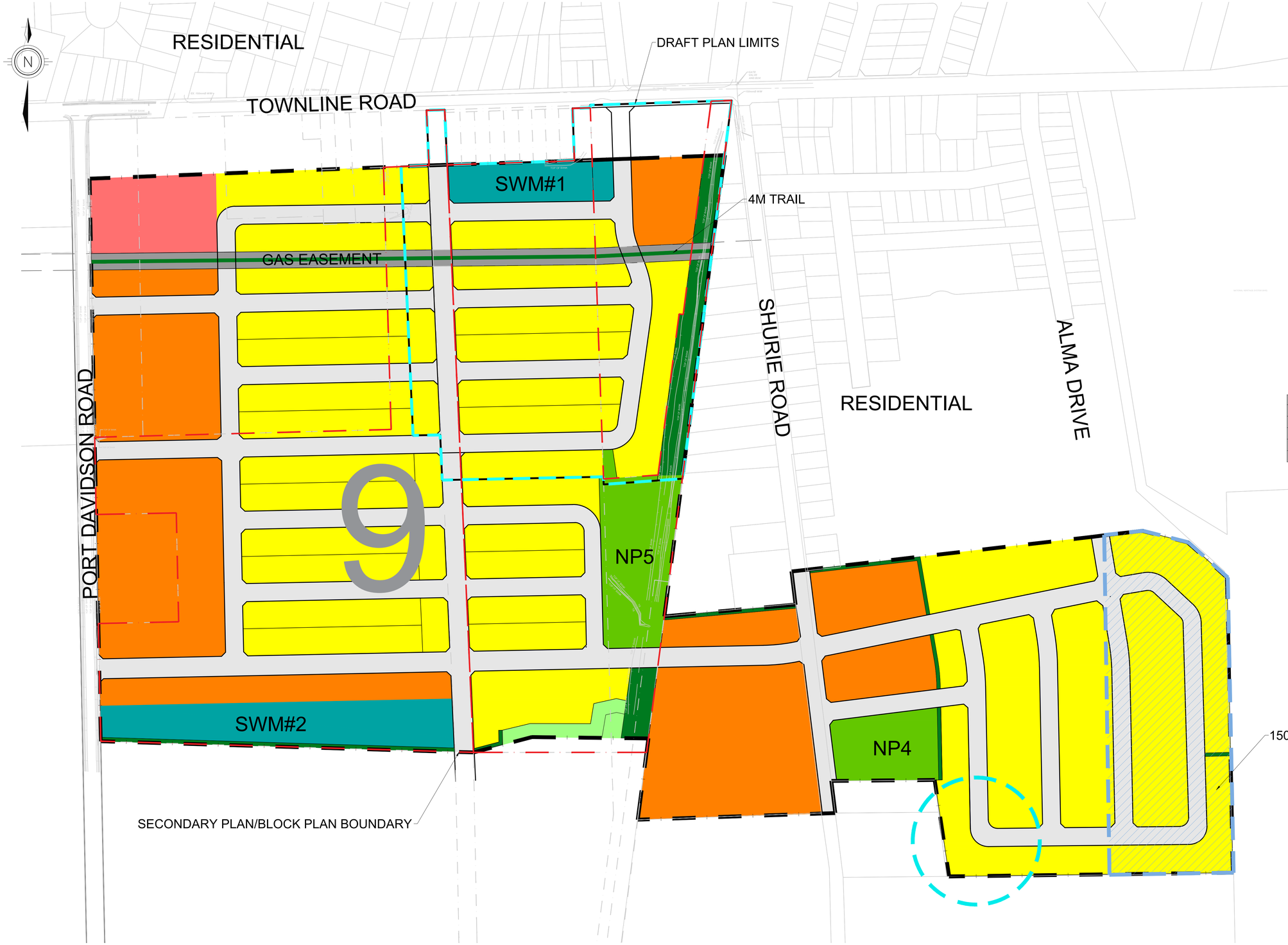
Client/Project
LOCKBRIDGE DEVELOPMENT INC.
BLOCK PLAN APPROVAL SMITHVILLE 3A – SMITHVILLE, ON

Figure No.
1

DRAFT

Title
Aerial View of Project Footprint and Points of Reception Locations

Appendix B Land Use Concept Plan



DEVELOPMENT DETAILS		
LAND USE	AREA	PERCENTAGE
LOW DENSITY RESIDENTIAL (LDR)	±25.15ha (62.25 acres)	±58.73%
MEDIUM DENSITY RESIDENTIAL (MDR)	±12.38ha (30.59 acres)	±28.91%
COMMERCIAL	±1.18ha (2.92 acres)	±2.76%
NATURAL HERITAGE	±1.44ha (3.56 acres)	±3.36%
NATURAL FEATURES AND 15M BUFFER	±0.30 ha (0.73 acres)	±0.70%
PARK [NP4 - NP5]	±2.37 ha (5.75 acres)	±5.53%
NET DEVELOPABLE AREA TOTAL	±42.82ha (105.81 acres)	±100%
GAS EASEMENT	±1.25ha (3.11 acres)	
SWM	±2.55ha (6.30 acres)	
R.O.W	±14.45ha (35.71 acres)	
TOTAL LAND AREA *(including lands in arc, karst and railway setback area - noted below)*	±61.07ha (150.91 acres)	

NET LAND USE DENSITIES	UNITS
±62.25 acres of LDR @ 8 upa	498 units
±30.59 acres of MDR @ 15 upa	459 units
TOTAL UNITS	957 units
POPULATION 957 units @ 2.7ppu	2,584 persons

DEVELOPMENT DETAILS - PHASE 1		
LAND USE	AREA	PERCENTAGE
LOW DENSITY RESIDENTIAL (LDR)	±5.63ha (13.92 acres)	87.02%
MEDIUM DENSITY RESIDENTIAL (MDR)	±0.84ha (2.07 acres)	12.98%
NET DEVELOPABLE AREA TOTAL	±6.47ha (15.99 acres)	100%
GAS EASEMENT	±0.54ha (1.33 acres)	
PARK	±0.08ha. (0.20 acres)	
NATURAL HERITAGE	±0.85ha. (2.10 acres)	
SWM	±0.80ha (1.99 acres)	
R.O.W	±3.01ha (7.43 acres)	
TOTAL LAND AREA	±11.75ha (29.03 acres)	

	A	B	C
1	NET LAND USE DENSITIES - PHASE 1		UNITS
2	±13.92 acres of LDR @ 8 upa		111 units
3	±2.07 acres of MDR @ 15 upa		31 units
4	TOTAL UNITS		142 units
5	POPULATION 142 units @ 2.7ppu		383 persons

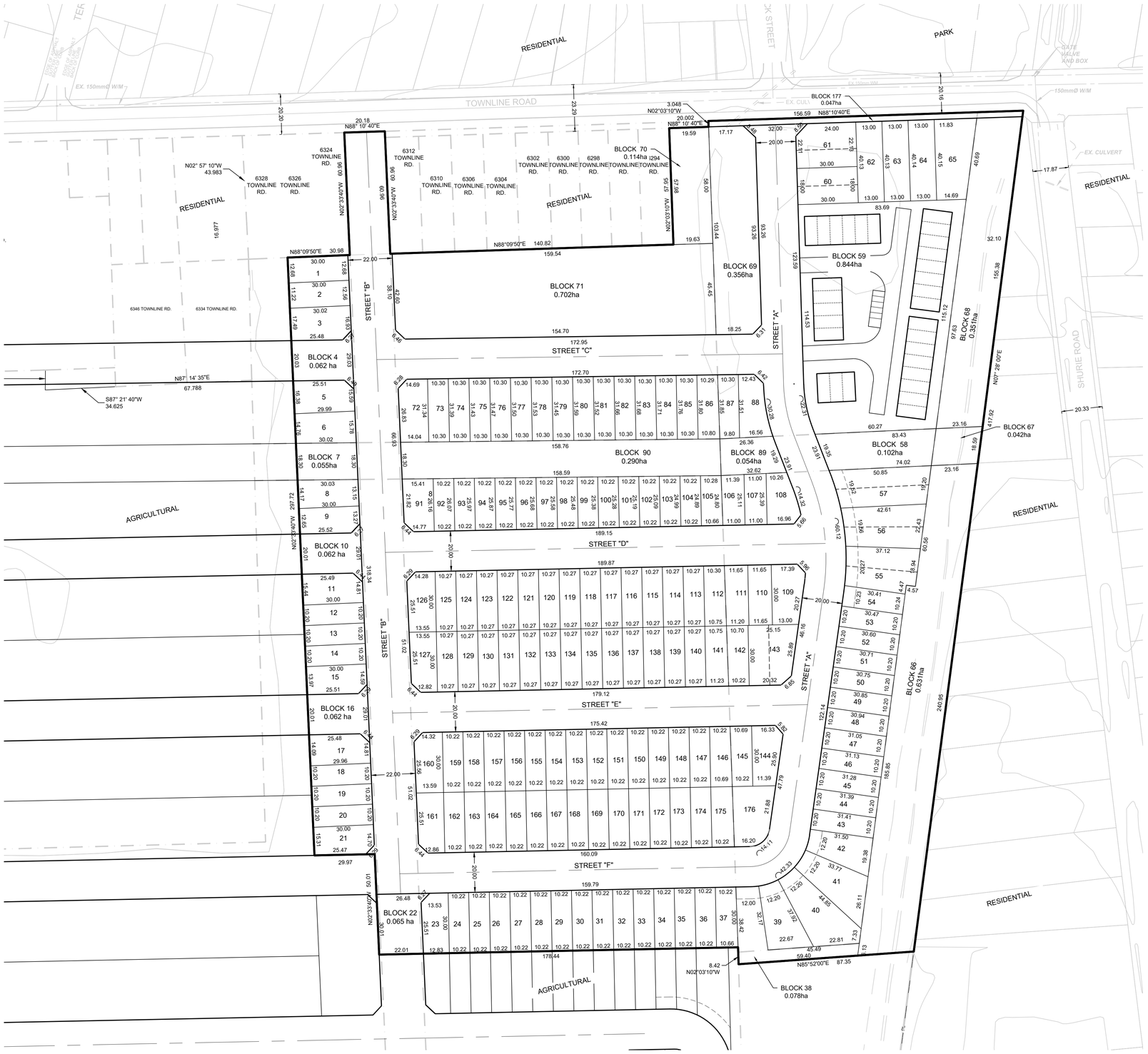
LEGEND

- BLOCK PLAN AREA 9
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- COMMERCIAL
- PARK LAND / OPEN SPACE/ NP4 . NP5
- NATURAL HERITAGE SYSTEM (NHS)-TRAILS
- NATURAL FEATURES AND 15M BUFFER
- PROPOSED S.W.M. FACILITY
- PHASE 1 - 5.41ha (13.36 acres)
- S.W.M. LOCATION
- LAGOON BUFFER

ARCADIS
360 James Street North - Suite 200
Hamilton ON L8L 1H5 Canada
tel 905 546 1010
www.arcadis.com

SOUTHEAST SMITHVILLE - BLOCK PLAN AREA 9
PREFERRED LAND USE CONCEPT
(*BASED ON APPROVED OPA 63)

SCALE	1:2000
DATE	JANUARY 05, 2024
PROJECT No.	144262



True North

LAND USE SCHEDULE			
BLOCKS/LOTS	DESCRIPTION	AREA (ha)	AREA (Acres)	# UNITS
1-3, 5,6,8,9,11-15, 17-21, 23-37, 39-54, 62-65, 72-88, 91-142, 144-176	SINGLE DETACHED DWELLINGS	5.202	12.854	154
55-57, 60, 61, 143	SEMI DETACHED DWELLINGS	0.430	1.062	12
59	TOWNHOUSE DWELLINGS	0.844	2.085	30
69, 70, 71	STORMWATER MANAGEMENT	1.172	2.896	
7, 90, 89, 58, 67	GAS EASEMENT	0.543	1.341	
66, 68	OPEN SPACE/TRAIL	0.982	2.426	
38	OPEN SPACE ACCESS	0.078	0.193	
177	ROAD WIDENING	0.046	0.113	
STREETS "A", "B", "C", "D", "E" & "F"	PUBLIC R.O.W.	2.954	7.299	
4, 7, 10, 16, 22	FUTURE ROAD CONNECTION	0.251	0.620	
TOTAL		12.502	30.269	196

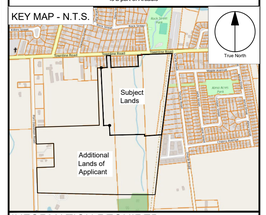
LAND USE SCHEDULE		
DESCRIPTION	OWNER	# UNITS
SINGLE DETACHED DWELLINGS	HENDLER	32
	LOCKBRIDGE	122
SEMI DETACHED DWELLINGS	HENDLER	12
	LOCKBRIDGE	0
TOWNHOUSE DWELLINGS	HENDLER	30
	LOCKBRIDGE	0
TOTAL		196

DRAFT PLAN OF SUBDIVISION SMITHVILLE BLOCK 9

PART OF LOTS 31 & 32, CONCESSION 6 AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 31 & 32, GEOGRAPHIC TOWNSHIP OF GAINSBOROUGH, TOWNSHIP OF WEST LINCOLN, REGIONAL MUNICIPALITY OF NIAGARA

Arcadis Professional Services (Canada) Inc.
is a part of Arcadis.

KEY MAP - N.T.S.



INFORMATION REQUIRED

UNDER SECTION 51 (17) OF THE PLANNING ACT, R.S.O. 1990, c.P.13 AS AMENDED
(a) - AS SHOWN
(b) - AS SHOWN
(c) - AS SHOWN
(d) - AS LISTED BELOW
(e) - AS SHOWN
(f) - AS SHOWN
(g) - AS SHOWN
(h) - MUNICIPAL WATER
(i) - LACUSTRINE SILTY/HEAVY CLAY
(j) - AS SHOWN
(k) - MUNICIPAL SANITARY AND STORM SEWERS
(l) - NONE

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

SIGNED _____
ROY S. KIRKUP, ONTARIO LAND SUREYOR
J.D. BARNES LIMITED
DATE _____

OWNER'S CERTIFICATE

I HEREBY CONSENT TO THE FILING OF THIS PLAN BY ARCADIS, IN DRAFT FORM.

SIGNED _____
DON MANSON
LOCKBRIDGE DEVELOPMENT INC.
DATE _____

SIGNED _____
JUDY HENDLER
DATE _____

SIGNED _____
FRED VANDERVELDE
TEK CORPORATION
DATE _____

No.	DESCRIPTION	DATE
01	FIRST DPS SUBMISSION	2024-07-05

DRAWING ISSUE RECORD

JOHN S. ARIENS REGISTERED PROFESSIONAL PLANNER R.P.P. ONTARIO PROFESSIONAL PLANNERS INSTITUTE

APPROVALS

ARCADIS
360 James Street North - Suite 200
Hamilton ON L8L 1H5 Canada
tel 905 546 1010
www.arcadis.com

SCALE 15 0 10 20 40
1:1000 (m)

PROJECT NO: 144262

DRAWN BY:	CHECKED BY:
J. MARCUS	J. MARCUS
PROJECT MGR:	APPROVED BY:
J. MARCUS	J. ARIENS

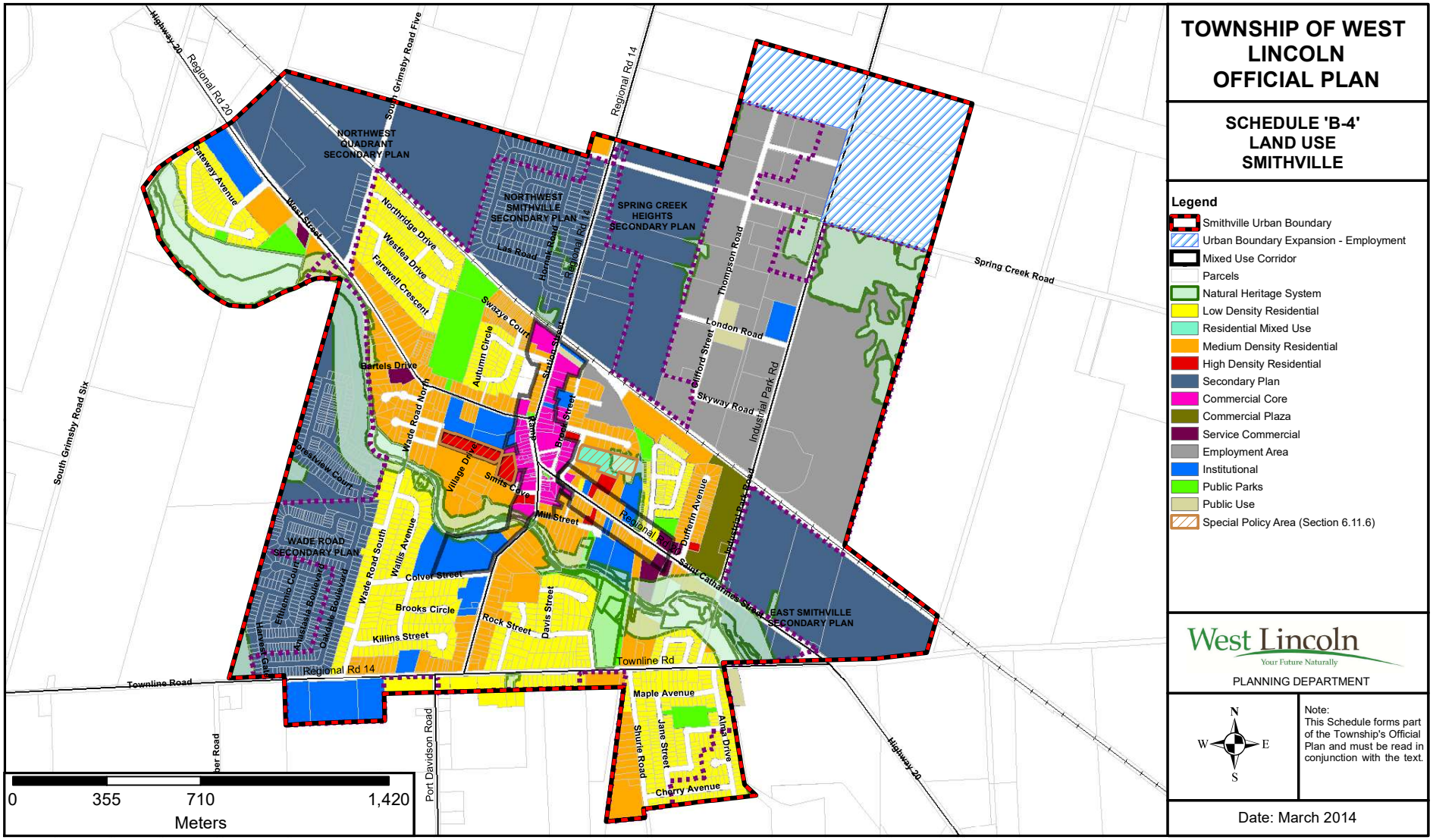
SHEET TITLE
DRAFT PLAN OF SUBDIVISION

SHEET NUMBER DPS1.0
ISSUE 01

SCALE CHECK 10mm 1 in

File Location: J:\144262_Block_Plan_A3\7.0_Production\7.03_Design\17_Planning\Sheets\144262DP Concept 1-V3.dwg Last Saved: July 10, 2024 by jared.marcus Plotted: Wednesday, July 10, 2024 11:17:00 AM by Jared Marcus

Appendix C Township of West Lincoln Zoning Map and Infrastructure and Transportation Plan



TOWNSHIP OF WEST LINCOLN OFFICIAL PLAN

SCHEDULE 'B-4' LAND USE SMITHVILLE

Legend

- Smithville Urban Boundary
- Urban Boundary Expansion - Employment
- Mixed Use Corridor
- Parcels
- Natural Heritage System
- Low Density Residential
- Residential Mixed Use
- Medium Density Residential
- High Density Residential
- Secondary Plan
- Commercial Core
- Commercial Plaza
- Service Commercial
- Employment Area
- Institutional
- Public Parks
- Public Use
- Special Policy Area (Section 6.11.6)

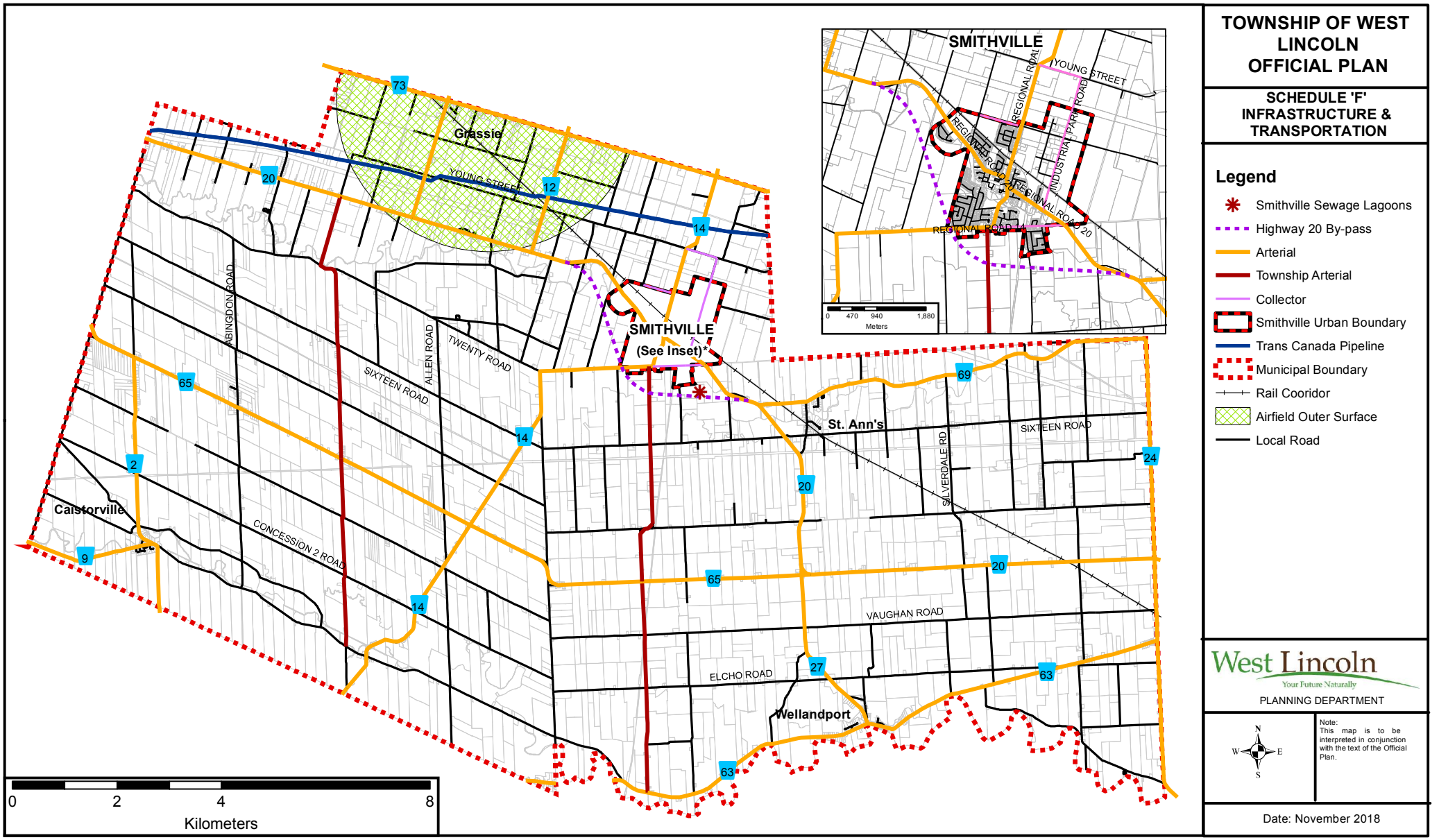
West Lincoln
Your Future Naturally

PLANNING DEPARTMENT

N
W E
S

Note:
This Schedule forms part of the Township's Official Plan and must be read in conjunction with the text.

Date: March 2014



TOWNSHIP OF WEST LINCOLN OFFICIAL PLAN

SCHEDULE 'F' INFRASTRUCTURE & TRANSPORTATION

Legend

- Smithville Sewage Lagoons
- Highway 20 By-pass
- Arterial
- Township Arterial
- Collector
- Smithville Urban Boundary
- Trans Canada Pipeline
- Municipal Boundary
- Rail Cooridor
- Airfield Outer Surface
- Local Road

West Lincoln
Your Future Naturally

PLANNING DEPARTMENT

N W E S

Note:
This map is to be interpreted in conjunction with the text of the Official Plan.

Date: November 2018

Appendix D Road Traffic Data

Basic Axle Classification Report: SM242001

Station ID : SM242001

Info Line 1 : Port Davidson Rd, 375m
Info Line 2 : of Townline Rd
GPS Lat/Lon : 43.087936 / -79.551259
DB File : SM242001.DB

Last Connected Device Type : Unicorn
Version Number : 4.31
Serial Number : 24142
Number of Lanes : 2
Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
1.	N	NB	Ax-Ax	150 cm	183 cm	

Lane #1 Basic Axle Classification Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	00:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Thu	00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	01:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	04:15	0	1	0	0	0	0	0	0	1	0	0	0	0	2
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	05:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
	05:15	0	5	6	0	0	0	0	0	0	0	0	0	0	11
	05:30	0	1	3	0	0	0	0	0	0	0	0	0	0	4
	05:45	0	6	6	0	0	1	0	0	0	0	0	0	0	13
	06:00	0	4	6	0	1	0	0	0	0	0	0	0	0	11
	06:15	0	10	4	0	0	0	0	0	0	0	0	0	0	14
	06:30	1	11	6	0	0	0	0	0	0	0	0	0	0	18
	06:45	1	8	8	0	0	1	0	0	0	0	0	0	0	18
	07:00	0	10	4	0	1	1	1	0	0	0	0	0	0	17
	07:15	0	9	9	0	0	0	0	0	0	0	0	0	0	18
	07:30	0	14	5	0	0	1	0	0	0	0	0	0	0	20
	07:45	0	11	6	0	2	0	0	0	0	0	0	0	0	19
	08:00	0	14	5	0	1	0	0	0	0	0	0	0	0	20
	08:15	0	8	5	0	1	0	0	0	0	1	0	0	0	15
	08:30	0	10	7	0	1	0	0	0	0	0	0	0	0	18

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	08:45	0	17	13	0	0	0	0	0	0	0	0	0	0	30
Thu	09:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
	09:15	0	9	3	0	1	1	0	0	0	0	0	0	0	14
	09:30	0	16	2	0	0	0	0	0	0	0	0	0	0	18
	09:45	0	9	2	0	0	0	0	0	0	0	0	0	0	11
	10:00	0	7	6	0	0	0	0	0	0	0	0	0	0	13
	10:15	0	9	7	0	0	0	0	0	0	0	0	0	0	16
	10:30	0	5	3	0	0	1	0	1	1	0	0	0	0	11
	10:45	1	6	3	0	0	0	0	0	0	0	0	0	0	10
	11:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
	11:15	0	15	2	0	0	0	0	0	0	0	0	0	0	17
	11:30	0	7	5	0	0	1	0	0	0	0	0	0	0	13
	11:45	0	5	3	0	0	0	0	0	1	0	0	0	0	9
	12:00	0	10	4	0	0	2	0	0	0	0	0	0	0	16
	12:15	0	9	5	0	0	2	0	0	0	0	1	0	0	17
	12:30	0	6	3	0	1	0	0	0	0	0	0	0	0	10
	12:45	0	8	3	0	0	2	0	1	0	0	0	0	0	14
	13:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
	13:15	0	9	2	0	2	1	0	0	0	0	0	0	0	14
	13:30	1	8	5	0	1	2	0	1	0	0	0	0	0	18
	13:45	0	8	3	0	0	1	0	0	0	0	0	0	0	12
	14:00	0	11	6	0	0	0	0	0	0	0	0	0	0	17
	14:15	0	8	3	0	0	3	0	0	0	0	0	0	0	14
	14:30	0	16	5	0	0	0	0	0	0	0	0	0	0	21
	14:45	0	11	3	0	0	1	0	0	1	0	0	0	0	16
	15:00	1	8	5	0	0	0	0	0	0	0	0	0	0	14
	15:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
	15:30	0	3	3	0	0	0	0	0	0	0	0	0	0	6
	15:45	0	13	8	0	1	0	0	0	0	0	0	0	0	22
	16:00	0	17	4	0	1	0	0	0	0	0	0	0	0	22
	16:15	0	6	1	0	1	0	0	0	0	0	0	0	0	8
	16:30	0	12	5	0	0	0	0	0	0	0	0	0	0	17
	16:45	0	12	4	0	1	0	1	0	0	0	0	0	0	18
	17:00	0	14	5	0	0	0	0	0	0	0	0	0	0	19
	17:15	0	7	4	0	0	0	0	0	0	0	0	0	0	11
	17:30	0	14	3	0	0	0	0	0	0	0	0	0	0	17
	17:45	0	10	8	0	0	0	0	0	0	0	0	0	0	18
	18:00	0	11	7	0	0	0	0	0	0	0	0	0	0	18
	18:15	0	9	2	0	0	1	0	0	0	0	0	0	0	12
	18:30	0	8	5	0	0	0	0	0	0	0	0	0	0	13
	18:45	0	8	4	0	0	0	0	1	0	0	0	0	0	13
	19:00	0	12	4	0	0	0	0	0	0	0	0	0	0	16
	19:15	1	2	3	0	0	0	0	0	0	0	0	0	0	6
	19:30	0	9	4	0	0	0	0	0	0	0	0	0	0	13
	19:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
	20:00	0	8	3	0	0	0	0	0	0	0	1	0	0	12
	20:15	1	6	2	0	0	0	0	0	0	0	0	0	0	9
	20:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
	20:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	21:15	0	4	2	0	0	0	0	0	0	0	0	0	0	6

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	21:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
Thu	21:45	0	6	2	0	0	0	0	0	0	0	0	0	0	8
	22:00	1	2	1	0	0	0	0	0	0	0	0	0	0	4
	22:15	2	3	1	0	0	0	0	0	0	0	0	0	0	6
	22:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
	22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Daily Total :		10	607	281	0	16	22	2	4	4	1	2	0	0	949
	Percent :	1%	64%	30%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	
	Average :	0	6	3	0	0	0	0	0	0	0	0	0	0	9

Lane #2 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
2.	S	SB	Ax-Ax	150 cm	183 cm	

Lane #2 Basic Axle Classification Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024

(DEFAULTC)		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	
Date	Time	Cycle	Cars	2A-4T	Buses	2A-SU	3A-SU	4A-SU	4A-ST	5A-ST	6A-ST	5A-MT	6A-MT	Other	Total
06/13/24	00:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
Thu	00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	00:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	01:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:00	0	1	0	0	0	1	0	0	0	0	0	0	0	2
	05:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	05:30	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	05:45	0	0	2	0	0	0	0	2	0	0	0	0	0	4
	06:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
	06:15	0	3	3	0	0	0	0	0	0	0	0	0	0	6
	06:30	0	1	8	0	0	0	0	0	1	0	0	0	0	10
	06:45	0	4	3	0	1	0	0	0	0	0	0	0	0	8
	07:00	0	6	3	0	0	0	0	1	0	0	0	0	0	10
	07:15	0	10	2	0	0	0	0	0	0	0	0	0	0	12
	07:30	0	7	7	1	0	0	0	0	0	0	0	0	0	15
	07:45	0	5	8	0	0	0	0	0	0	1	0	0	0	14
	08:00	0	11	3	0	1	0	0	0	0	0	0	0	0	15
	08:15	0	3	3	0	2	0	0	0	1	0	0	0	0	9
	08:30	0	5	3	1	0	1	0	0	0	0	0	0	0	10
	08:45	0	4	5	0	0	0	0	0	0	0	0	0	0	9
	09:00	0	4	5	0	1	0	0	1	0	0	0	0	0	11
	09:15	0	4	7	0	0	0	0	0	0	0	0	0	0	11
	09:30	0	9	1	1	0	0	0	0	0	0	0	0	0	11
	09:45	0	1	6	0	0	0	0	0	0	0	0	0	0	7
	10:00	0	6	4	0	1	0	0	2	0	1	0	0	0	14
	10:15	1	4	7	0	0	0	0	0	0	0	0	0	0	12
	10:30	0	5	7	0	1	0	0	0	1	0	1	0	0	15

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	10:45	0	2	2	0	0	0	0	0	0	0	0	0	0	4
Thu	11:00	0	2	7	0	1	0	0	0	0	0	0	0	0	10
	11:15	0	3	4	0	0	1	0	0	0	0	0	0	0	8
	11:30	0	9	7	0	0	0	0	1	0	0	0	0	0	17
	11:45	0	8	8	0	0	1	0	0	0	0	0	0	0	17
	12:00	0	13	6	0	0	0	0	0	0	0	0	0	0	19
	12:15	0	8	4	0	0	0	0	0	0	0	0	0	0	12
	12:30	0	12	3	0	1	0	0	3	0	0	0	0	0	19
	12:45	1	8	3	0	0	0	0	0	0	0	0	0	0	12
	13:00	1	6	3	0	0	0	0	1	0	0	0	0	0	11
	13:15	0	8	5	0	0	0	0	2	0	0	0	0	0	15
	13:30	0	5	5	0	1	0	0	0	0	0	0	0	0	11
	13:45	1	8	1	0	0	0	0	0	0	0	0	0	0	10
	14:00	0	11	4	0	0	0	0	3	0	0	0	0	0	18
	14:15	0	7	6	1	0	1	0	0	0	0	0	0	0	15
	14:30	1	10	13	0	0	0	0	0	0	0	0	0	0	24
	14:45	0	6	9	1	0	0	0	2	0	0	0	0	0	18
	15:00	0	17	17	1	0	0	0	0	0	0	0	0	0	35
	15:15	0	10	13	2	0	0	0	0	0	0	0	0	0	25
	15:30	0	7	7	0	0	0	0	0	0	0	0	0	0	14
	15:45	1	7	9	1	0	0	0	0	0	0	0	0	0	18
	16:00	1	11	7	0	1	0	0	0	0	0	2	0	0	22
	16:15	0	10	10	0	1	0	0	0	0	0	0	0	0	21
	16:30	0	8	14	0	0	1	0	2	0	0	0	0	0	25
	16:45	0	16	13	0	1	0	0	0	0	0	0	0	0	30
	17:00	0	15	11	0	0	0	0	0	0	0	0	0	0	26
	17:15	0	10	9	0	0	0	0	0	0	0	0	0	0	19
	17:30	0	11	7	0	0	0	0	0	0	0	0	0	0	18
	17:45	0	7	5	0	0	0	0	0	0	0	0	0	0	12
	18:00	0	5	7	0	0	0	0	0	0	0	0	0	0	12
	18:15	0	12	4	0	0	0	0	0	0	0	0	0	0	16
	18:30	0	11	6	0	0	0	0	0	0	0	1	0	0	18
	18:45	0	5	7	0	0	0	0	0	0	0	0	0	0	12
	19:00	0	7	4	0	0	0	0	0	0	0	1	0	0	12
	19:15	0	7	6	0	0	0	0	0	0	0	0	0	0	13
	19:30	1	5	3	0	0	0	0	0	0	0	0	0	0	9
	19:45	0	5	3	0	0	0	0	0	0	0	0	0	0	8
	20:00	0	4	4	0	0	0	0	0	0	0	0	0	0	8
	20:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	20:30	1	6	2	0	0	0	0	1	0	0	0	0	0	10
	20:45	0	9	2	0	0	0	0	0	0	0	0	0	0	11
	21:00	0	4	4	0	0	0	0	0	0	0	0	0	0	8
	21:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
	21:30	0	6	2	0	0	0	0	0	1	0	0	0	0	9
	21:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
	22:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
	22:15	0	3	4	0	1	0	0	0	0	0	0	0	0	8
	22:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	22:45	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
	23:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3

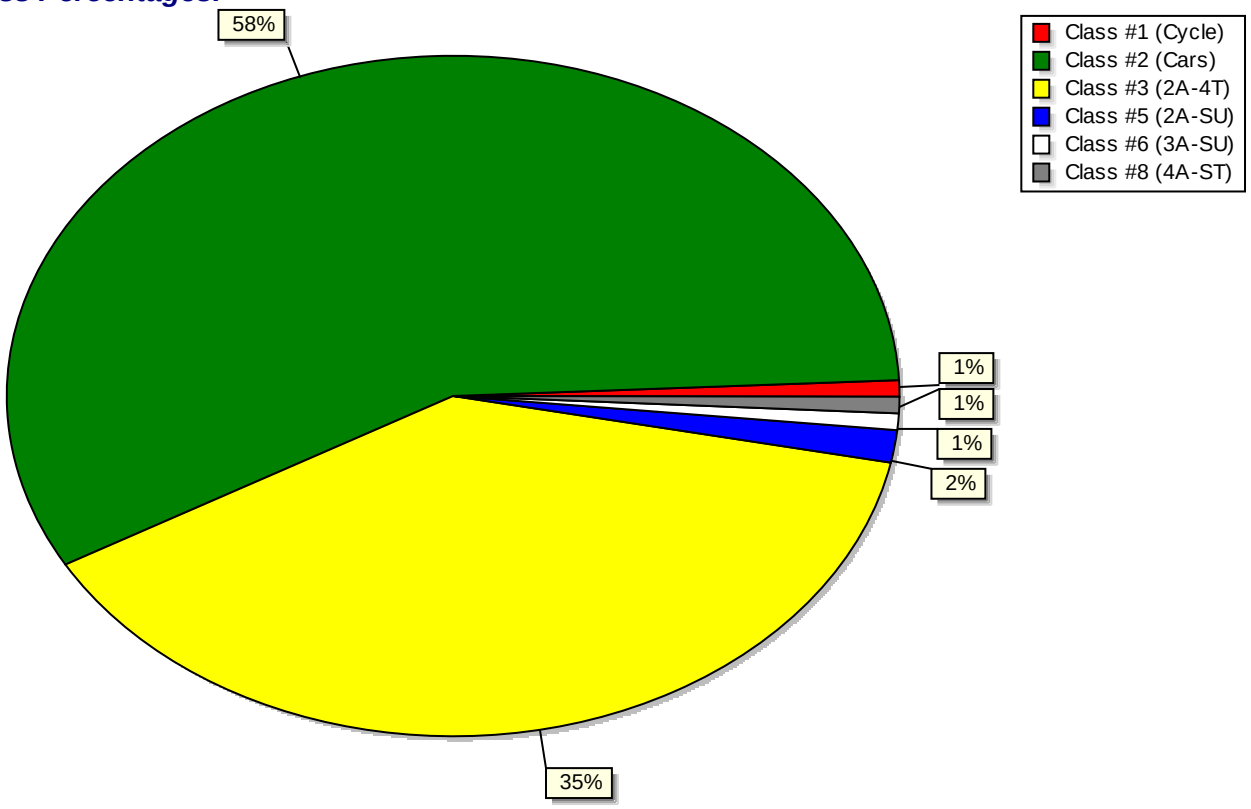
Date	Time	(DEFAULTC) Cycle	#1 Cars	#2 2A-4T	#3 Buses	#4 2A-SU	#5 3A-SU	#6 4A-SU	#7 4A-ST	#8 5A-ST	#9 6A-ST	#10 5A-MT	#11 6A-MT	#12 Other	#13 Total
06/13/24	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thu	23:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Daily Total :		9	475	381	9	15	6	0	21	4	2	5	0	0	927
Percent :		1%	51%	41%	1%	2%	1%	0%	2%	0%	0%	1%	0%	0%	
Average :		0	5	4	0	0	0	0	0	0	0	0	0	0	9

Basic Axle Class Summary: SM242001

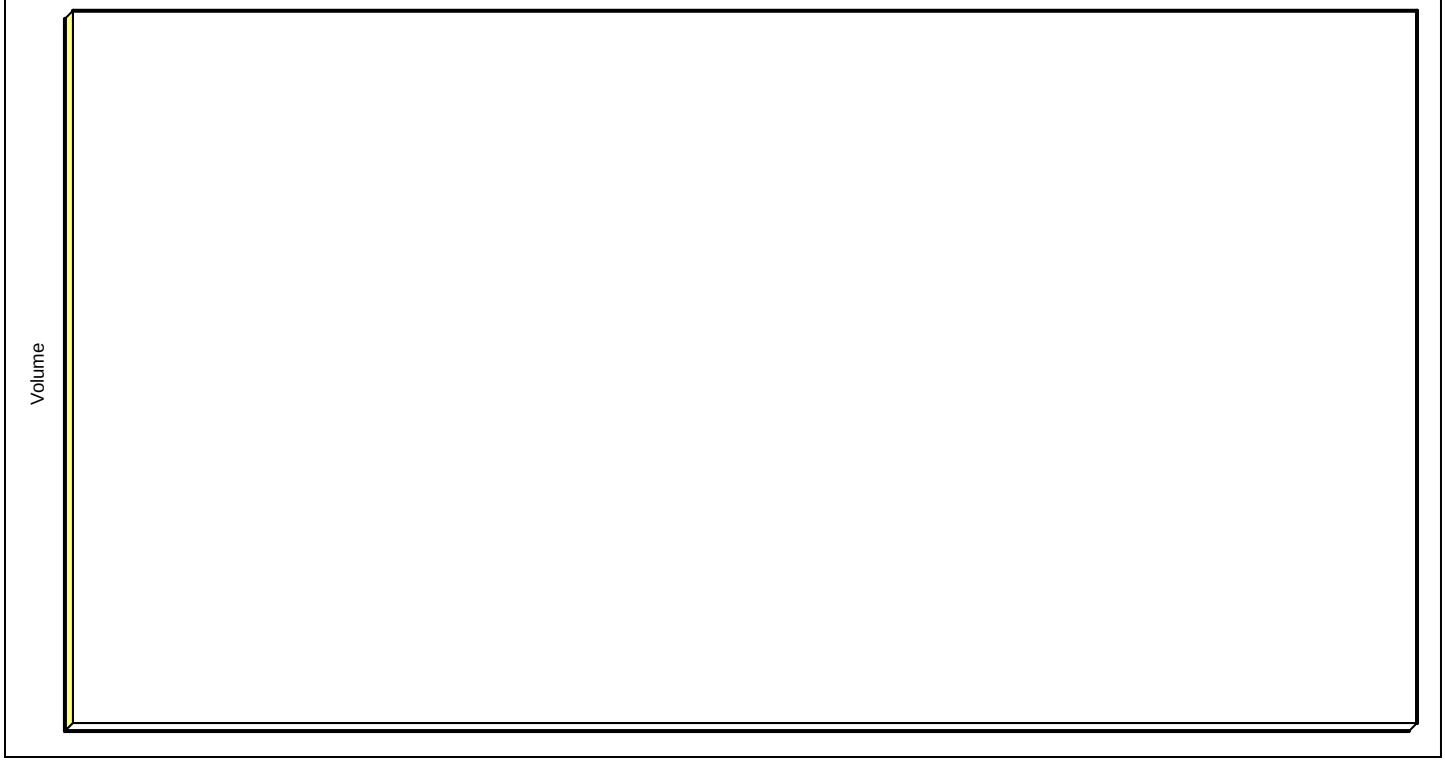
(DEFAULTC) Description	Lane	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
TOTAL COUNT :	#1.	10	607	281	0	16	22	2	4	4	1	2	0	0	949
	#2.	9	475	381	9	15	6	0	21	4	2	5	0	0	927
		19	1082	662	9	31	28	2	25	8	3	7	0	0	1876
Percents :	#1.	1%	64%	30%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	51%
	#2.	1%	51%	41%	1%	2%	1%	0%	2%	0%	0%	1%	0%	0%	49%
		1%	58%	35%	0%	2%	1%	0%	1%	0%	0%	0%	0%	0%	
Average :	#1.	0	6	3	0	0	0	0	0	0	0	0	0	0	9
	#2.	0	5	4	0	0	0	0	0	0	0	0	0	0	9
		0	11	7	0	0	0	0	0	0	0	0	0	0	18
Days & ADT :	#1.	1.0	949												
	#2.	1.0	927												
		1.0	1876												

SM242001 Axle Class Charts For Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024

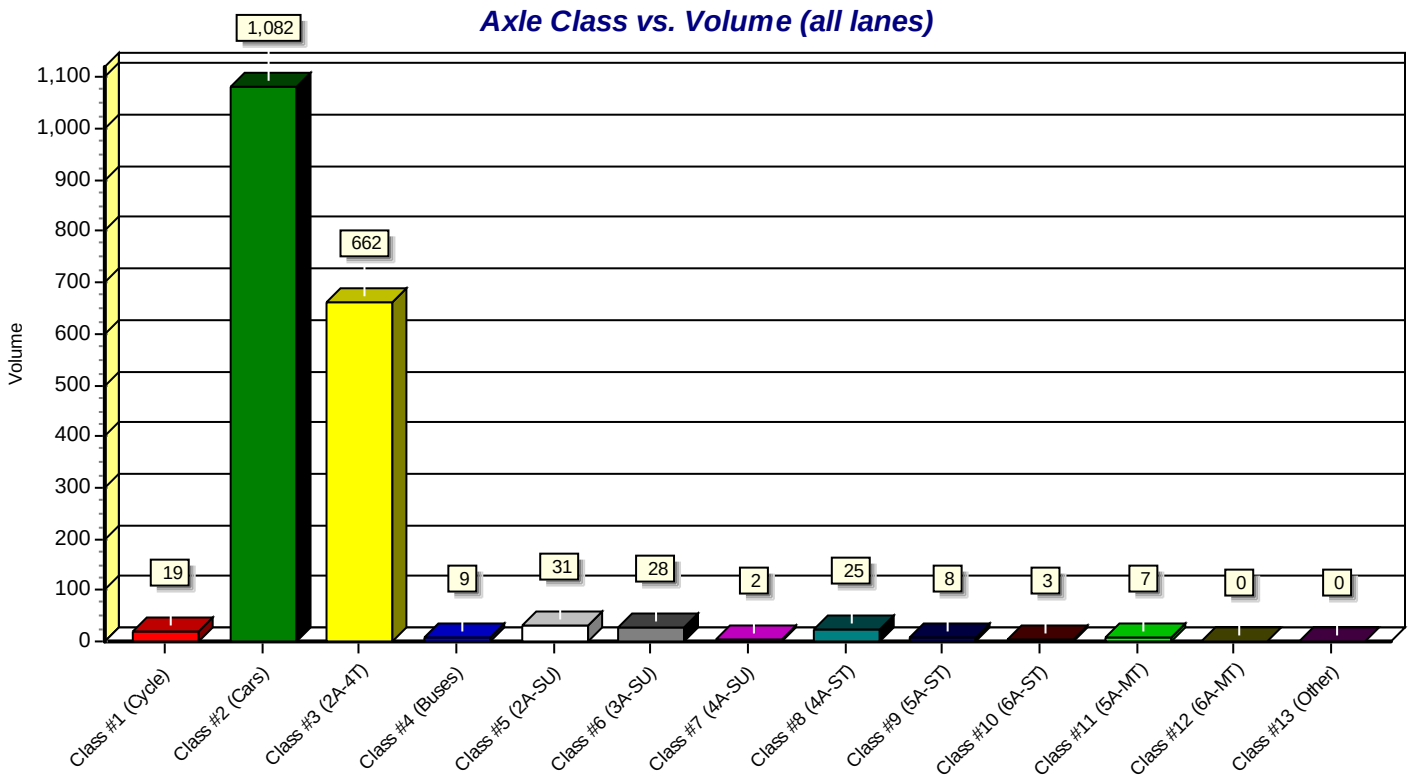
Axle Class Percentages:



Axle Class vs. Time (all lanes)



SM242001 Axle Class Charts For Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024



Basic Axle Classification Report: SM242002

Station ID : SM242002

Info Line 1 : Townline Rd, Just E of
Info Line 2 : Sterling St
GPS Lat/Lon : 43.09133 / -79.547955
DB File : SM242002.DB

Last Connected Device Type : Unicorn
Version Number : 4.31
Serial Number : 00003
Number of Lanes : 2
Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
1.	E	EB	Ax-Ax	150 cm	183 cm	

Lane #1 Basic Axle Classification Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	00:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Thu	00:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	00:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	04:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	05:15	0	6	1	0	0	0	0	0	0	0	0	0	0	7
	05:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	05:45	0	5	3	0	0	0	0	0	0	0	0	0	0	8
	06:00	0	5	2	0	0	1	0	0	0	0	0	0	0	8
	06:15	0	5	4	0	0	0	0	0	0	0	0	0	0	9
	06:30	0	11	6	0	0	0	0	0	0	0	0	0	0	17
	06:45	1	11	3	0	0	0	0	0	0	0	0	0	0	15
	07:00	0	8	7	0	1	0	0	0	0	0	0	0	0	16
	07:15	1	14	3	0	0	0	0	0	0	0	0	0	0	18
	07:30	0	10	0	0	1	1	0	0	0	0	1	0	0	13
	07:45	0	18	3	0	1	0	0	1	0	0	0	0	0	23
	08:00	0	7	4	0	1	0	0	0	0	0	0	0	0	12
	08:15	0	12	4	0	3	0	0	0	0	1	0	0	0	20
	08:30	0	15	7	0	1	0	0	0	0	0	0	0	0	23

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	08:45	0	18	8	0	1	0	0	0	0	0	0	0	0	27
Thu	09:00	0	12	4	0	0	0	0	0	1	0	0	0	0	17
	09:15	0	15	2	0	0	0	0	0	0	0	0	0	0	17
	09:30	0	13	5	0	0	1	0	0	0	0	0	0	0	19
	09:45	0	10	2	0	0	0	0	0	0	0	0	0	0	12
	10:00	0	6	7	0	0	1	0	0	0	0	0	0	0	14
	10:15	2	13	6	0	1	2	0	0	0	0	0	0	0	24
	10:30	0	7	4	0	0	0	0	0	0	0	0	0	0	11
	10:45	0	4	5	0	0	0	0	0	0	0	0	0	0	9
	11:00	0	8	8	0	0	0	0	0	0	0	0	0	0	16
	11:15	0	12	3	0	0	0	0	0	0	0	1	0	0	16
	11:30	1	9	1	0	0	2	0	0	0	0	0	0	0	13
	11:45	2	13	8	0	1	1	0	0	0	0	0	0	0	25
	12:00	0	13	2	0	0	3	0	0	0	0	0	0	0	18
	12:15	1	18	6	0	1	0	0	0	0	0	0	0	0	26
	12:30	0	13	3	0	0	1	0	0	0	0	0	0	0	17
	12:45	0	11	7	0	1	1	0	0	0	0	0	0	0	20
	13:00	0	11	3	0	1	0	0	1	0	0	0	0	0	16
	13:15	0	13	2	0	1	2	0	0	1	0	1	0	0	20
	13:30	0	16	6	0	0	2	0	0	1	0	0	0	0	25
	13:45	0	11	5	0	0	1	0	1	0	0	0	0	0	18
	14:00	1	13	7	0	0	0	0	0	0	0	0	0	1	22
	14:15	0	17	6	0	0	0	0	1	0	0	0	0	0	24
	14:30	0	16	5	0	1	0	0	0	0	0	0	0	0	22
	14:45	1	17	4	0	0	1	0	0	1	0	0	0	0	24
	15:00	2	27	5	0	3	0	0	0	0	0	1	0	1	39
	15:15	0	31	5	0	4	0	0	0	0	0	1	0	0	41
	15:30	2	19	5	0	0	1	0	0	0	0	0	0	0	27
	15:45	0	14	3	0	1	0	0	0	0	1	1	0	0	20
	16:00	0	26	6	0	3	0	0	0	0	0	0	0	0	35
	16:15	1	20	4	0	1	1	0	0	0	1	1	0	0	29
	16:30	0	27	9	0	0	0	0	0	0	0	1	0	0	37
	16:45	0	21	6	0	0	0	0	1	1	0	0	0	0	29
	17:00	0	17	11	0	0	0	0	0	0	0	0	0	0	28
	17:15	2	18	4	0	0	0	0	0	0	0	1	0	0	25
	17:30	0	16	4	0	0	0	0	0	0	0	0	0	0	20
	17:45	1	14	11	0	0	0	0	0	0	0	0	0	0	26
	18:00	0	15	12	0	0	0	1	2	0	0	0	0	0	30
	18:15	0	13	7	0	0	0	0	0	1	0	0	0	0	21
	18:30	1	11	9	0	0	0	0	0	0	0	1	0	0	22
	18:45	1	15	5	0	0	0	0	0	0	0	1	0	0	22
	19:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
	19:15	0	18	4	0	0	0	0	0	0	0	0	0	1	23
	19:30	2	28	7	0	0	0	0	0	0	0	1	0	0	38
	19:45	1	14	3	0	0	0	0	0	0	0	0	0	0	18
	20:00	0	18	3	0	0	0	0	0	0	0	0	0	0	21
	20:15	0	6	1	0	0	0	0	0	0	0	0	0	0	7
	20:30	0	11	3	0	0	0	0	0	0	0	0	0	0	14
	20:45	1	18	3	0	0	0	0	0	0	0	0	0	0	22
	21:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
	21:15	1	8	1	0	0	0	0	0	0	0	0	0	0	10

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	21:30	0	6	2	0	0	0	0	0	0	0	0	0	0	8
Thu	21:45	0	6	3	0	0	0	0	0	0	0	0	0	0	9
	22:00	1	8	3	0	0	0	0	0	0	0	0	0	0	12
	22:15	2	9	0	0	0	0	0	0	0	0	0	0	0	11
	22:30	0	5	1	0	1	0	0	0	0	0	0	0	0	7
	22:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
	23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	23:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	23:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total :		28	939	319	0	29	22	1	7	6	3	12	0	3	1369
	Percent :	2%	69%	23%	0%	2%	2%	0%	1%	0%	0%	1%	0%	0%	
	Average :	0	10	3	0	0	0	0	0	0	0	0	0	0	13

Lane #2 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
2.	W	WB	Ax-Ax	150 cm	183 cm	

Lane #2 Basic Axle Classification Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024

(DEFAULTC)		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	
Date	Time	Cycle	Cars	2A-4T	Buses	2A-SU	3A-SU	4A-SU	4A-ST	5A-ST	6A-ST	5A-MT	6A-MT	Other	Total
06/13/24	00:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Thu	00:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:45	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	03:45	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	04:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	05:15	0	4	1	0	0	1	0	0	0	0	0	0	0	6
	05:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
	05:45	0	2	3	0	0	0	0	0	0	0	0	0	0	5
	06:00	0	2	3	0	1	1	0	1	0	0	0	0	0	8
	06:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
	06:30	0	8	8	0	1	0	0	0	0	0	1	0	0	18
	06:45	0	7	4	0	1	0	0	0	0	0	0	0	0	12
	07:00	0	11	2	0	0	0	0	1	0	0	0	0	0	14
	07:15	0	15	2	0	0	0	0	1	0	0	0	0	0	18
	07:30	0	13	4	0	2	0	0	0	0	0	0	0	0	19
	07:45	1	14	2	0	0	0	0	0	0	0	0	0	0	17
	08:00	1	14	7	0	0	0	0	0	0	0	2	0	0	24
	08:15	0	20	9	0	3	0	0	0	0	0	0	0	0	32
	08:30	0	18	8	0	3	0	0	0	1	0	0	0	0	30
	08:45	0	21	5	0	0	0	0	0	0	0	2	0	0	28
	09:00	0	7	8	0	0	0	0	0	0	0	0	0	0	15
	09:15	0	8	6	0	0	0	0	0	0	0	0	0	0	14
	09:30	1	8	4	0	0	0	0	0	0	0	0	0	0	13
	09:45	1	8	4	0	0	0	0	0	0	0	0	0	0	13
	10:00	0	5	6	0	0	1	0	0	0	1	0	0	0	13
	10:15	0	11	5	0	0	0	0	0	0	0	0	0	0	16
	10:30	0	12	3	0	0	0	0	0	0	0	0	0	0	15

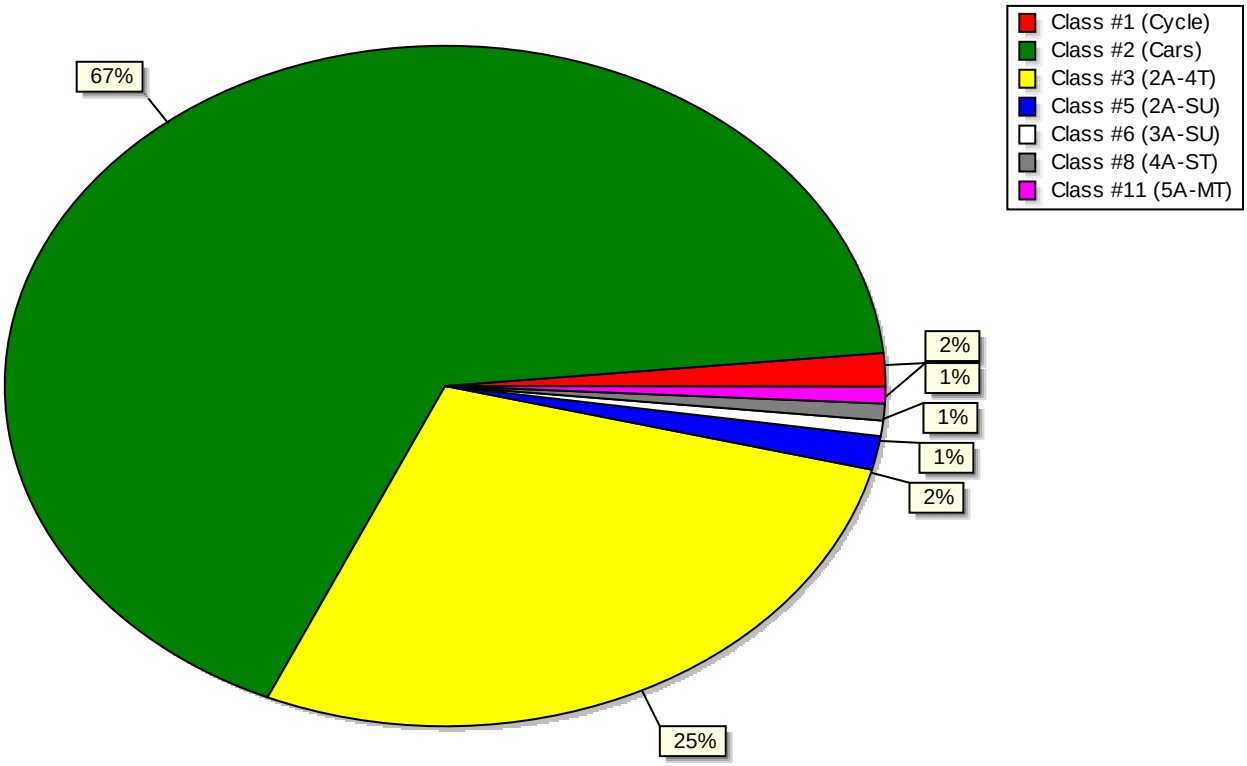
(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	10:45	0	7	3	0	0	1	0	0	0	0	0	0	0	11
Thu	11:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10
	11:15	0	7	4	0	0	0	0	0	0	0	1	0	0	12
	11:30	1	13	5	0	0	0	0	0	0	0	1	0	0	20
	11:45	0	12	5	0	0	1	0	0	0	0	0	0	0	18
	12:00	0	10	3	0	0	1	0	0	0	0	0	0	0	14
	12:15	0	12	5	0	0	0	0	0	0	0	0	0	0	17
	12:30	0	16	3	0	0	3	0	0	0	0	0	0	0	22
	12:45	0	7	7	0	1	0	0	0	0	0	1	0	0	16
	13:00	0	11	3	0	0	0	0	0	0	0	1	0	0	15
	13:15	0	12	4	0	0	1	0	0	0	0	0	0	0	17
	13:30	0	15	7	0	0	0	0	0	0	0	0	0	0	22
	13:45	0	10	3	0	0	0	0	1	0	0	1	0	0	15
	14:00	0	11	6	0	0	0	0	1	0	0	0	0	1	19
	14:15	0	11	5	0	1	1	0	0	0	0	0	0	1	19
	14:30	1	15	2	0	1	0	0	0	0	0	1	0	0	20
	14:45	1	15	11	0	2	0	0	0	0	0	2	0	0	31
	15:00	0	10	6	0	1	0	0	0	0	0	0	0	0	17
	15:15	1	16	4	0	0	1	0	2	0	0	2	0	0	26
	15:30	0	17	6	0	0	0	0	0	0	0	1	0	0	24
	15:45	1	13	9	0	0	0	0	1	0	0	0	0	0	24
	16:00	0	18	7	0	2	0	0	0	0	0	0	0	0	27
	16:15	0	16	6	0	0	0	0	0	0	0	1	0	0	23
	16:30	0	18	10	0	0	0	0	0	0	0	1	0	0	29
	16:45	0	15	15	0	0	0	0	0	0	0	0	0	0	30
	17:00	0	21	2	0	0	0	0	1	0	0	1	0	0	25
	17:15	0	11	12	0	0	0	0	0	0	0	0	0	0	23
	17:30	1	17	4	0	0	0	0	0	0	0	0	0	0	22
	17:45	0	12	6	0	0	0	0	0	0	1	0	0	0	19
	18:00	1	8	5	0	0	0	0	0	0	0	3	0	0	17
	18:15	0	11	4	0	0	0	0	0	0	0	1	0	0	16
	18:30	2	12	5	0	0	0	0	0	1	0	0	0	0	20
	18:45	0	18	7	0	0	0	0	0	0	0	0	0	0	25
	19:00	1	12	6	0	0	0	0	0	0	0	0	0	0	19
	19:15	0	8	7	0	0	0	0	0	0	0	1	0	0	16
	19:30	0	6	7	0	0	0	0	0	0	0	0	0	0	13
	19:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
	20:00	0	4	5	0	0	0	0	0	0	0	0	0	0	9
	20:15	0	11	4	0	0	0	0	0	1	0	0	0	0	16
	20:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
	20:45	0	10	4	0	0	0	0	0	0	0	0	0	0	14
	21:00	1	6	3	0	0	0	0	0	0	0	0	0	0	10
	21:15	0	6	1	0	1	0	0	0	0	0	0	0	0	8
	21:30	3	8	1	0	0	0	0	0	0	0	0	0	0	12
	21:45	0	6	3	0	0	0	0	0	0	0	0	0	0	9
	22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	22:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	22:30	1	3	2	0	0	0	0	0	0	0	0	0	0	6
	22:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	23:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	23:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
06/13/24	23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Thu	23:45	0	1	0	0	0	1	0	0	0	0	0	0	0	2
Daily Total :		19	772	336	0	21	13	0	9	3	2	24	1	2	1202
Percent :		2%	64%	28%	0%	2%	1%	0%	1%	0%	0%	2%	0%	0%	
Average :		0	8	4	0	0	0	0	0	0	0	0	0	0	12

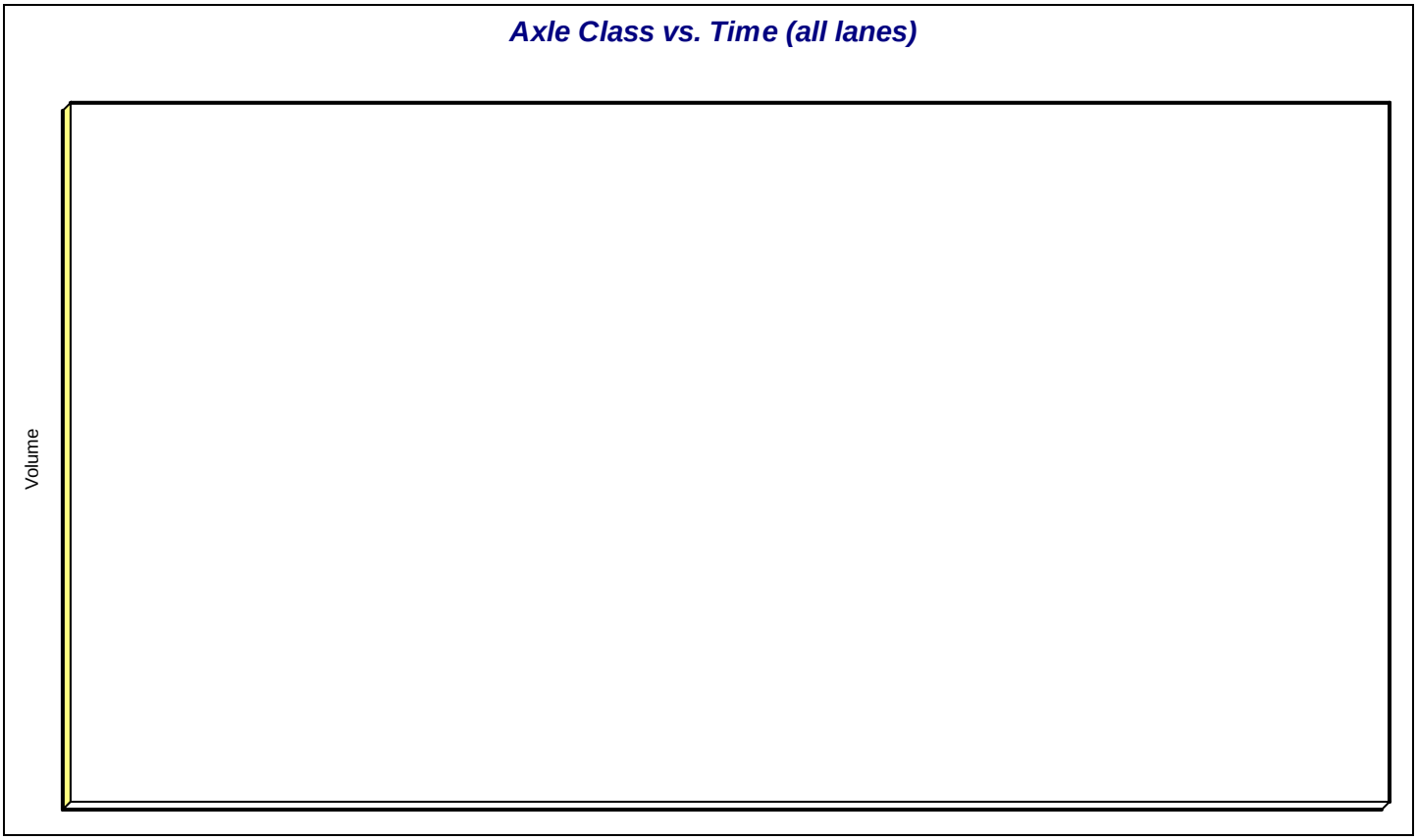
Basic Axle Class Summary: SM242002

(DEFAULTC) Description	Lane	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
TOTAL COUNT :	#1.	28	939	319	0	29	22	1	7	6	3	12	0	3	1369
	#2.	19	772	336	0	21	13	0	9	3	2	24	1	2	1202
		47	1711	655	0	50	35	1	16	9	5	36	1	5	2571
Percents :	#1.	2%	69%	23%	0%	2%	2%	0%	1%	0%	0%	1%	0%	0%	53%
	#2.	2%	64%	28%	0%	2%	1%	0%	1%	0%	0%	2%	0%	0%	47%
		2%	67%	25%	0%	2%	1%	0%	1%	0%	0%	1%	0%	0%	
Average :	#1.	0	10	3	0	0	0	0	0	0	0	0	0	0	13
	#2.	0	8	4	0	0	0	0	0	0	0	0	0	0	12
		0	18	7	0	0	0	0	0	0	0	0	0	0	25
Days & ADT :	#1.	1.0	1369												
	#2.	1.0	1202												
		1.0	2571												

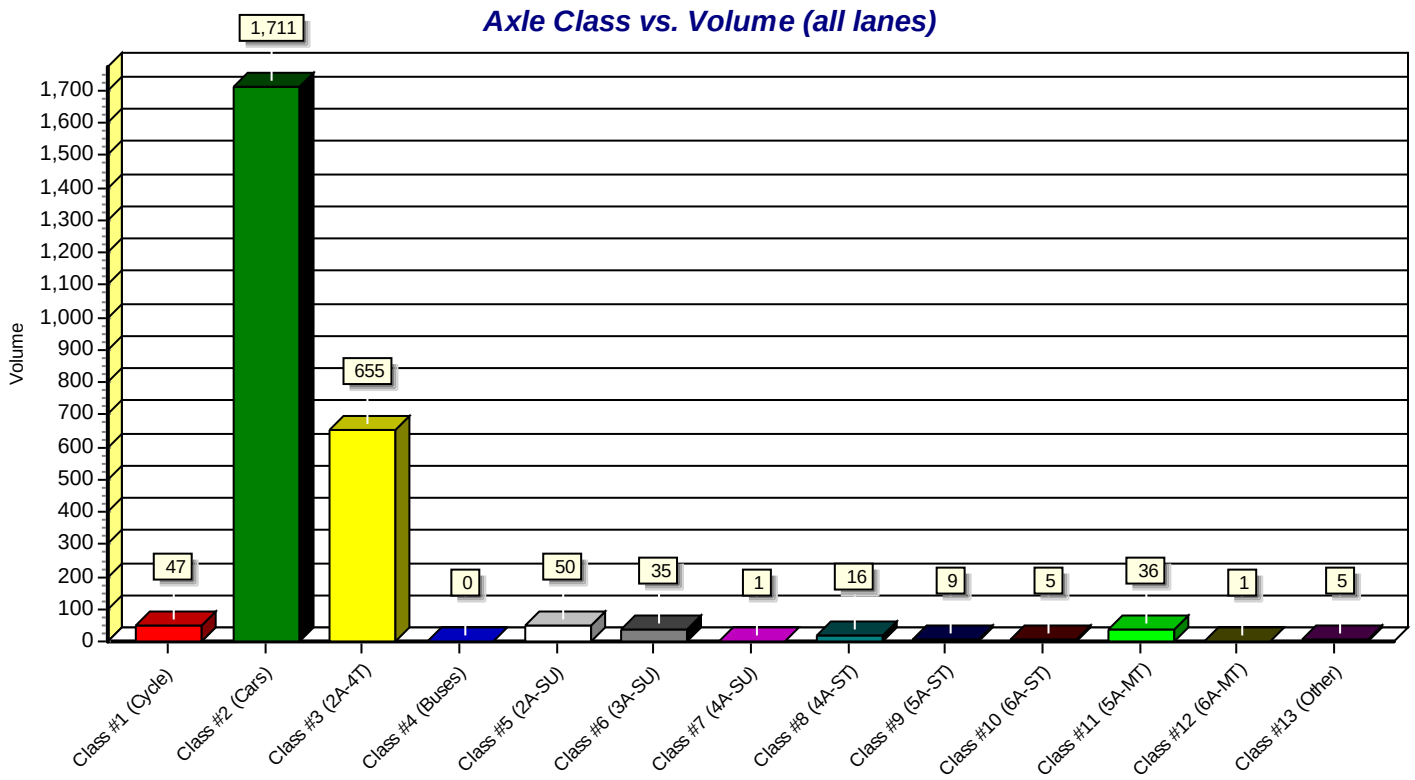
Axle Class Percentages:



Axle Class vs. Time (all lanes)



SM242002 Axle Class Charts For Data From: 00:00 - 06/13/2024 To: 23:59 - 06/13/2024



Appendix E Information on speed limit of Port Davidson Road from Township of West Lincoln

REPORT

PUBLIC WORKS/RECREATION/ARENA COMMITTEE

DATE: December 7, 2020

REPORT NO: PW-29-2020

SUBJECT: **Speed Limit Review Policy & Speed Limit Reduction Requests**

CONTACT: Mike DiPaola, P.Eng., Director of Public Works and Recreation
Jennifer Bernard, C.E.T., Coordinator of Engineering Services

OVERVIEW:

- The Township received requests to lower the speed limit along sections of Port Davidson Road and Young Street.
- Public Works is recommending the Township adopt a Speed Limit Review Policy to ensure a consistent approach is used to review speed limit reduction requests.
- Public Works is recommending there is no speed limit reduction on Port Davidson Road and Young Street.

RECOMMENDATION:

1. That, Report PW-29-2020, re: Speed Limit Review Policy & Speed Limit Reduction Requests, dated December 7, 2020 be received; and

2. That, Council approve the Speed Limit Review Policy attached to this Report; and

3. That, the speed limits on Port Davidson Road and Young Street remain unchanged at 80 km/hr.

ALIGNMENT TO STRATEGIC PLAN:

Theme #1

- Strong Transportation Connections – West Lincoln has transportation infrastructure that is safe for motorists, cyclists and pedestrians, and networks that are well maintained and connected within our Community, with other Niagara Communities and major highways.

BACKGROUND:

At the July 27, 2020 meeting of Council, Public Works was directed to investigate the reduction of the speed limit along Port Davidson Road (between Sixteen Rd and RR14/Smithville Rd) and along Young St (between RR12/Grimsby Mountain Rd and RR14/Thirty Road).

CURRENT SITUATION:
Public Works currently does not have a formal policy on how to complete a speed limit review on a Township road. These requests are becoming more frequent so staff believe the Township needs an approved policy in place to ensure a consistent, thorough and defensible approach to completing speed limit reduction reviews.

The Wood Group was retained to complete the speed limit reduction reviews for Port Davidson Road and Young Street, while also producing a white paper on establishing speed limits from which staff could draft a policy. Public Works has finalized a policy, attached as Appendix A, for staff to follow when completing these reviews.

Speed Limit Review Policy
The Speed Limit Review Policy involves first collecting traffic data for a roadway to acquire the average daily traffic volume and the 85th percentile speed (the speed at or below which 85% of all vehicles are observed to travel under free-flowing conditions). This ensures staff are working with current and accurate traffic information for the road.

Next, depending if the review is for an urban or rural road, staff would apply two different methodologies for reviewing the road characteristics and risk factors to acquire a recommended speed limit. These include the following:

1. The *Canadian Guidelines for Establishing Posted Speed Limits* (CGEPSL) was developed by the Transportation Association of Canada (TAC) to provide guidance and enhance consistency in the evaluation of posted speed limits. TAC has released a spreadsheet that users populate with risk factors about the road section including the road alignment, road width, roadside hazards, pedestrian and cyclist exposure, the number of intersections of other roads and driveway entrances, etc. The spreadsheet will be completed by staff for all speed limit reviews.

   TAC also provides criteria to compare with the existing speed limit and 85th percentile speed to determine if a speed limit change is warranted. Staff will apply this to the traffic data collected.

2. The Niagara Region adopted a Speed Limit Policy that includes a tool to assess the risks of a particular road section. Similar to the TAC spreadsheet, questions are answered relating to the risk factors of the road section and based on the score a recommended speed limit is produced. This is specifically designed for rural roads and will only be used by staff for those reviews.

Based on the outcome, staff will make a final determination if a speed limit change is warranted.

Speed Limit Reduction Reviews
The Wood Group was provided with current traffic study data and applied the methodology above to the speed limit reviews for Port Davidson Rd (between Sixteen Rd and RR14/Smithville Rd) and Young St (between RR12/Grimsby Mountain Rd and RR14/Thirty Rd). See Appendix B for key plans.

1. Port Davidson Rd between Sixteen Rd and RR14/Smithville Rd is a two-lane undivided rural roadway. The average annual daily traffic volumes are in the range of 1500 – 1600, as such it is considered to be a collector roadway. It has a statutory speed limit of 80 km/h and the 85th percentile speed is 93 km/h.

   The TAC CGEPSL spreadsheet characterizes the roadway as 'low' to 'medium' across all risk factors and recommends a speed limit of 70 km/h. The Niagara Region spreadsheet returned a recommendation of an 80km/h speed limit. Considering the low to medium risk factors and that the 85th percentile speed is 93 km/h, it is recommended that the Township make no adjustments to the statutory speed limit.

2. Young St between RR12/Grimsby Mountain Rd and RR14/Thirty Rd is a two-lane undivided rural roadway. The average annual daily traffic volumes are 1500, as such it is considered to be a collector roadway. It has a statutory speed limit of 80 km/h and the 85th percentile speed is 93 km/h.

   The TAC CGERSL spreadsheet characterizes the roadway as 'low' to 'medium' across all risk factors and recommends a speed limit of 70 km/h. The Niagara Region spreadsheet returned a recommendation of an 80 km/h speed limit. Considering the low to medium risk factors and that the 85th percentile speed is 93 km/h, it is recommended that the Township make no adjustments to the statutory speed limit.

FINANCIAL IMPLICATIONS:
Not Applicable.

INTER-DEPARTMENTAL COMMENTS:
This report has been reviewed by the Clerks Department and the CAO.

CONCLUSION:
Staff recommends that Council approve the Speed Limit Review Policy, attached as Appendix A, to be used for all future speed limit review requests on Township roads.

Staff also recommends that the speed limits on Port Davidson Road and Young Street remain unchanged at 80 km/h.

Prepared by:

J. Bernard

_____

Jennifer Bernard, C.E.T.
Coordinator of Engineering Services

Submitted by:

_____

Mike DiPaola, P.Eng.
Director of Public Works & Recreation

Approved by:

_____

Bev Hendry
CAO

Appendix A – Speed Limit Review Policy
Appendix B – Key Plan

Appendix F STAMSON Sample Calculations

STAMSON 5.0 NORMAL REPORT Date: 09-07-2024 13:50:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1_2f.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 193.60 / 193.60 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 50.12 + 0.00) = 50.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-11.11	0.00	0.00	0.00	0.00	50.12

Segment Leq : 50.12 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 62.36 + 0.00) = 62.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -1.25 0.00 0.00 0.00 0.00 62.36

Segment Leq : 62.36 dBA

Total Leq All Segments: 62.61 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 42.10 + 0.00) = 42.10 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -11.11 0.00 0.00 0.00 0.00 42.10

Segment Leq : 42.10 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 55.29 + 0.00) = 55.29 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -1.25 0.00 0.00 0.00 0.00 55.29

Segment Leq : 55.29 dBA

Total Leq All Segments: 55.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.61
(NIGHT): 55.49

STAMSON 5.0 NORMAL REPORT Date: 09-07-2024 13:51:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1_ola.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 193.60 / 193.60 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 50.12 + 0.00) = 50.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-11.11	0.00	0.00	0.00	0.00	50.12

Segment Leq : 50.12 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 62.36 + 0.00) = 62.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -1.25 0.00 0.00 0.00 0.00 62.36

Segment Leq : 62.36 dBA

Total Leq All Segments: 62.61 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 42.10 + 0.00) = 42.10 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -11.11 0.00 0.00 0.00 0.00 42.10

Segment Leq : 42.10 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 55.29 + 0.00) = 55.29 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -1.25 0.00 0.00 0.00 0.00 55.29

Segment Leq : 55.29 dBA

Total Leq All Segments: 55.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.61
(NIGHT): 55.49

STAMSON 5.0 NORMAL REPORT Date: 12-07-2024 09:23:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2_2f.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 96.40 / 96.40 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 160.83 / 160.83 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 53.15 + 0.00) = 53.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-8.08	0.00	0.00	0.00	0.00	53.15

Segment Leq : 53.15 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 53.31 + 0.00) = 53.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -10.30 0.00 0.00 0.00 0.00 53.31

Segment Leq : 53.31 dBA

Total Leq All Segments: 56.24 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 45.13 + 0.00) = 45.13 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -8.08 0.00 0.00 0.00 0.00 45.13

Segment Leq : 45.13 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 46.24 + 0.00) = 46.24 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -10.30 0.00 0.00 0.00 0.00 46.24

Segment Leq : 46.24 dBA

Total Leq All Segments: 48.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.24
(NIGHT): 48.73

STAMSON 5.0 NORMAL REPORT Date: 12-07-2024 09:24:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2_ola.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 96.40 / 96.40 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 160.83 / 160.83 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 53.15 + 0.00) = 53.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-8.08	0.00	0.00	0.00	0.00	53.15

Segment Leq : 53.15 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 53.31 + 0.00) = 53.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -10.30 0.00 0.00 0.00 0.00 53.31

Segment Leq : 53.31 dBA

Total Leq All Segments: 56.24 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 45.13 + 0.00) = 45.13 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -8.08 0.00 0.00 0.00 0.00 45.13

Segment Leq : 45.13 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 46.24 + 0.00) = 46.24 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -10.30 0.00 0.00 0.00 0.00 46.24

Segment Leq : 46.24 dBA

Total Leq All Segments: 48.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.24
(NIGHT): 48.73

STAMSON 5.0 NORMAL REPORT Date: 12-07-2024 09:43:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6_2f.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 59.98 + 0.00) = 59.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-1.25	0.00	0.00	0.00	0.00	59.98

Segment Leq : 59.98 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 48.38 + 0.00) = 48.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -15.23 0.00 0.00 0.00 0.00 48.38

Segment Leq : 48.38 dBA

Total Leq All Segments: 60.27 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -1.25 0.00 0.00 0.00 0.00 51.96

Segment Leq : 51.96 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 41.31 + 0.00) = 41.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -15.23 0.00 0.00 0.00 0.00 41.31

Segment Leq : 41.31 dBA

Total Leq All Segments: 52.32 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.27
(NIGHT): 52.32

STAMSON 5.0 NORMAL REPORT Date: 12-07-2024 09:43:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6_ola.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Townline (day/night)

Car traffic volume : 4246/326 veh/TimePeriod *
Medium truck volume : 180/14 veh/TimePeriod *
Heavy truck volume : 99/8 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2571
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 3.97
Heavy Truck % of Total Volume : 2.18
Day (16 hrs) % of Total Volume : 92.88

Data for Segment # 1: Townline (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Pt Davidson (day/night)

Car traffic volume : 3040/301 veh/TimePeriod *
Medium truck volume : 164/16 veh/TimePeriod *
Heavy truck volume : 31/3 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1876
Percentage of Annual Growth : 6.60
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 5.06
Heavy Truck % of Total Volume : 0.96
Day (16 hrs) % of Total Volume : 90.99

Data for Segment # 2: Pt Davidson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Townline (day)

Source height = 1.22 m

ROAD (0.00 + 59.98 + 0.00) = 59.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.23	0.00	-1.25	0.00	0.00	0.00	0.00	59.98

Segment Leq : 59.98 dBA

Results segment # 2: Pt Davidson (day)

Source height = 0.99 m

ROAD (0.00 + 48.38 + 0.00) = 48.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

---
-90 90 0.00 63.61 0.00 -15.23 0.00 0.00 0.00 0.00 48.38

Segment Leq : 48.38 dBA

Total Leq All Segments: 60.27 dBA

Results segment # 1: Townline (night)

Source height = 1.23 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 53.21 0.00 -1.25 0.00 0.00 0.00 0.00 51.96

Segment Leq : 51.96 dBA

Results segment # 2: Pt Davidson (night)

Source height = 0.98 m

ROAD (0.00 + 41.31 + 0.00) = 41.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 56.54 0.00 -15.23 0.00 0.00 0.00 0.00 41.31

Segment Leq : 41.31 dBA

Total Leq All Segments: 52.32 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.27
(NIGHT): 52.32