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Notting Hill Realty Investments Inc c/o The Regional Group of Companies

Notting Hill Subdivision, 2128 Trim Road, Ottawa

Noise Impact Feasibility Report

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

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NOTTING HILL SUBDIVISION
2128 TRIM ROAD
OTTAWA, ONTARIO

NOISE IMPACT FEASIBILITY REPORT

Prepared for:

Notting Hill Realty Investments Inc.
c/o The Regional Group

Prepared by:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Kanata, Ontario
K2M 1P6

Issued: June 29, 2018

Ref: R-2018-078
Novatech File No. 117155

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Engineers, Planners & Landscape Architects

June 29, 2018

Planning and Growth Management Department
City of Ottawa
110 Laurier Ave. West, 4th Floor
Ottawa, Ontario
K1P 1J1

Attention: **William Curry**

Reference: **Legault Lands, 2128 Trim Road**
Noise Impact Assessment Report
Novatech File No.: 117155

Please find enclosed three (3) copies of the "Noise Impact Feasibility Report" for the proposed Notting Hill Subdivision. The site is located in the City of Ottawa, Phase 1 is located adjacent Portobello Boulevard and Aquaview Drive and Phases 2-5 are located between Trim Road, Innes Road, and Provence Avenue.

The report assesses the environmental impact of noise to the outdoor and indoor living areas of the proposed residential development, the feasibility of mitigation measures, and recommend the appropriate noise attenuation requirements. This report is submitted in support of the draft plan of subdivision application.

If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

NOVATECH

Melanie Riddell, P. Eng.
Senior Project Manager | Land Development

Encl.

cc: David Kardish, Notting Hill Realty Investments Inc. c/o The Regional Group of Companies

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1.0 INTRODUCTION

Novatech has been retained by the Notting Hill Realty Investments Inc. c/o The Regional Group to prepare a noise feasibility study in support of the proposed Notting Hill Subdivision draft plan application, located at 2128 Trim Road in the City of Ottawa. This study was prepared to assess the environmental impact of noise to the outdoor living areas, review the feasibility of various noise mitigation methods, and confirm the noise levels can be reduced to the City of Ottawa approved levels.

The proposed site includes 5 phases and is located in the east end of the City of Ottawa, southwest of the Innes Road/Trim Road intersection, as shown on the Key Plan (**Figure 1**). The 27.7ha development consists of a mix of residential and open space uses, including 495 residential lots, 1 medium density residential block, 1 park block and 1 partial school block., refer to Concept/Phasing Plan (**Figure 2**). The property is bordered by existing residential, park, and school developments.

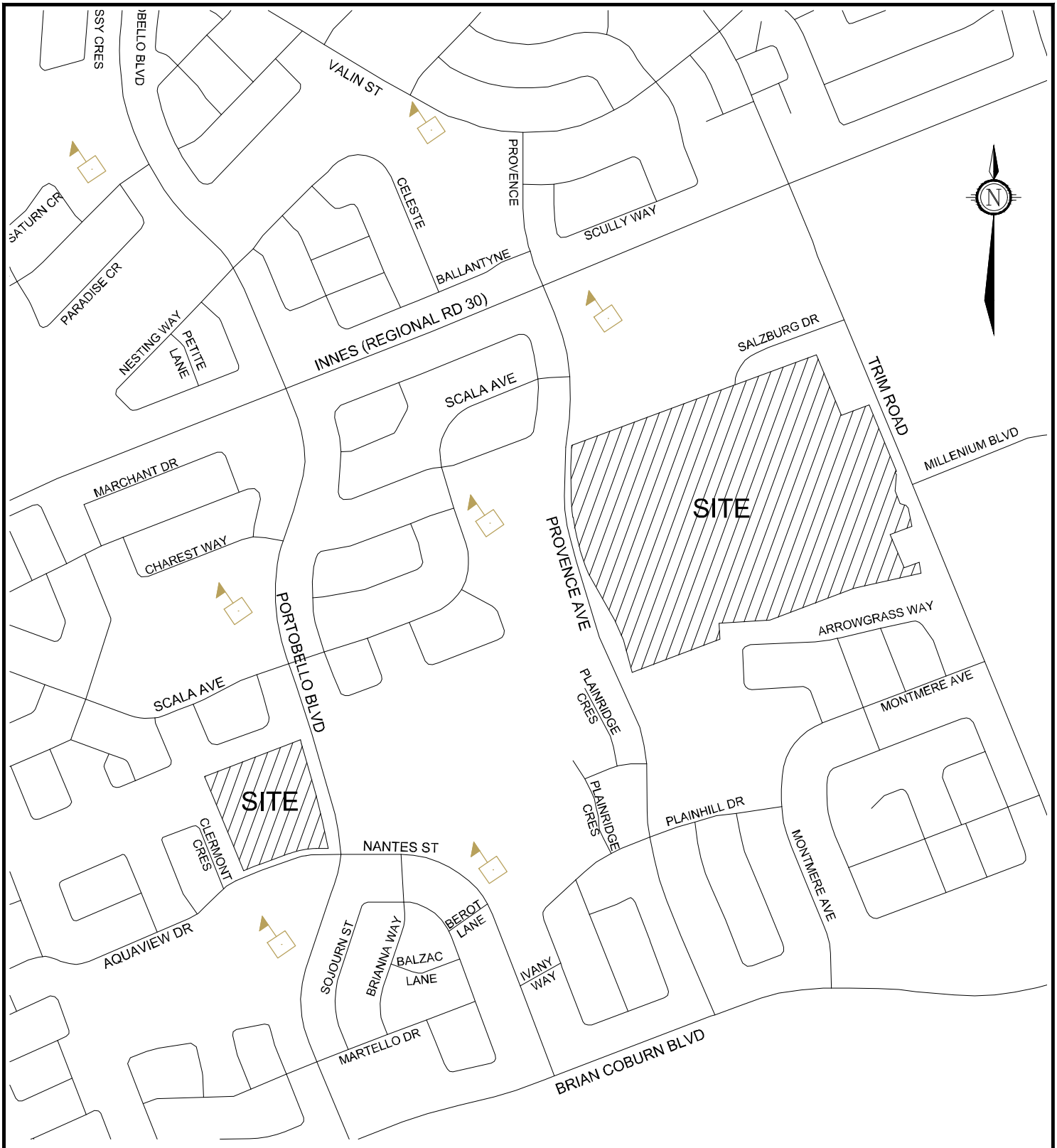
2.0 BACKGROUND AND REPORT LIMITATIONS

The City of Ottawa's Official Plan (OP) and Environmental Noise Control Guidelines (ENCG) stipulates a detailed noise study shall be prepared when a noise sensitive development is within proximity to surface transportation, stationary, and aircraft noise sources. **Table 2.1** confirms all noise sources considered in this report. All other sources of noise are located beyond the limits of consideration outlined in Part 1, Section 2.1 (When a study is required) of the ENCG.

Table 2.1. Road Classification

Street	Noise Source	Road Details		
		Classification	Speed (km/hr)	AADT
Aquaview Drive	Traffic	2-UCU	50	8,000
Provence Avenue	Traffic	2-UCU	50	8,000
Scala Avenue	Traffic	2-UCU	50	8,000
Street 1	Traffic	2-UCU	50	8,000
Portobello Boulevard	Traffic	4-UMCU	50	24,000
Trim Road	Traffic	4-AUD	60	35,000

In advance of the draft plan submission, the concept plan was reviewed by City staff. At that time alternative site layouts were considered to limit the impact of noise on the units. Where possible window streets have been provided along Trim Road and Provence Avenue to minimize exposure of outdoor living areas to noise sources.



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KEY PLAN

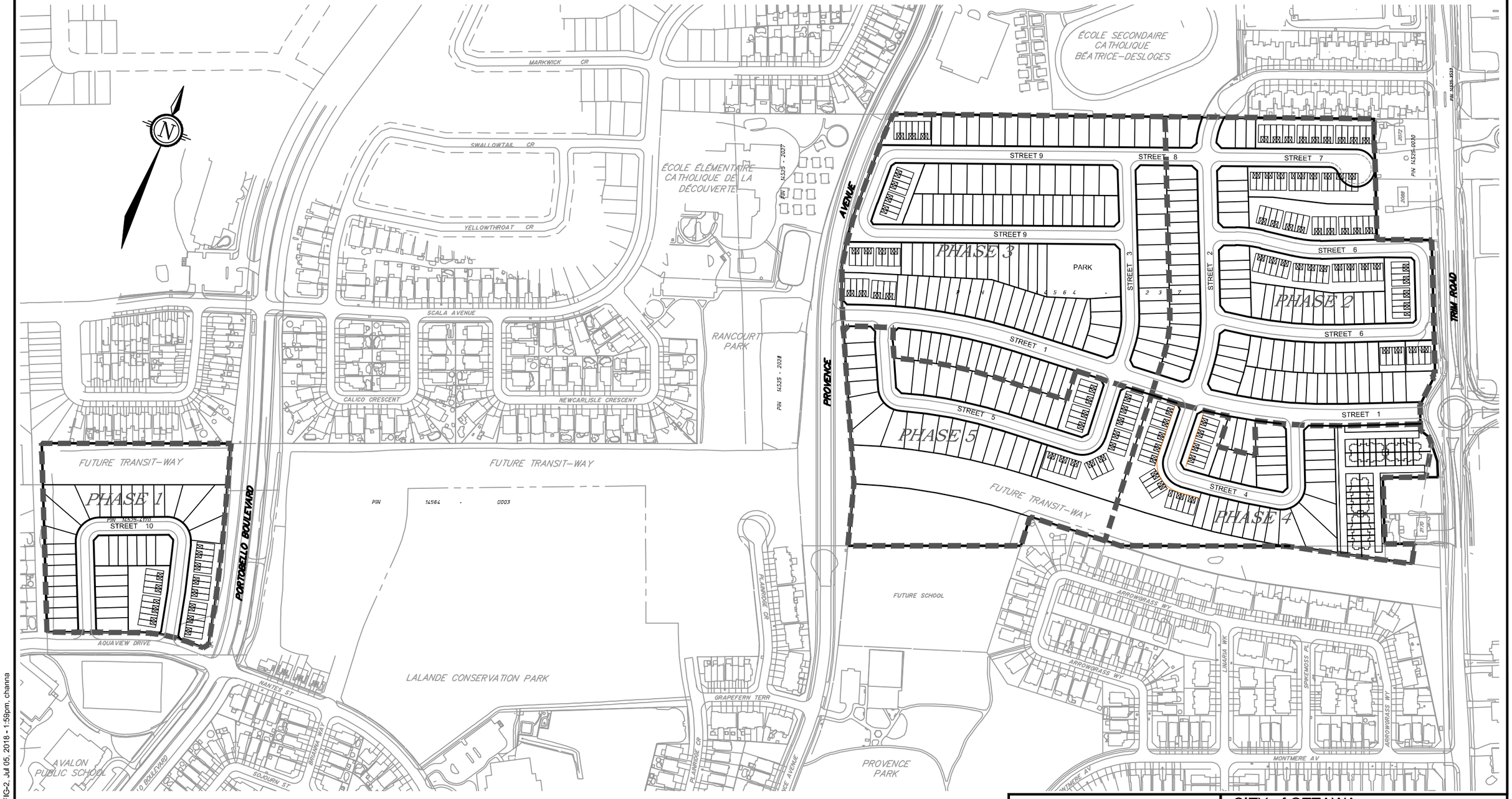
NOTTING HILL SUBDIVISION
CITY OF OTTAWA

2128 TRIM ROAD

DATE	JOB	FIGURE
JUNE 2018	117155	FIG-1

M:\2017\117155\CAD\Design\Figures\Design Brief\FIG1-KP.dwg, FIG1-KP, Jul 05, 2018 - 3:50pm, channa

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CITY of OTTAWA

NOTTING HILL SUBDIVISION (2128 TRIM ROAD)

CONCEPT / PHASING PLAN

SCALE 1 : 3750 (0 30 60 90 120 150)

DATE JUN 2018 | JOB 117155 | FIGURE FIG-2

M:\2017\117155\CAD\Design\117155-PHS.dwg, FIG-2, Jul 05, 2018 - 1:59pm, channa

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This report does not consider the proposed transitway, located north of Phase 1 and south of Phases 2-5, as noise source because, as per Map 5 of the Transportation Master Plan, Rapid Transit and Transit Priory Network – 2031 Affordable Network, the transit way is not included in the City's affordable transportation budget. The design of the transit way will be required to mitigate the increased noise levels on the surrounding residential areas; the preliminary transit design prepared for the Environmental Assessment anticipates noise walls with the transitway.

At this time the layout, grading, servicing, and design of the residential units of all phases is subject to change due to City comments, market demands, and potential buyer requests; therefore, this report only considers outdoor noise levels and anticipates vulnerable indoor noise locations. During detailed design this report will to be required to be updated to analyze/mitigate the indoor noise levels and confirm the outdoor noise measures of this report. During detailed design the outdoor noise attenuation measures and window and wall facades will be confirmed.

3.0 CITY OF OTTAWA NOISE CONTROL GUIDELINES

3.1 Sound Level Criteria

The City of Ottawa is concerned with noise from aircraft, roads, transitways, and railways, as expressed in Tables 2.2a: Sound Level Limit for Outdoor Living Areas – Road and Rail, 2.2b: Sound Level Limit for Indoor Living Areas Road and Rail, and 2.2c: Supplementary Sound Level Limits for Indoor Spaces – Road and Rail in Part 1, Section 2.2 Applicable Guidelines for Transportation Noise – Road and Rail of the ENCG. However due to the limitations discussed in Section 2.0, this report only considers the outdoor living areas. During detailed design the indoor sound levels will be reviewed and addressed.

As per Table 2.2a, the maximum allowable sound level for outdoor living areas between 7am and 11pm is 55 dBa. For reference, Table 2.2a of the ENCG is included in **Appendix A**.

Outdoor Living Area is defined as:

- **Outdoor Living Area (OLA):** The outdoor amenity area provided for quiet enjoyment of the outdoor environment during the daytime period (i.e., backyards, terraces and patios). OLA noise levels are considered 3.0m from the building façade, 1.5m above grade.

3.2 Noise Attenuation Requirements

When OLA sound levels are predicted to be approximately equal to or less than 55dBa no attenuation measures are required. As the OLA noise levels increase above 55dBa attenuation measures are required to reduce noise levels. When noise attenuation is required, the City of Ottawa typically recommends the following OLA noise measures:

- Adjusting the site layout to maximize noise insensitive lands uses between the noise source and receptor and/or orienting blank walls face towards the noise source
- Constructing noise barriers wall/berms

The site layout was prepared with noise sources in mind. Where possible, window streets have been included along Trim Road and Provence Avenue and the units have been oriented with sideyards exposed to noise sources.

Road noise was found to exceed the allowable 55dBA noise level criteria at several locations. Where the outdoor amenity areas can't be protected by the building walls, noise barriers are required. As per Section 3.2.2 of Part 5, Technical Requirements for Acoustic Barrier Systems of the ENCG, the maximum noise barrier height for new development is 2.5m. Where the mitigated noise levels exceed the City's criteria, warning clauses will be required to be included in the sales/lease agreements to inform the purchasers of the specific mitigation measures utilized and if the noise is expected to increase in the future, and the requirements to maintain the specified noise mitigation measures. Wall and Window treatments will be confirmed during detailed design.

4.0 PREDICTION AND MITIGATION OF NOISE LEVELS

4.1 Road Traffic

As per Section 3.2, Noise Control Detailed Study Requirements of Part 4, Technical Requirements for Environmental Noise Control Studies and Implementation of the ENCG, traffic is to be based on City (or responsible agency) approved corridor and traffic data. Traffic volumes assumed in this report are based on the City of Ottawa's Appendix B: Table of Traffic and Road Parameters To Be Used For Sound Level, refer to **Appendix A**. **Table 2.1** confirms the roads, road parameters, and noise sources considered in this report. In addition, this report also considers the projected 2025 traffic volumes of the Transportation Impact Assessment Forecasting Report (TIAFR), R-2018-070, prepared by Novatech in support of the Notting Hill draft plan application. The TIAFR 2025 project AADT numbers are assumed to be 10 times larger than the projected pm peak hour vehicle traffic, refer to Appendix A for the TIAFR 2025 project traffic volumes.

4.2 Noise Level Analysis

The noise levels for the site were analyzed using version 5.03 of the STAMSON computer noise modelling program. Refer to the Noise Control Plan (Drawing Number 117155-NC), located in **Appendix C**, for confirmation of: receiver locations, receiver elevations, and receiver distances to noise sources. The calculated noise levels for all receiver locations generated from STAMSON are listed in **Table 4.2**.

Table 4.2: Calculated Noise Level Results Based on ENCG

Receiver		Calculated Noise Level (dBa), 7:00-23:00		Mitigation Method
Name	Phase	Unattenuated	Attenuated	
OLA 1	1	59.9	55.2*	2.5m Noise Barrier
OLA 2	1	47.0	-	-
OLA 3	1	65.9	58.4*	2.5m Noise Barrier
OLA 4	5	63.6	56.0*	2.5m Noise Barrier
OLA 5	3	61.9	53.5	2.5m Noise Barrier
OLA 6	4/5	62.2	54.1	2.5m Noise Barrier
OLA 7	2	58.5	53.8	2.2m Noise Barrier
OLA 8	2	53.3	-	-
OLA 9	2	64.5	59.0*	2.5m Noise Barrier
OLA 10	4	46.8	-	-

***** Denotes Attenuated Sound Level in Excess of the Criteria

Table 4.3: Calculated Noise Level Results Based on TIAFR 2025 Projected Traffic

Receiver		Calculated Noise Level (dBa), 7:00-23:00		Mitigation Method
Name	Phase	Unattenuated	Attenuated	
OLA 1	1	56.8	52.0	2.5m Noise Barrier
OLA 2	1	-	-	-
OLA 3	1	61.4	53.8	2.5m Noise Barrier
OLA 4	5	60.1	53.0	2.5m Noise Barrier
OLA 5	3	58.8	50.5	2.5m Noise Barrier
OLA 6	4/5	59.2	51.1	2.5m Noise Barrier
OLA 7	2	52.8†	48.1	2.2m Noise Barrier
OLA 8	2	-	-	-
OLA 9	2	58.8	53.5	2.5m Noise Barrier
OLA 10	4	-	-	-

† Denotes noise attenuation not required, included for completeness.

Refer to **Appendix B** for all detailed STAMSON noise modelling results.

Analysis confirms when the ENCG traffic volumes are considered OLA 1, OLA 3, OLA 4, and OLA 9 are in excess (less than 5 dBA) of the City's criteria when attenuated with 2.5m noise barriers. Analysis confirms when the TIAFR 2025 project traffic volumes are considered all OLAs are attenuated below the City's criteria.

As per Section 3.4, Exceedance of Provincial Criteria of Part 4, Technical Requirements for Environmental Noise Control Studies and Implementation of the ENCG, minor exceedance (up to 5 dBA) may be considered. It is recommended the City approve the elevated noise levels because the maximum permitted noise barrier height (2.5m) is proposed at all locations where the sound level is exceeded. Furthermore, increasing the noise barrier height is not practical nor desirable due to increased maintenance costs and reduced neighborhood ascetics.

Due to the predicted unattenuated noise levels being above the City of Ottawa guidelines, it is recommended the following noise clause be registered on title and incorporated into the agreement of sale/lease of the lots requiring outdoor noise attenuation:

> Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some outdoor activities as the sound levels may exceed the sound level limits of the City of Ottawa.
>
> To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area and indoor environment that is within City of Ottawa guidelines. The measures for sound attenuation utilized is an acoustic barrier to be owned and maintained in the City right of way.
>
> Additionally, this development includes trees and shrubs to screen the source noise from occupants.

During detailed design the proposed noise attenuation measures to reduce the noise levels outside and inside the units will be confirmed.

5.0 CONCLUSIONS

This report confirms the predicted outdoor noise levels for the proposed Notting Hill Subdivision from traffic is in excess of the City of Ottawa's guidelines. To mitigate the noise levels and inform potential buyers/tenants, the following noise attenuation measures are proposed:

- The installation of acoustic noise barriers as indicated on the Noise Control Plan (117155-NC). During detailed design the grading of the site will need to be confirmed; if substantial grading revisions are proposed, the outdoor noise calculations/attenuation measures will be required to be revised.
- The inclusion of a noise warning clause registered on title and incorporated into the sales/rental agreements of the units requiring outdoor noise attenuation.
- Indoor noise mitigation methods and additional warning clauses to be registered on title and into the sales/rental agreements are to be confirmed during detailed design

This report is respectfully submitted in support of for approval. Please contact the undersigned should you have questions or require additional information.

NOVATECH

Prepared by:

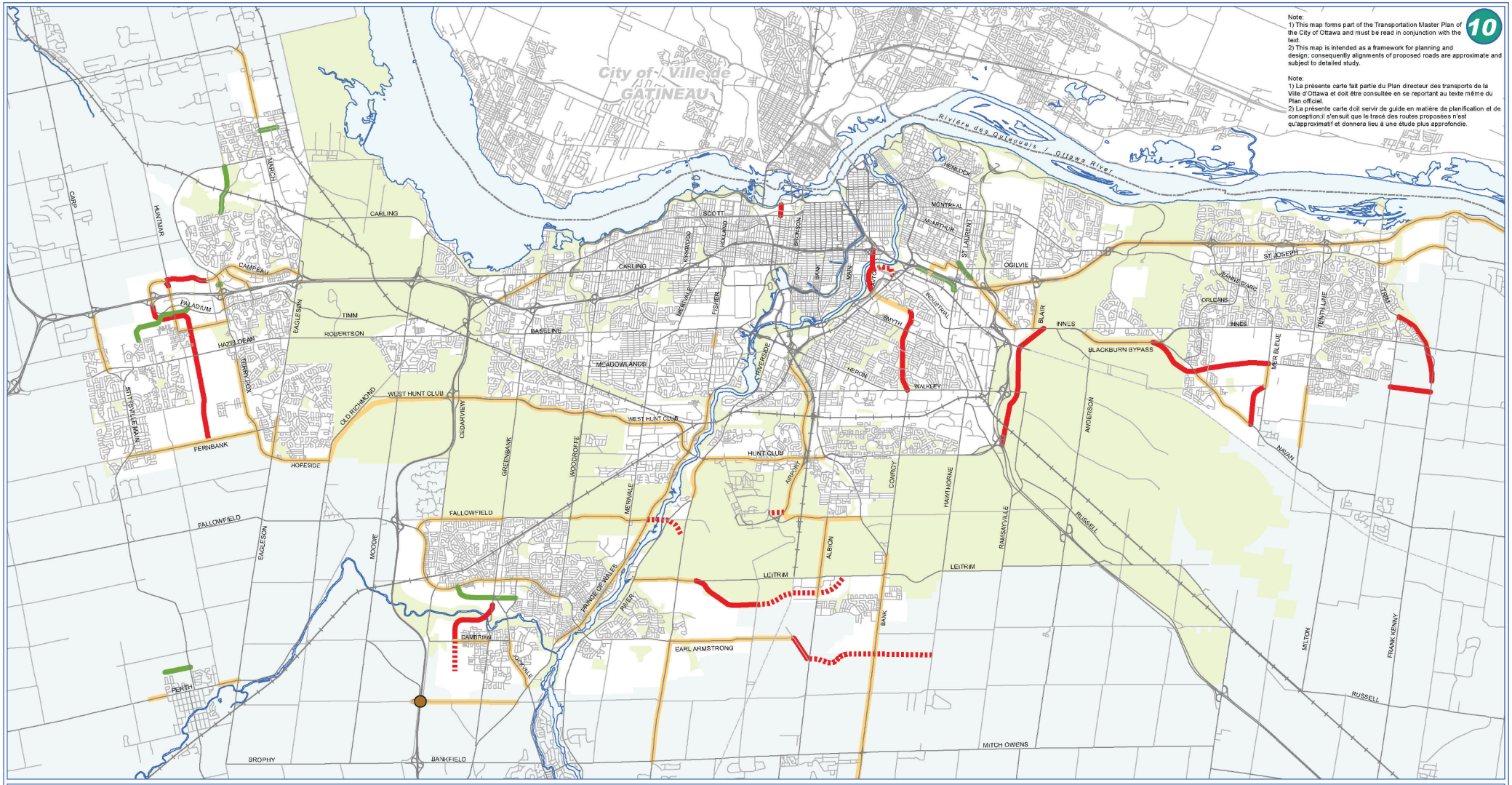
Mark Bowen, B. Eng.
Project Manager - Land Development

Reviewed by:



Melanie Riddell, P. Eng.
Senior Project Manager – Land Development

Appendix A
Environmental Noise Control Guidelines Excerpts and TIAFR Excerpts



Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning and design; consequently alignments of proposed roads are approximate and subject to detailed study.

Note:
1) La présente carte fait partie du Plan directeur des transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.

10

Ottawa

1 0.5 0 1 2 3 km

Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 2015 Revision
Préparé par: Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, Révision 2015

New Arterials — Nouvelles artères
Widened Arterial — Artères élargies
Conceptual Arterial — Conception d'artères
New or Widened Collector — Artères élargies ou nouvelles
New Interchange — Nouvel échangeur

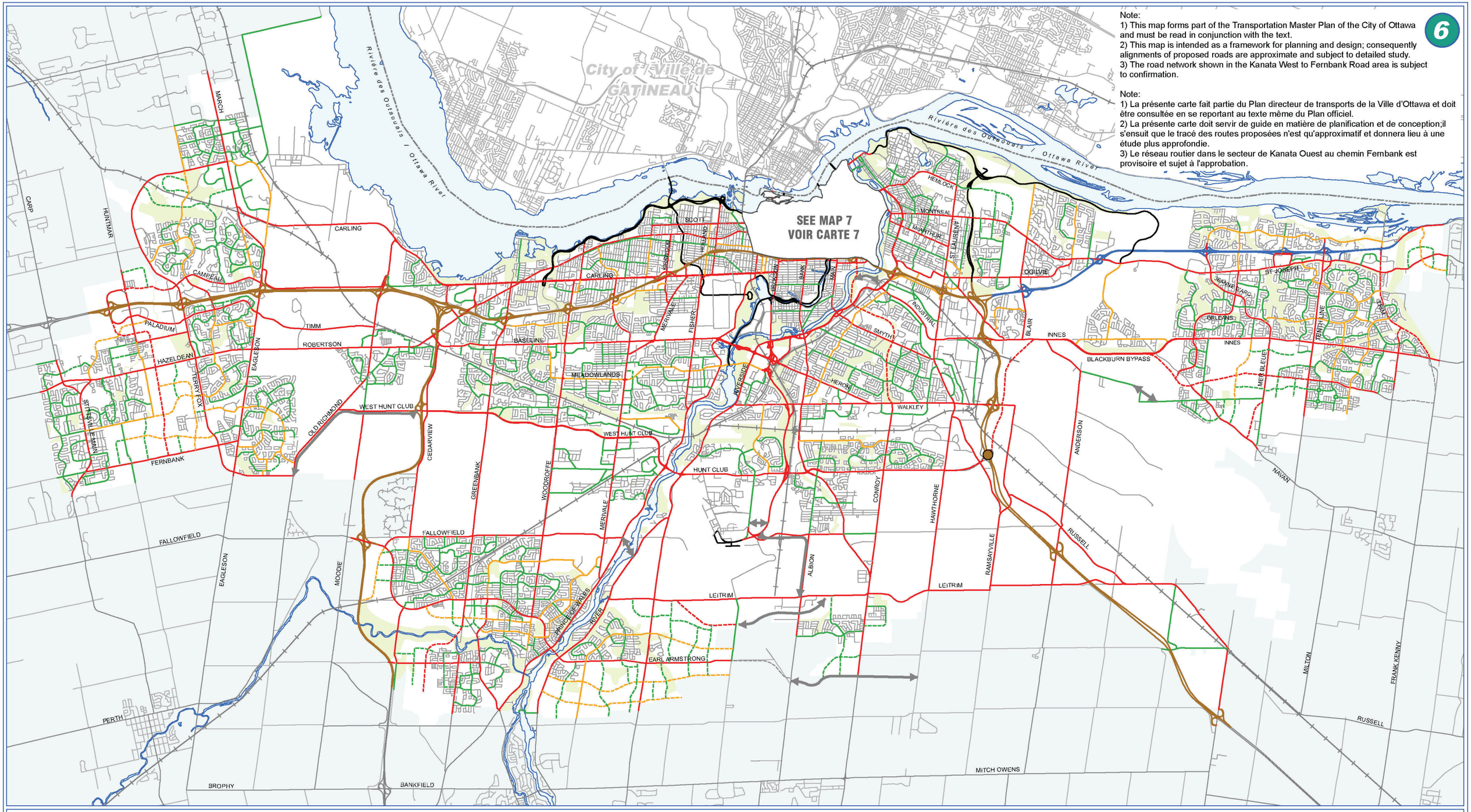
TRANSPORTATION MASTER PLAN - Map 10
ROAD NETWORK – 2031 NETWORK CONCEPT

PLAN DIRECTEUR DES TRANSPORTS - Carte 10
RÉSEAU ROUTIER - CONCEPT DU RÉSEAU 2031

6

Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning and design; consequently alignments of proposed roads are approximate and subject to detailed study.
3) The road network shown in the Kanata West to Fernbank Road area is subject to confirmation.

Note:
1) La présente carte fait partie du Plan directeur de transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) Le réseau routier dans le secteur de Kanata Ouest au chemin Fernbank est provisoire et sujet à l'approbation.



Ottawa

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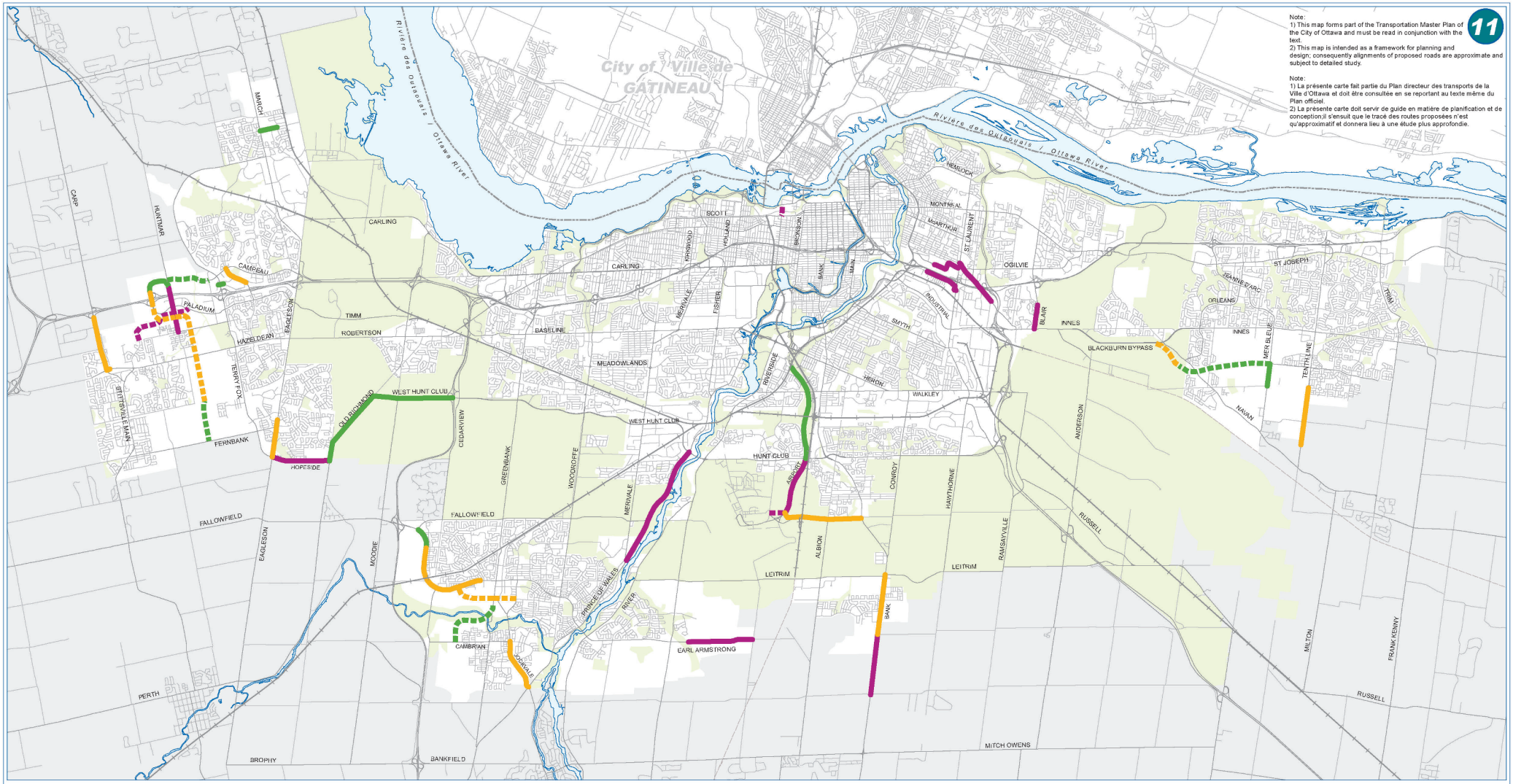
Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 2015 Revision
Préparé par: Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, Révision 2015

Provincial Highway	Chemins de propriété fédéral
Federally Owned Road	Route provinciale
City Freeway	Autoroute de ville

Arterial - Existing	Artère - Établie
Arterial - Proposed (alignment defined)	Artère - Proposé (alignement déterminée)
Arterial - Conceptual (alignment undefined)	Artère - Conceptuelle (alignement à déterminée)
Major Collector - Existing	Grande collectrice - Établie
Major Collector - Proposed	Grande collectrice - Proposé
Collector - Existing	Collectrice - Établie
Collector - Proposed	Collectrice - Proposé
New Interchange	Nouvel échangeur

TRANSPORTATION MASTER PLAN - Map 6
ROAD NETWORK - URBAN

PLAN DIRECTEUR DES TRANSPORTS - Carte 6
RÉSEAU ROUTIER - URBAIN



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11

Ottawa

1 0.5 0 1 2 3 km

Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 2015 Revision
Préparé par: Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, Révision 2015

Phase 1 (2014 - 2019) Widening
Phase 1 (2014 - 2019) New Road
Phase 1 (2014 - 2019) Élargissement
Phase 1 (2014 - 2019) Nouvelle route

Phase 2 (2020 - 2025) Widening
Phase 2 (2020 - 2025) New Road
Phase 2 (2020 - 2025) Élargissement
Phase 2 (2020 - 2025) Nouvelle route

Phase 3 (2026 - 2031) Widening
Phase 3 (2026 - 2031) New Road
Phase 3 (2026 - 2031) Élargissement
Phase 3 (2026 - 2031) Nouvelle route

TRANSPORTATION MASTER PLAN - Map 11

ROAD NETWORK – 2031 AFFORDABLE NETWORK

PLAN DIRECTEUR DES TRANSPORTS - Carte 11

RÉSEAU ROUTIER - RÉSEAU ABORDABLE 2031

D

Note:
1) This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
2) This schedule is intended as a framework for planning and design; consequently alignments of proposed corridors are approximate and subject to detailed study.
3) The rights-of-way to be protected for all Future Rapid Transit Corridors is 40 metres or a lesser width if determined to be suitable by the City. Additional rights-of-way may be required at selected locations for provision of local transit terminals and other transit related infrastructure as well as pedestrian and cycling facilities as appropriate.
4) The City, in consideration of potential long-term public transit requirements, shall protect rapid transit corridors beyond those shown in this schedule to enable each of the identified rapid transit corridors to extend through to the edge of the urban boundary.
5) Locations shown are approximate for many of the not yet built future transit stations, park and ride lots and potential rail yards. This Plan will be periodically updated to reflect changes in the finalized location of such facilities. Inter-regional stations are shown for reference purposes only.

Note:
1) La présente annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente annexe doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) L'emprise à protéger pour tous les couloirs futurs de transport en commun rapide est de 40 mètres ou d'une larguer moindre si la ville décide que cette mesure est convenable. Il peut s'avérer nécessaire d'utiliser, au besoin, d'autres emprises à certains endroits afin de permettre l'installation de terminus de transport en commun local et d'autres infrastructures liées au transport en commun de même que des installations piétonnières et cyclables.
4)La Ville, compte tenu des besoins à long terme potentiels en matière de transport en commun, doit protéger les couloirs de transport en commun rapide au-delà de ce qui figure dans le présent document afin que chacun de ces couloirs puisse être prolongé jusqu'à la limite urbaine.
5) Les emplacements indiqués sont approximatifs pour bon nombre des futurs parcs-o-bus, éventuels dépôts ferroviaires et stations de transport, pas encore construits. Ce plan sera régulièrement mis à jour pour refléter les changements apportés à l'emplacement final de ces installations. Les stations interrégionales ne sont indiquées qu'à titre d'information.

Official Plan for the City of Ottawa
Consolidation and Amendments

Plan officiel de la Ville d'Ottawa
Amendement au plan directeur approuvé

# 96 (03/2012) **# 97** (03/2012)		

OFFICIAL PLAN - Schedule D
RAPID TRANSIT NETWORK

PLAN OFFICIEL - Annexe D
RÉSEAU DE TRANSPORT EN COMMUN RAPIDE

	PRIMARY	PRINCIPAL
Light Rail Transit (LRT)		Train léger sur rail (TLR)
Bus Rapid Transit (BRT)		Transport en commun rapide par autobus (TCRA)
LRT Downtown Tunnel		TLR Tunnel au centre-ville
	SUPPLEMENTARY	**SUPPLÉMENTAIRE**
Intensive Transit - Bus		Transport en commun intensif - autobus
Intensive Transit - Rail		Transport en commun intensif - train
Transit Priority		Transport prioritaire

Park and Ride (see note 5)	Parc-O-Bus (voir la note 5)
Transit Station - rail (see note 5)	Station du transport - train (voir la note 5)
Transit Station - bus (see note 5)	Station du transport - autobus (voir la note 5)
Conceptual Future Transit Corridor	Avenir conceptuel - Couloir de transport en commun
Abandoned Railway Corridor	Emprises ferrouiaires abandonnées
Inter-regional Stations	Stations interrégionales
Potential Rail Yard (see note 5)	Cour de tirage possible pour trains (voir la note 5)

1 0.5 0 1 2 3 Kilometers

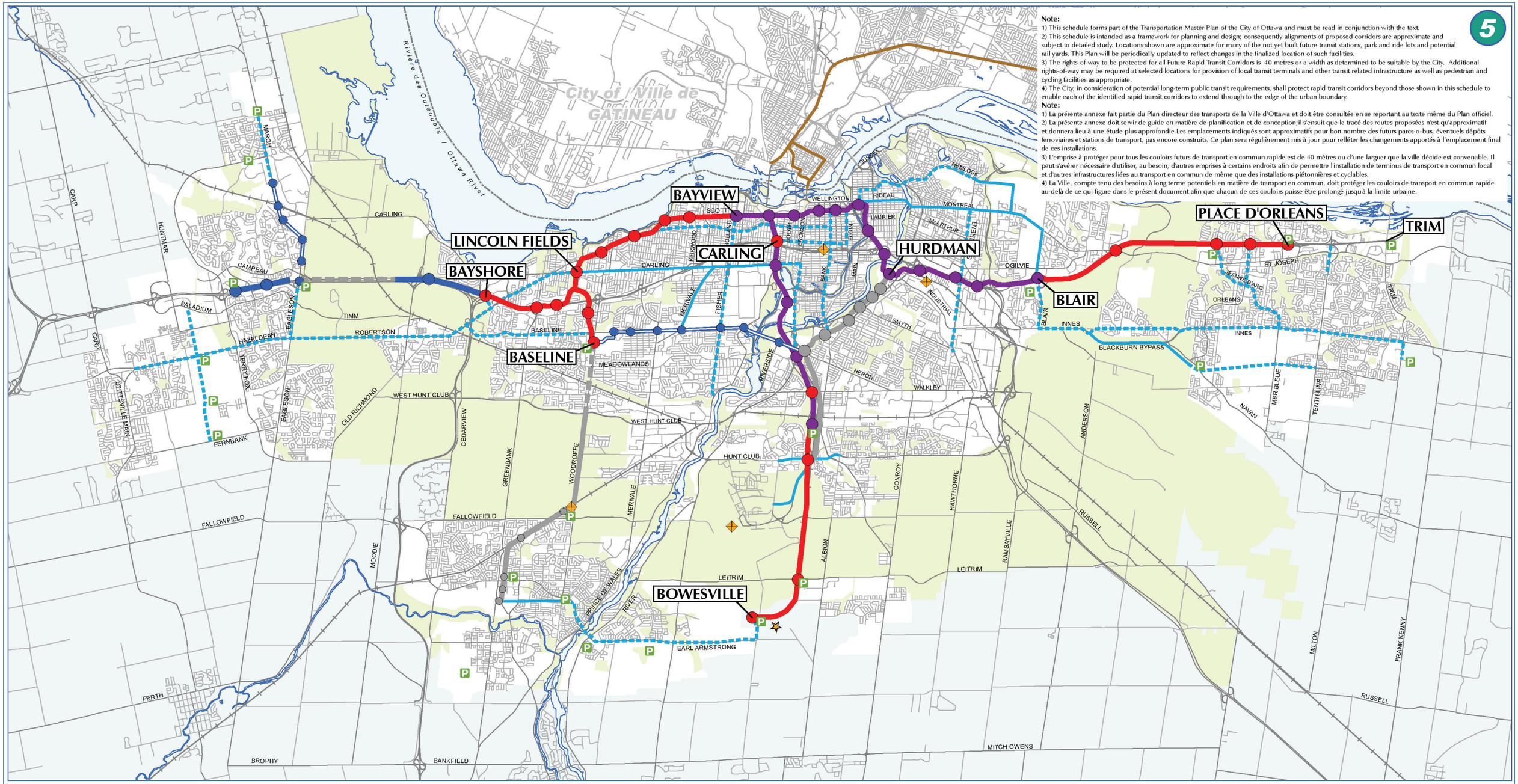
Prepared by: Planning and Growth Management Department
Preparé par: Service de l'urbanisme et de la gestion de la croissance

07 / 2012

5

Note:
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2) This schedule is intended as a framework for planning and design; consequently alignments of proposed corridors are approximate and subject to detailed study. Locations shown are approximate for many of the not yet built future transit stations, park and ride lots and potential rail yards. This Plan will be periodically updated to reflect changes in the finalized location of such facilities.
3) The rights-of-way to be protected for all Future Rapid Transit Corridors is 40 metres or a width as determined to be suitable by the City. Additional rights-of-way may be required at selected locations for provision of local transit terminals and other transit related infrastructure as well as pedestrian and cycling facilities as appropriate.
4) The City, in consideration of potential long-term public transit requirements, shall protect rapid transit corridors beyond those shown in this schedule to enable each of the identified rapid transit corridors to extend through to the edge of the urban boundary.

Note:
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2) La présente annexe doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.Les emplacements indiqués sont approximatifs pour bon nombre des futurs parcs-o-bus, éventuels dépôts ferroviaires et stations de transport, pas encore construits. Ce plan sera régulièrement mis à jour pour refléter les changements apportés à l'emplacement final de ces installations.
3) L'emprise à protéger pour tous les couloirs futurs de transport en commun rapide est de 40 mètres ou d'une larguer que la ville décide est convenable. Il peut s'avérer nécessaire d'utiliser, au besoin, d'autres emprises à certains endroits afin de permettre l'installation de terminus de transport en commun local et d'autres infrastructures liées au transport en commun de même que des installations piétonnières et cyclables.
4) La Ville, compte tenu des besoins à long terme potentiels en matière de transport en commun, doit protéger les couloirs de transport en commun rapide au-delà de ce qui figure dans le présent document afin que chacun de ces couloirs puisse être prolongé jusqu'à la limite urbaine.



RAPID TRANSIT
Existing Bus Rapid Transit (BRT)
Existing Bus Lanes
Existing / Committed Rail
Future Rail
Future Bus Rapid Transit (BRT)
Future Bus Rapid Transit (BRT) - At-Grade Crossings

TRANSIT PRIORITY
Transit Priority Corridor (Continuous Lanes)
Transit Priority Corridor (Isolated Measures)

TRANSPORT EN COMMUN RAPIDE
Transport en commun rapide par autobus actuel
Voies actuelles réservées aux autobus
Réseau de transport ferroviaire actuel/prévu
Réseau ferroviaire futur
Transport en commun rapide par autobus (TCRA) futur
Transport en commun rapide par autobus (TCRA) - passages à niveau futur

PRIORITÉ AU TRANSPORT EN COMMUN
Corridor donnant priorité au transport en commun (voies continues)
Corridor donnant priorité au transport en commun (mesures isolées)

Existing Transit Station - Bus
Existing / Committed Transit Station - Rail
Future Transit Station - Rail
Future Transit Station - Bus
Inter-regional Stations
Potential Rail Yard
Gatineau Rapibus
Park and Ride

Station de transport en commun actuelle – autobus
Station de transport en commun actuelle/prévue – train
Station de transport en commun future – train
Station de transport en commun future – autobus
Stations interrégionales
Cour de tirage possible pour trains
Rapibus de Gatineau
Parc-O-Bus

1 0.5 0 1 2 3 km

Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 2015 Revision
Préparé par: Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, Révision 2015

TRANSPORTATION MASTER PLAN - Map 5
RAPID TRANSIT AND TRANSIT PRIORITY NETWORK - 2031 AFFORDABLE NETWORK

PLAN DIRECTEUR DES TRANSPORTS - Carte 5
RÉSEAU DE TRANSPORT EN COMMUN RAPIDE ET DE TRANSPORT EN COMMUN PRIORITAIRE – RÉSEAU ABORDABLE 2031

OFFICIAL PLAN - ANNEX 10
Land Use Constraints Due to Aircraft Noise

Prepared by: City of Ottawa,
Department of Planning, Transit and the Environment,
September 2011

PLAN OFFICIEL - APPENDICE 10
Contraintes limitant l'utilization en raison du brut des avions

Preparé par : Ville d'Ottawa ,
Le Service de l'urbanisme , du transport en commun et de l'environnement ,
septembre 2011

Airport Vicinity Development Zone
Zone d'aménagement dans le voisinage de l'aéroport

25 Line (Composite of 25 NEF/NEP)
Ligne 25 (ensemble des courbes NEF et NEP 25)

35 Line Noise Exposure Protection (NEP 2023)
Ligne 35 : prévisions à long terme de l'ambiance sonore (NEP 2023)

Airport Zoning Regulations
Règlements de zonage applicables à de l'Aéroport

Airport Operating Influence Zone
Zone d'influence d'exploitation de l'aéroport

Note:
The boundaries of the Ottawa Airport Operating Influence Zone and the Airport Vicinity Development Zone, are not subject to interpretation and their precise locations should be read from a map at a scale of 1:50,000 available from the City of Ottawa and the Ottawa International Airport Authority.

Scale / Échelle
1km 0 1 2 3 km

Ottawa

N

Appendix B: Table of Traffic and Road Parameters To Be Used For Sound Level Predictions

Table B1 Traffic And Road Parameters To Be Used For Sound Level Predictions

Row Width (m)	Implied Roadway Class	AADT Vehicles/Day	Posted Speed Km/Hr	Day/Night Split %	Medium Trucks %	Heavy Trucks % [1]
NA [2]	Freeway, Queensway, Highway	18,333 per lane	100	92/8	7	5
37.5-44.5	6-Lane Urban Arterial-Divided (6 UAD)	50,000	50-80	92/8	7	5
34-37.5	4-Lane Urban Arterial-Divided (4-UAD)	35,000	50-80	92/8	7	5
23-34	4-Lane Urban Arterial-Undivided (4-UAU)	30,000	50-80	92/8	7	5
23-34	4-Lane Major Collector (4-UMCU)	24,000	40-60	92/8	7	5
30-35.5	2-Lane Rural Arterial (2-RAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Urban Arterial (2-UAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Major Collector (2-UMCU)	12,000	40-60	92/8	7	5
30-35.5	2-Lane Outer Rural Arterial (near the extremities of the City) (2-RAU)	10,000	50-80	92/8	7	5
20-30	2-Lane Urban Collector (2-UCU)	8,000	40-50	92/8	7	5

[1] The MOE Vehicle Classification definitions should be used to estimate automobiles, medium trucks and heavy trucks.
[2] The number of lanes is determined by the future mature state of the roadway.

Table 2.2a: Sound Level Limit for Outdoor Living Areas - Road and Rail
(from NPC-300, 2013 Table C-1)

Time Period	Required L_{eq} (16) (dBA)
16-hour, 07:00 – 23:00	55

Table 2.2b: Sound Level Limit for Indoor Living Areas Road and Rail
(from NPC-300, 2013 Table C-2)

Type of Space	Time Period	Required L_{eq} (dBA) Road	Rail
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	07:00 – 23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	23:00 – 07:00	45	40
Sleeping quarters	07:00 – 23:00	45	40
	23:00 – 07:00	40	35

The Province also provides for supplementary indoor sound level limits for land uses not generally considered noise sensitive (see Table 2.2c below). These good practice design objectives should be addressed in any noise study prepared for the City. These supplementary sound level limits are based on the windows and doors to an indoor space being closed.

Table 2.2c: Supplementary Sound Level Limits for Indoor Spaces - Road and Rail (adapted from NPC-300 Table C-9)

Type of Space	Time Period	Required L_{eq} (dBA) Road	Rail
General offices, reception areas, retail stores, etc.	16 hours between 07:00 – 23:00	50	45
Theatres, places of worship, libraries, individual or semi- private offices, conference rooms, reading rooms, etc.	16 hours between 07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	8 hours between 23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	8 hours between 23:00 – 07:00	40	35

Roads Listed: Trim

Roads Not Listed: Aquaview, Provence, Portobello, Scala, and Street 1

Table 1- Road of Right-of-Way Protection

Road	ROW to be Protected
Arterials in the rural area (as shown on Schedules G and H of the Official Plan)	ROW to be protected is **30 metres** unless otherwise indicated
Collectors in the rural area (as shown on Schedules G and H of the Official Plan)	ROW to be protected is **26 metres** unless otherwise indicated
Local roads in the rural area	ROW to be protected is **20 metres** unless otherwise indicated

Road	From	To	ROW to be Protected	Classification	Sector
Abbott West	West Ridge	Main	24	collector	urban
Abbott East	Main	Iber	26	major collector	urban
Airport Parkway	Bronson	Airport Parkway Private	ECP	arterial	urban
Albert	Empress	Bronson	40 Note: Maximum land requirement from property abutting existing ROW (10.0 m).	arterial	urban
Albert	Bronson	Elgin	VRW Note: Maximum land requirement from property abutting existing ROW (1.25 m). Subject to widening/easement policy.	arterial	urban
Albert	Elgin	MacKenzie King Bridge	VRW Note: Maximum land requirement from property abutting existing ROW	arterial	urban

			located between Belfast and St. Laurent, more lands on either side of Tremblay, in addition to the 26 m unequal widening may be required.		
Trim	Innes	East Urban Community- south limit	37.5 Note: An additional 5.0 m on the rural side may be required to construct a rural cross-section.	arterial	urban
Trim	Hydro corridor/Frank Kenny extension	Existing Trim	37.5	arterial	urban
Trim	Ottawa Road 174	Frank Kenny extension	46	arterial	urban
Trim	South of hydro corridor/Frank Kenny extension	Innes	37.5 Note: Refer to North South Link ESR	arterial	urban
Trim	North Service	Ottawa Road 174	26	major collector	urban
Triole	North of Tremblay		20	local	urban
Triole	All sections south of Tremblay		18	local	urban
Vaan	Entire length		24	collector	urban
Valin	Charlemagne	Trim	26	major collector	urban
Varley	Beaverbrook	Beaverbrook	24	collector	urban
Vaughn	Crichton	Mackay	15	local	urban
Victoria	Glen	Glenwood	23	arterial	village
Viewmount	Meadowlands	Fisher	24	collector	urban
Virgil	Stinson	Lynhar	24	collector	urban
Viseneau	Boyer	Innes	26	collector	urban
Walkley	Riverside	Bank	26	arterial	urban
Walkley	Bank	Heron	37.5	arterial	urban
Walkley	Heron	Greenbelt boundary	44.5	arterial	urban
Walkley	Greenbelt boundary	Ramsayville	G	arterial	urban
Waller	Rideau	Lauier East	23 Note: Maximum land	arterial	urban

Mark Bowen

From: Yousfani, Asad <Asad.Yousfani@ottawa.ca>
Sent: Tuesday, May 29, 2018 3:48 PM
To: Mark Bowen
Cc: Melanie Riddell
Subject: RE: Legault Lands Noise Source Confirmation

Hi Mark,
All streets should be considered as locals (most of them have 18-20 m r.o.w) except street 1, which shows a r.o.w of 22m. Street 1 seems to be the major street on the plan and I recommend considering it as collector street (2-UCU). Some of the streets don't show the r.o.w.
Hope this answers your question.
Thanks-ASAD

From: Mark Bowen <M.Bowen@novatech-eng.com>
Sent: Tuesday, May 29, 2018 3:23 PM
To: Yousfani, Asad <Asad.Yousfani@ottawa.ca>
Cc: Melanie Riddell <m.riddell@novatech-eng.com>
Subject: RE: Legault Lands Noise Source Confirmation

Hi Asad,

Can you please confirm the road classifications for the proposed Streets 1-11, see attached.

Mark Bowen, B. Eng
Project Manager – Land Development Engineering

NOVATECH
Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 231 | Fax: 613.254.5867
The information contained in this email message is confidential and is for exclusive use of the addressee

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From: Yousfani, Asad [mailto:Asad.Yousfani@ottawa.ca]
Sent: May-25-18 12:08 PM
To: Mark Bowen <M.Bowen@novatech-eng.com>
Cc: Curry, William <William.Curry@ottawa.ca>; Melanie Riddell <m.riddell@novatech-eng.com>
Subject: RE: Legault Lands Noise Source Confirmation

Hi Mark,

My response in yellow. The rest in fine.

Thanks-ASAD

From: Mark Bowen <M.Bowen@novatech-eng.com>
Sent: Friday, May 18, 2018 1:48 PM
To: Yousfani, Asad <Asad.Yousfani@ottawa.ca>

Cc: Curry, William <William.Curry@ottawa.ca>; Melanie Riddell <m.riddell@novatech-eng.com>
Subject: Legault Lands Noise Source Confirmation

Hi Asad,

I'm preparing a noise study in support of Legault Lands' (Phases 1-6)Draft Plan application, can you please confirm my noise source assumptions are correct.

1. Airport: As per Annex 10, Lands Use Constraints Due to Aircraft Noise, the Legault Lands are located outside the airport noise limits. No action required.
2. Buses: As per Transportation Master Plan – Map 5 - Rapid Transit and Transit Priority Network 2031 Affordable Network, the Legault Lands are located less than 100m from the Transit Priority Corridor. Can you please confirm the bus schedules for Innes and Trim so they can be included in the analysis. **Contact Genya** Genya Stefanoff at 613-580-2424 x52294.
3. Roads: The attached Road Confirmation figure confirms the road and site locations. The assumed road AADTs are listed below.

- Innes – Arterial – 4 Lane Divided – 60km/hr – AADT=35,000
- Trim – Arterial - 4 Lane Divided – 60km/hr – AADT=35,000
- Brian Coburn – 2 Lane Undivided – 60km/hr – AADT=15,000 (Brian Coburn should be considered 4-lane = 35,000. All other studies in the area are doing the same.
- Esprit – 2 Lane Major Collector – 50km/hr – AADT=12,000
- Portobello – 4 Lane Major Collector – 50km/hr – AADT=24,000
- Scala/Aquaview/Nantes/Provence/Montmere – 2 Lane Collector – 50km/hr – AADT=8,000

Finally, can you review the attached CP14 figure and confirm the road classifications for proposed streets (1-11). Please call if you have questions.

Mark Bowen, B. Eng
Project Manager – Land Development Engineering

NOVATECH
Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 231 | Fax: 613.254.5867
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Appendix B
STAMSON Noise Modelling Results

STAMSON 5.0 SUMMARY REPORT Date: 11-06-2018 09:54:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola1.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -75.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Scala (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Scala (day/night)

Angle1 Angle2 : -45.00 deg 45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)

Receiver source distance : 316.00 / 316.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Portbello (day/night)

Car traffic volume : 19430/1690 veh/TimePeriod *
Medium truck volume : 1546/134 veh/TimePeriod *
Heavy truck volume : 1104/96 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 24000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Portbello (day/night)

Angle1 Angle2 : -90.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 4 / 4
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 167.00 / 167.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 4: Portbello (day/night)

Car traffic volume : 19430/1690 veh/TimePeriod *
Medium truck volume : 1546/134 veh/TimePeriod *
Heavy truck volume : 1104/96 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 24000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: Portbello (day/night)

Angle1 Angle2 : 10.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 167.00 / 167.00 m

OLA1

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	59.66	59.66
2.Scala	1.50	31.45	31.45
3.Portbello	1.50	36.52	36.52
4.Portbello	1.50	45.39	45.39
Total			59.85 dBA

♀
Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	52.07	52.07
2.Scala	1.50	23.85	23.85
3.Portbello	1.50	28.92	28.92
4.Portbello	1.50	37.79	37.79
Total			52.26 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 59.85
(NIGHT): 52.26
♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 07-06-2018 14:30:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA2.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -45.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 154.00 / 154.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Scala (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Scala (day/night)

Angle1 Angle2 : -75.00 deg 75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)

```
Receiver source distance  : 186.00 / 186.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Portbello (day/night)
---------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Portbello (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     85 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 123.00 / 123.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	37.91	37.91
2.Scala	1.50	36.22	36.22
3.Portbello	1.50	46.01	46.01
Total			47.01 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	30.31	30.31
2.Scala	1.50	28.63	28.63
3.Portbello	1.50	38.41	38.41
Total			39.41 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 47.01
(NIGHT): 39.41

STAMSON 5.0 SUMMARY REPORT Date: 11-06-2018 10:06:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola3.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -55.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 23.00 / 23.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Aquaview (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Aquaview (day/night)

Angle1 Angle2 : 60.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 23.00 / 23.00 m

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Scala (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Scala (day/night)

Angle1 Angle2 : -45.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 337.00 / 337.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 4: Portobello (day/night)

Car traffic volume : 19430/1690 veh/TimePeriod *
Medium truck volume : 1546/134 veh/TimePeriod *
Heavy truck volume : 1104/96 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 24000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: Portobello (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.00 / 28.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)

Reference angle : 0.00

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	60.21	60.21
2.Aquaview	1.50	40.67	40.67
3.Scala	1.50	29.76	29.76
4.Portobello	1.50	64.57	64.57
Total			65.94 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	52.61	52.61
2.Aquaview	1.50	33.08	33.08
3.Scala	1.50	22.16	22.16
4.Portobello	1.50	56.97	56.97
Total			58.34 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 65.94
(NIGHT): 58.34

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 08-06-2018 10:45:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA4.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

Angle1 Angle2 : -20.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 21.00 / 21.00 m
Receiver height : 1.50 / 1.50 m

Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀

Road data, segment # 3: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Street1 (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 21.00 / 21.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	62.98	62.98
2.Street1	1.50	53.72	53.72
3.Street1	1.50	48.76	48.76
Total			63.61 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	55.39	55.39
2.Street1	1.50	46.13	46.13
3.Street1	1.50	41.16	41.16
Total			56.02 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 63.61
(NIGHT): 56.02

STAMSON 5.0 SUMMARY REPORT Date: 08-06-2018 11:42:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA5.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume	6477/563	veh/TimePeriod *
Medium truck volume	515/45	veh/TimePeriod *
Heavy truck volume	368/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	1 %	
Road pavement	1 (Typical asphalt or concrete)	

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

24 hr Traffic Volume (AADT or SADT)	8000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

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

Angle1 Angle2	-90.00 deg	-45.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	19.00 / 19.00	m
Receiver height	1.50 / 1.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

♀
Road data, segment # 2: Provence (day/night)

Car traffic volume	6477/563	veh/TimePeriod *
Medium truck volume	515/45	veh/TimePeriod *
Heavy truck volume	368/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	1 %	
Road pavement	1 (Typical asphalt or concrete)	

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

24 hr Traffic Volume (AADT or SADT)	8000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

Data for Segment # 2: Provence (day/night)

Angle1 Angle2	-45.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	19.00 / 19.00	m

OLA5

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	44.90	44.90
2.Provence	1.50	61.76	61.76
Total			61.85 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	37.30	37.30
2.Provence	1.50	54.17	54.17
Total			54.26 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.85
(NIGHT): 54.26

STAMSON 5.0 SUMMARY REPORT Date: 08-06-2018 13:51:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA6.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Street1 (day/night)

Angle1 Angle2 : -90.00 deg -60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

Angle1 Angle2 : -60.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Street1 (day/night)

Angle1 Angle2 : 60.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	42.44	42.44
2.Street1	1.50	62.11	62.11
3.Street1	1.50	42.44	42.44
Total			62.20 dBA

♀
Result summary (night)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	34.85	34.85
2.Street1	1.50	54.52	54.52
3.Street1	1.50	34.85	34.85
Total			54.61 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.20
(NIGHT): 54.61

STAMSON 5.0 SUMMARY REPORT Date: 11-06-2018 13:52:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola7.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg -20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)

Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Trim (day/night)

Angle1 Angle2 : -20.00 deg 75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 4: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: Trim (day/night)

Angle1 Angle2 : 75.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m

OLA7

Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	42.00	42.00
2.Trim	1.50	43.46	43.46
3.Trim	1.50	58.20	58.20
4.Trim	1.50	32.70	32.70
Total			58.45 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	34.41	34.41
2.Trim	1.50	35.87	35.87
3.Trim	1.50	50.60	50.60
4.Trim	1.50	25.11	25.11
Total			50.86 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 58.45
(NIGHT): 50.86

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 08-06-2018 15:27:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA8.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Street1 (day/night)

Angle1 Angle2 : -25.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 128.00 / 128.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -90.00 deg -75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 64.00 / 64.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

♀
Road data, segment # 3: Trim (day/night)
----------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Trim (day/night)
--------------------------------------
Angle1   Angle2           : -75.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  64.00 / 64.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

♀
Road data, segment # 4: Trim (day/night)
----------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Trim (day/night)
--------------------------------------
Angle1   Angle2           :  70.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  64.00 / 64.00  m
Receiver height           :   1.50 / 1.50   m
```

OLA8

Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	35.68	35.68
2.Trim	1.50	46.37	46.37
3.Trim	1.50	52.07	52.07
4.Trim	1.50	36.08	36.08
Total			53.27 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	28.09	28.09
2.Trim	1.50	38.77	38.77
3.Trim	1.50	44.48	44.48
4.Trim	1.50	28.49	28.49
Total			45.67 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 53.27
(NIGHT): 45.67

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 11-06-2018 14:21:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola9.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Trim (day/night)

Angle1 Angle2 : 55.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 4: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: Street1 (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 1.50 / 1.50 m

OLA9

Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	48.18	48.18
2.Trim	1.50	64.22	64.22
3.Trim	1.50	46.42	46.42
4.Street1	1.50	45.57	45.57
Total			64.45 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	40.59	40.59
2.Trim	1.50	56.62	56.62
3.Trim	1.50	39.63	39.63
4.Street1	1.50	37.98	37.98
Total			56.87 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 64.45
(NIGHT): 56.87

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 11-06-2018 09:24:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola10.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Street1 (day/night)

Angle1 Angle2 : -20.00 deg 45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 116.00 / 116.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -90.00 deg -30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)

Receiver source distance : 148.00 / 148.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 3: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Trim (day/night)

Angle1 Angle2 : -30.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 148.00 / 148.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 4: Trim (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: Trim (day/night)

Angle1 Angle2 : 60.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 148.00 / 148.00 m

OLA10

Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	34.70	34.70
2.Trim	1.50	38.68	38.68
3.Trim	1.50	45.33	45.33
4.Trim	1.50	35.36	35.36
Total			46.80 dBA

♀
Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	27.11	27.11
2.Trim	1.50	31.08	31.08
3.Trim	1.50	37.74	37.74
4.Trim	1.50	27.77	27.77
Total			39.21 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 46.80
(NIGHT): 39.21
♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 13:33:12
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola1.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -75.00 deg -50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Aquaview (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Aquaview (day/night)

Angle1 Angle2 : -50.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.90 m
Receiver elevation        :  89.50 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Scala (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Scala (day/night)
---------------------------------------
Angle1   Angle2           : -45.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 316.00 / 316.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Road data, segment # 4: Portobello (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Portobello (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   30.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 167.00 / 167.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Road data, segment # 5: Portobello (day/night)

```
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

```
    24 hr Traffic Volume (AADT or SADT):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 5: Portobello (day/night)

```
Angle1   Angle2           :  30.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 167.00 / 167.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  30.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.73 m
Receiver elevation        :  89.50 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
```

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	43.10	43.10
2.Aquaview	1.50	54.58	54.58
3.Scala	1.50	31.45	31.45
4.Portobello	1.50	37.51	37.51
5.Portobello	1.50	41.30	41.30
Total			55.16 dBA

♀

Result summary (night)

OLA1

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	35.51	35.51
2.Aquaview	1.50	46.98	46.98
3.Scala	1.50	23.85	23.85
4.Portobello	1.50	29.91	29.91
5.Portobello	1.50	33.70	33.70
Total			47.56 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 55.16
(NIGHT): 47.56

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 13:47:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola3.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -55.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 23.00 / 23.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -55.00 deg Angle2 : 55.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 89.84 m
Receiver elevation : 90.35 m
Barrier elevation : 90.25 m
Reference angle : 0.00

♀
Road data, segment # 2: Aquaview (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Aquaview (day/night)

```
Angle1   Angle2           :  55.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  23.00 / 23.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Road data, segment # 3: Scala (day/night)

```
Car traffic volume  :  6447/563   veh/TimePeriod
Medium truck volume :   515/45    veh/TimePeriod
Heavy truck volume  :   368/32    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

Data for Segment # 3: Scala (day/night)

```
Angle1   Angle2           : -45.00 deg   50.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 337.00 / 337.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Road data, segment # 4: Portobello (day/night)

```
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

```
    24 hr Traffic Volume (AADT or SADT):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 4: Portobello (day/night)

```
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  28.00 / 28.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
```

Source elevation : 89.75 m
Receiver elevation : 90.35 m
Barrier elevation : 90.30 m
Reference angle : 0.00

♀
Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	51.83	51.83
2.Aquaview	1.50	41.76	41.76
3.Scala	1.50	29.75	29.75
4.Portobello	1.50	57.22	57.22
Total			58.42 dBA

♀
Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	44.23	44.23
2.Aquaview	1.50	34.17	34.17
3.Scala	1.50	22.16	22.16
4.Portobello	1.50	49.62	49.62
Total			50.82 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 58.42
(NIGHT): 50.82
♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 13:58:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola4.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 89.36 m
Receiver elevation : 90.45 m
Barrier elevation : 90.30 m
Reference angle : 0.00

♀
Road data, segment # 2: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

```
Angle1   Angle2           : -20.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -20.00 deg   Angle2 : 0.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.70 m
Receiver elevation        :  90.45 m
Barrier elevation         :  90.30 m
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Provence         !     1.50 !    54.68 !    54.68
 2.Street1          !     1.50 !    44.26 !    44.26
 3.Street1          !     1.50 !    48.76 !    48.76
--------------------+----------+----------+----------
                      Total                  55.97 dBA
```

♀

```
Result summary (night)
----------------------
```

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	47.09	47.09
2.Street1	1.50	36.67	36.67
3.Street1	1.50	41.16	41.16
Total			48.38 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 55.97
(NIGHT): 48.38

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STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 15:09:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola5.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Provence (day/night)

Angle1 Angle2 : -45.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m

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Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  88.20 m
Receiver elevation        :  89.70 m
Barrier elevation         :  89.50 m
Reference angle           :   0.00
```

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Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	44.90	44.90
2.Provence	1.50	52.81	52.81
Total			53.46 dBA

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Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	37.30	37.30
2.Provence	1.50	45.22	45.22
Total			45.87 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 53.46
(NIGHT): 45.87

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STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 15:58:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola6.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Street1 (day/night)

Angle1 Angle2 : -90.00 deg -60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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Road data, segment # 2: Street1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

Angle1 Angle2 : -60.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : 60.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.05 m
Receiver elevation        :  89.45 m
Barrier elevation         :  89.30 m
Reference angle           :   0.00
```

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```
Road data, segment # 3: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :  60.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  18.00 / 18.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

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```
Result summary (day)
--------------------
```

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Street1	1.50	42.44	42.44
2.Street1	1.50	53.47	53.47
3.Street1	1.50	42.44	42.44
Total			54.11 dBA

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```
Result summary (night)
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	source height (m)	Road Leq (dBA)	Total Leq (dBA)

			OLA6	
1.Street1	!	1.50 !	34.85 !	34.85
2.Street1	!	1.50 !	45.88 !	45.88
3.Street1	!	1.50 !	34.85 !	34.85
Total				46.52 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 54.11
(NIGHT): 46.52

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STAMSON 5.0 SUMMARY REPORT Date: 12-06-2018 10:36:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola7.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg -20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)

```
Receiver source distance  :  79.00 / 79.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

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Road data, segment # 3: Trim (day/night)
---------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Trim (day/night)
---------------------------------------
Angle1   Angle2           : -20.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  79.00 / 79.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -20.00 deg   Angle2 : 75.00 deg
Barrier height            :   2.20 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.00 m
Receiver elevation        :  89.40 m
Barrier elevation         :  89.25 m
Reference angle           :   0.00

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Road data, segment # 4: Trim (day/night)
---------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Trim (day/night)
---------------------------------------
Angle1   Angle2           :  75.00 deg   90.00 deg
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Wood depth	: 0	(No woods.)
No of house rows	: 3 / 3	
House density	: 95 %	
Surface	: 1	(Absorptive ground surface)
Receiver source distance	: 79.00 / 79.00	m
Receiver height	: 1.50 / 1.50	m
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	42.00	42.00
2.Trim	1.50	43.46	43.46
3.Trim	1.50	52.98	52.98
4.Trim	1.50	32.70	32.70
Total			53.77 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	34.41	34.41
2.Trim	1.50	35.87	35.87
3.Trim	1.50	45.38	45.38
4.Trim	1.50	25.11	25.11
Total			46.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.77
(NIGHT): 46.18

STAMSON 5.0 SUMMARY REPORT Date: 13-06-2018 16:12:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola9.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 55.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  89.50 m
Receiver elevation        :  89.70 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
```

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```
Road data, segment # 3: Trim (day/night)
----------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Trim (day/night)
--------------------------------------
Angle1   Angle2           :  55.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  37.00 / 37.00  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

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```
Road data, segment # 4: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
```

Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	48.18	48.18
2.Trim	1.50	58.13	58.13
3.Trim	1.50	46.42	46.42
4.Street1	1.50	45.57	45.57
Total			59.01 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	40.59	40.59
2.Trim	1.50	50.53	50.53
3.Trim	1.50	39.63	39.63
4.Street1	1.50	37.98	37.98
Total			51.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.01
(NIGHT): 51.46

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 12:51:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola1.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -75.00 deg -50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Aquaview (day/night)

Angle1 Angle2 : -50.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.90 m
Receiver elevation        :  89.50 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
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Road data, segment # 3: Scala (day/night)
-----------------------------------------
Car traffic volume  :  3239/282   veh/TimePeriod  *
Medium truck volume :   258/22    veh/TimePeriod  *
Heavy truck volume  :   184/16    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   4001
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Scala (day/night)
---------------------------------------
Angle1   Angle2           : -45.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 316.00 / 316.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
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Road data, segment # 4: Portobello (day/night)
----------------------------------------------
Car traffic volume  :  5667/493   veh/TimePeriod  *
Medium truck volume :   451/39    veh/TimePeriod  *
Heavy truck volume  :   322/28    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   7000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Portobello (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   30.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 167.00 / 167.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

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Road data, segment # 5: Portobello (day/night)

```
Car traffic volume  :  5667/493   veh/TimePeriod  *
Medium truck volume :   451/39    veh/TimePeriod  *
Heavy truck volume  :   322/28    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

```
    24 hr Traffic Volume (AADT or SADT):   7000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 5: Portobello (day/night)

```
Angle1   Angle2           :  30.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 167.00 / 167.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  30.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.73 m
Receiver elevation        :  89.50 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
```

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Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	40.10	40.10
2.Aquaview	1.50	51.57	51.57
3.Scala	1.50	28.44	28.44
4.Portobello	1.50	32.16	32.16
5.Portobello	1.50	35.95	35.95
Total			52.04 dBA

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Result summary (night)

OLA1

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	32.48	32.48
2.Aquaview	1.50	43.95	43.95
3.Scala	1.50	20.83	20.83
4.Portobello	1.50	24.56	24.56
5.Portobello	1.50	28.35	28.35
Total			44.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.04
(NIGHT): 44.42

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 12:58:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola3.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -55.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 23.00 / 23.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -55.00 deg Angle2 : 55.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 89.84 m
Receiver elevation : 90.35 m
Barrier elevation : 90.25 m
Reference angle : 0.00

♀
Road data, segment # 2: Aquaview (day/night)

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Aquaview (day/night)

```
Angle1   Angle2           :  55.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  23.00 / 23.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Road data, segment # 3: Scala (day/night)

```
Car traffic volume  :  3239/282   veh/TimePeriod  *
Medium truck volume :   258/22    veh/TimePeriod  *
Heavy truck volume  :   184/16    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

```
    24 hr Traffic Volume (AADT or SADT):   4001
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 3: Scala (day/night)

```
Angle1   Angle2           : -45.00 deg   50.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 337.00 / 337.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

Road data, segment # 4: Portobello (day/night)

```
Car traffic volume  :  5667/493   veh/TimePeriod  *
Medium truck volume :   451/39    veh/TimePeriod  *
Heavy truck volume  :   322/28    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

```
    24 hr Traffic Volume (AADT or SADT):   7000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 4: Portobello (day/night)

```
Angle1   Angle2           : -90.00 deg   90.00 deg
```

OLA3

Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.00 / 28.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 89.75 m
Receiver elevation : 90.35 m
Barrier elevation : 90.30 m
Reference angle : 0.00

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	48.82	48.82
2.Aquaview	1.50	38.75	38.75
3.Scala	1.50	26.75	26.75
4.Portobello	1.50	51.87	51.87
Total			53.77 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Aquaview	1.50	41.21	41.21
2.Aquaview	1.50	31.14	31.14
3.Scala	1.50	19.14	19.14
4.Portobello	1.50	44.27	44.27
Total			46.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.77
(NIGHT): 46.16

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 13:05:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola4.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 89.36 m
Receiver elevation : 90.45 m
Barrier elevation : 90.30 m
Reference angle : 0.00

♀
Road data, segment # 2: Street1 (day/night)

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

```
Angle1   Angle2           : -20.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -20.00 deg   Angle2 : 0.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.70 m
Receiver elevation        :  90.45 m
Barrier elevation         :  90.30 m
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  3239/282   veh/TimePeriod  *
Medium truck volume :   258/22    veh/TimePeriod  *
Heavy truck volume  :   184/16    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   4001
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Provence         !     1.50 !    51.68 !    51.68
 2.Street1          !     1.50 !    41.25 !    41.25
 3.Street1          !     1.50 !    45.75 !    45.75
--------------------+----------+----------+----------
                      Total                  52.97 dBA
```

♀

```
Result summary (night)
----------------------
```

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	44.06	44.06
2.Street1	1.50	33.64	33.64
3.Street1	1.50	38.14	38.14
Total			45.35 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 52.97
(NIGHT): 45.35

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 13:13:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola5.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Provence (day/night)

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Provence (day/night)

Angle1 Angle2 : -45.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m

OLA5

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  88.20 m
Receiver elevation        :  89.70 m
Barrier elevation         :  89.50 m
Reference angle           :   0.00
```

♀

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	41.89	41.89
2.Provence	1.50	49.80	49.80
Total			50.45 dBA

♀

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Provence	1.50	34.28	34.28
2.Provence	1.50	42.19	42.19
Total			42.84 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 50.45
(NIGHT): 42.84

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 13:30:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola6.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Street1 (day/night)

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Street1 (day/night)

Angle1 Angle2 : -90.00 deg -60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Street1 (day/night)

Car traffic volume : 3239/282 veh/TimePeriod *
Medium truck volume : 258/22 veh/TimePeriod *
Heavy truck volume : 184/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4001
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Street1 (day/night)

Angle1 Angle2 : -60.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : 60.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.05 m
Receiver elevation        :  89.45 m
Barrier elevation         :  89.30 m
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  3239/282   veh/TimePeriod  *
Medium truck volume :   258/22    veh/TimePeriod  *
Heavy truck volume  :   184/16    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   4001
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :  60.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  18.00 / 18.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Street1          !     1.50 !    39.43 !    39.43
 2.Street1          !     1.50 !    50.46 !    50.46
 3.Street1          !     1.50 !    39.43 !    39.43
--------------------+----------+----------+----------
                      Total                   51.10 dBA
```

♀

```
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
```

			OLA6	
1.Street1	!	1.50 !	31.82 !	31.82
2.Street1	!	1.50 !	42.85 !	42.85
3.Street1	!	1.50 !	31.82 !	31.82
Total				43.49 dBA

♀

TOTAL Leq FROM ALL SOURCES (DAY): 51.10
(NIGHT): 43.49

♀
♀

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 14:05:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola7.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 7691/669 veh/TimePeriod *
Medium truck volume : 612/53 veh/TimePeriod *
Heavy truck volume : 437/38 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 / 79.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 7691/669 veh/TimePeriod *
Medium truck volume : 612/53 veh/TimePeriod *
Heavy truck volume : 437/38 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg -20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)

```
Receiver source distance  :  79.00 / 79.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

♀
Road data, segment # 3: Trim (day/night)
----------------------------------------
Car traffic volume  :  7691/669   veh/TimePeriod  *
Medium truck volume :   612/53    veh/TimePeriod  *
Heavy truck volume  :   437/38    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   9500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Trim (day/night)
--------------------------------------
Angle1   Angle2           : -20.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  79.00 / 79.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -20.00 deg   Angle2 : 75.00 deg
Barrier height            :   2.20 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  89.00 m
Receiver elevation        :  89.40 m
Barrier elevation         :  89.25 m
Reference angle           :   0.00

♀
Road data, segment # 4: Trim (day/night)
----------------------------------------
Car traffic volume  :  7691/669   veh/TimePeriod  *
Medium truck volume :   612/53    veh/TimePeriod  *
Heavy truck volume  :   437/38    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   9500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Trim (day/night)
--------------------------------------
Angle1   Angle2           :  75.00 deg   90.00 deg
```

OLA7

Wood depth	: 0	(No woods.)
No of house rows	: 3 / 3	
House density	: 95 %	
Surface	: 1	(Absorptive ground surface)
Receiver source distance	: 79.00 / 79.00	m
Receiver height	: 1.50 / 1.50	m
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	36.34	36.34
2.Trim	1.50	37.80	37.80
3.Trim	1.50	47.32	47.32
4.Trim	1.50	27.04	27.04
Total			48.11 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	28.74	28.74
2.Trim	1.50	30.20	30.20
3.Trim	1.50	39.72	39.72
4.Trim	1.50	19.44	19.44
Total			40.51 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.11
(NIGHT): 40.51

STAMSON 5.0 SUMMARY REPORT Date: 06-07-2018 13:35:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola9.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 7691/669 veh/TimePeriod *
Medium truck volume : 612/53 veh/TimePeriod *
Heavy truck volume : 437/38 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

♀
Road data, segment # 2: Trim (day/night)

Car traffic volume : 7691/669 veh/TimePeriod *
Medium truck volume : 612/53 veh/TimePeriod *
Heavy truck volume : 437/38 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Trim (day/night)

Angle1 Angle2 : -45.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 55.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  89.50 m
Receiver elevation        :  89.70 m
Barrier elevation         :  89.45 m
Reference angle           :   0.00
```

♀

```
Road data, segment # 3: Trim (day/night)
----------------------------------------
Car traffic volume  :  7691/669   veh/TimePeriod  *
Medium truck volume :   612/53    veh/TimePeriod  *
Heavy truck volume  :   437/38    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   9500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Trim (day/night)
--------------------------------------
Angle1   Angle2           :  55.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  37.00 / 37.00  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

♀

```
Road data, segment # 4: Street1 (day/night)
-------------------------------------------
Car traffic volume  :  3239/282   veh/TimePeriod  *
Medium truck volume :   258/22    veh/TimePeriod  *
Heavy truck volume  :   184/16    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   4001
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Street1 (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  33.00 / 33.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	42.52	42.52
2.Trim	1.50	52.47	52.47
3.Trim	1.50	40.76	40.76
4.Street1	1.50	42.56	42.56
Total			53.51 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Trim	1.50	34.92	34.92
2.Trim	1.50	44.87	44.87
3.Trim	1.50	33.96	33.96
4.Street1	1.50	34.95	34.95
Total			45.96 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.51
(NIGHT): 45.96

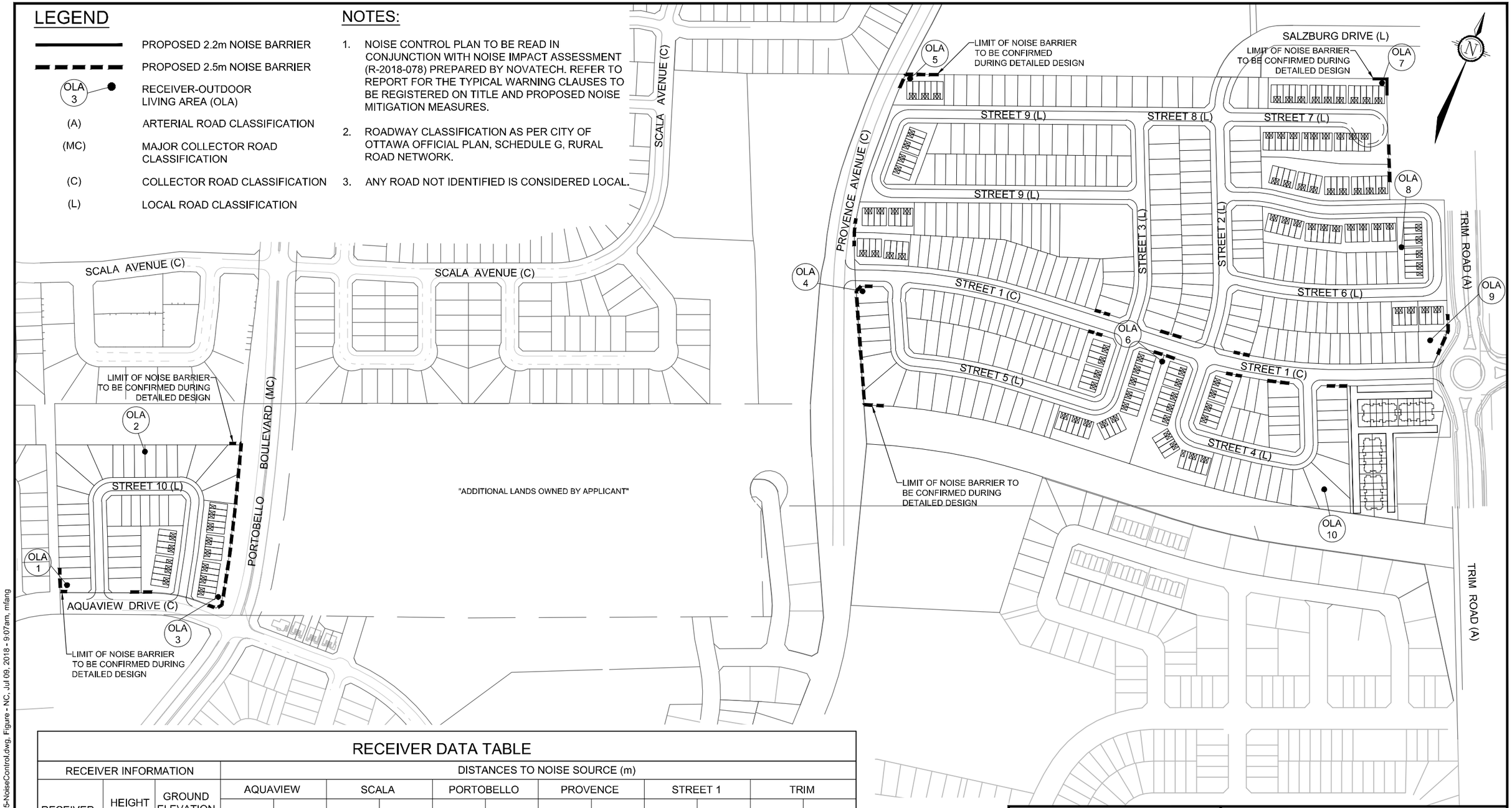
Appendix C
Noise Control Plan

LEGEND

- PROPOSED 2.2m NOISE BARRIER
- PROPOSED 2.5m NOISE BARRIER
- OLA 3 — RECEIVER-OUTDOOR LIVING AREA (OLA)
- (A) ARTERIAL ROAD CLASSIFICATION
- (MC) MAJOR COLLECTOR ROAD CLASSIFICATION
- (C) COLLECTOR ROAD CLASSIFICATION
- (L) LOCAL ROAD CLASSIFICATION

NOTES:

1. NOISE CONTROL PLAN TO BE READ IN CONJUNCTION WITH NOISE IMPACT ASSESSMENT (R-2018-078) PREPARED BY NOVATECH. REFER TO REPORT FOR THE TYPICAL WARNING CLAUSES TO BE REGISTERED ON TITLE AND PROPOSED NOISE MITIGATION MEASURES.
2. ROADWAY CLASSIFICATION AS PER CITY OF OTTAWA OFFICIAL PLAN, SCHEDULE G, RURAL ROAD NETWORK.
3. ANY ROAD NOT IDENTIFIED IS CONSIDERED LOCAL.



RECEIVER DATA TABLE

RECEIVER INFORMATION			DISTANCES TO NOISE SOURCE (m)											
			AQUAVIEW		SCALA		PORTOBELLO		PROVENCE		STREET 1		TRIM	
RECEIVER	HEIGHT (m)	GROUND ELEVATION (m)	ELEV. (m)	DIST. (m)	ELEV. (m)	DIST. (m)	ELEV. (m)	DIST. (m)	ELEV. (m)	DIST. (m)	ELEV. (m)	DIST. (m)	ELEV. (m)	DIST. (m)
OLA 1	1.5	90.25	89.95	19	89.51	316	89.75	167	-	-	-	-	-	-
OLA 2	1.5	90.50	89.90	154	89.55	186	89.95	123	-	-	-	-	-	-
OLA 3	1.5	90.50	89.94	23	89.60	337	89.75	28	-	-	-	-	-	-
OLA 4	1.5	90.25	-	-	-	-	-	-	89.36	18	89.50	21	-	
OLA 5	1.5	90.75	-	-	-	-	-	-	88.20	19	-	-	-	-
OLA 6	1.5	89.50	-	-	-	-	-	-	-	-	89.05	18	-	-
OLA 7	1.5	89.25	-	-	-	-	-	-	-	-	-	-	89.50	79
OLA 8	1.5	89.25	-	-	-	-	-	-	-	-	89.25	128	89.50	64
OLA 9	1.5	89.50	-	-	-	-	-	-	-	-	89.25	33	89.50	37
OLA 10	1.5	89.50	-	-	-	-	-	-	-	-	89.10	116	90.00	148

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CITY OF OTTAWA
NOTTING HILL SUBDIVISION

NOISE CONTROL PLAN

SCALE 1 : 3750 (0, 30, 60, 90, 120, 150)
DATE JUN 2018 | JOB 117155 | FIGURE 117155 - NC

SHT11X17.DWG - 279mmX432mm

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