

Appendix M

Noise Assessment

MEMO

RE: City of Mississauga
Mavis Road Class Environmental Assessment Study
From Courtneypark Drive West to Ray Lawson Boulevard

FROM: Rhonda George-Hiebert, M.Eng., P.Eng.

DATE: March 27, 2017

COPIES: Katherine Jim, P.Eng., MMM Group Limited

OUR FILE: W.O. 3215102

SUBJECT: Mavis Road Class EA Study
Noise Assessment

1. Introduction

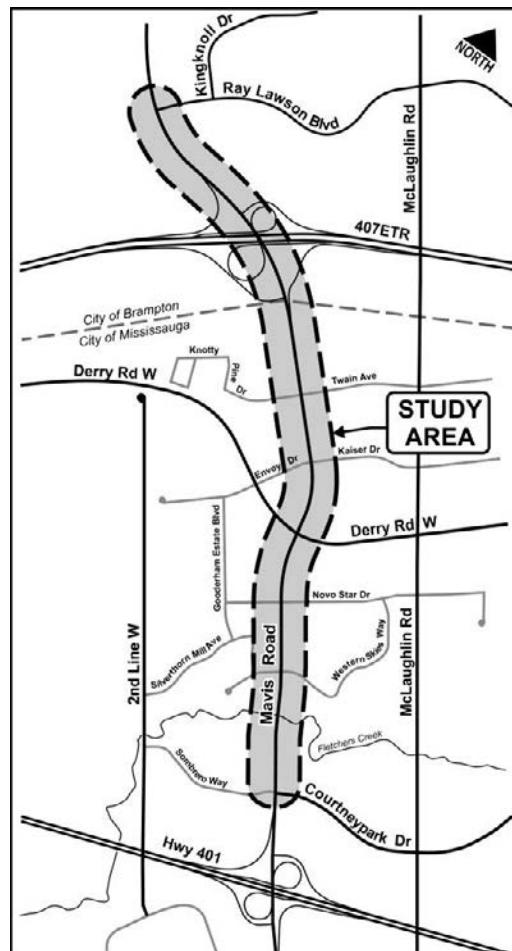
The City of Mississauga, in partnership with the Region of Peel, is undertaking a Class Environmental Assessment (Class EA) Study of Mavis Road from Courtneypark Drive West to Ray Lawson Boulevard to address existing and future ‘multi-modal’ transportation conditions. See Figure 1 for the project study area key plan.

Within the City of Mississauga, Mavis Road consists of four travel lanes, raised median, sidewalks on both sides and some sections with multi-use trails. Within the Region of Peel, Mavis Road has recently been widened to six lanes from Steeles Avenue to just north of Highway 407, with a multi-use path on the west side and sidewalk on the east side.

As part of the Class EA Study, a noise assessment was conducted to assess the potential increase in noise level to noise sensitive areas as a result of the proposed improvements to Mavis Road between Courtneypark Drive West to the Ray Lawson Boulevard. Within the study area, the lands on either side of Mavis Road are primarily residential with a mix of multi-unit townhomes, semi-detached homes and single family homes; some of these homes have existing noise wall/developer barriers in place. The noise assessment was undertaken based on a selection of 26 representative private residential homes within the study area, some with existing noise barriers in place. These residential homes located adjacent to Mavis Road were selected to represent the potential noise impact to noise sensitive areas in proximity to Mavis Road.

This memorandum summarizes the findings of the noise assessment.

Figure 1 – Project Study Area Key Plan



2. Methodology

Noise levels are predicted in decibels in the A-weighted dBA scale, which best approximates the human perception of sound over a specified time period. An increase of 2 to 3 decibels in noise levels is considered to be just perceivable to the average person. It should be noted that a 3 dBA increase in noise equates to a doubling of traffic volumes.

Provincial Noise Guidelines

Since roadway sound levels vary over time, the noise descriptor used in Ontario to assess noise is the “equivalent sound level” - L_{eq} . L_{eq} is identified as the continuous sound level, which has the same energy as a time varying sound level over a specified time period. For the purposes of assessing municipal roadway noise, L_{eq} is calculated on the basis of the 16 hour daytime period,

7:00 a.m. to 11:00 p.m. For new residential development adjacent to existing roads, the provincial objective is 55 dBA in the outdoor living area (OLA) for the daytime period.

Based on the Ontario Ministry of Transportation (MTO)/Ministry of the Environment and Climate Change (MOECC) Noise Protocol, where an existing roadway is proposed to be modified / widened adjacent to a Noise Sensitive Area (NSA), MOECC requires that the future noise levels without the proposed improvements be compared to the future noise level with the proposed improvements. The assessment is done at the outdoor living area (typically backyards) of each NSA. The provision of noise mitigation is to be investigated should the future noise level with the proposed improvements result in a greater than 5 dBA increase over the future noise level without the proposed improvements. If noise mitigation is provided, the objective is a minimum 5 dBA reduction. Mitigation will attempt to achieve levels as close to, or lower than, the objective level as is technically, economically and administratively feasible.

City of Mississauga Guidelines

In addition to the MTO/MOECC noise protocol, City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011). was also applied to the noise assessment since Mavis Road is under the jurisdiction of the City of Mississauga. A copy of the City of Mississauga Noise Policy can be found in Appendix A. The City of Mississauga Noise Policy identifies responsibilities for construction of noise attenuation barriers and is divided into four categories:

1. Noise attenuation barriers in existence at the time of approval of this policy that are to be replaced, as part of a replacement program;
2. Noise attenuation barriers to be constructed after approval of this policy, as part of new development;
3. New noise barriers to be constructed after approval of this policy, where none currently exist, as part of a retrofit program; and
4. Noise attenuation barriers to be constructed after approval of this policy of a capital works project.

For the purpose of the noise analysis carried out for this Class EA Study, guidelines under the Capital Works Project Category (#4) were applied in determining noise level predictions and modelling. This section of the policy states *“Noise barriers may be constructed by the City in conjunction with a road widening project if no noise attenuation barriers exist, and the proposed additional lanes of traffic are found to adversely affect the daytime noise level beyond the established criteria (refer to the “Installation Criteria” section of this policy for the applicable criteria.) (See installation criteria below) If the Installation Criteria are satisfied, the City may elect to pre-install a noise attenuation barrier up to three years prior to the scheduled road widening.”*

Furthermore, the installation criteria in the above noted policy is as follows; *“Installation of new noise attenuation barriers is subject to the following:*

- *The noise level must be greater than 60 dBA (Leq daytime). (Leq means “equivalent sound level” and daytime means 7:00 am to 11 pm. Leq daytime means daytime average.)*
- *The residential area must be adjacent to arterial and major collector roads, as designated by the Official Plan. Retrofit or replacements will not be considered adjacent to freeways or railway tracks, as they are not under the jurisdiction of the City.*
- *Barriers must be installed on a complete block to ensure their effectiveness.”*

The STAMSON 5.0 computer modelling program, which is approved for use in Ontario by the MOECC, was used to assess existing and future noise levels on Mavis Road. This program is used to predict noise levels generated from the road at the outdoor living areas (typically backyards) of NSA’s.

3. Analysis

Two scenarios were calculated:

- i) future noise levels without improvements to Mavis Road (Year 2041)*
- ii) future noise levels with improvements to Mavis Road (Year 2041)

The following table summarizes the main assumptions and factors used in the analysis.

* It should be noted that existing (2015) traffic volumes on Mavis Road were used to represent the future without widening of Mavis Road scenario as Mavis Road is currently operating at or near capacity.

Table 3-1 - Factors Used In Noise Analysis

Factor	Assumptions
Noise Descriptor	L _{eq} (16 hr)
Posted Speed	- Mavis Road from Ray Lawson Boulevard to 407 ETR - o 70 km/hr Future No Build - o 70 km/h Future Build - Mavis Road from 407 ETR to Courtneypark Drive West - o 70 km/hr Future No Build - o 60 km/h Future Build
Traffic Volumes AADT	Mavis Road from Ray Lawson Boulevard to Derry Road West: - Existing (2015) / Future without improvements - o Northbound – 20,234 - o Southbound – 20,076

Factor	Assumptions
	- Future with improvements (2041) - o Northbound – 26,960 - o Southbound – 26,740 Mavis Road from Derry Road West to Courtneypark Drive West: - Existing (2015) / Future without improvements - o Northbound – 23,138 - o Southbound – 20,076 - Future with improvements (2041) - o Northbound – 30,143 - o Southbound – 36,420
Truck Percentages (Medium / Heavy)	Mavis Road from Ray Lawson Boulevard to Derry Road West: - Medium Trucks – 1.5 % - Heavy Trucks– 1.5 % Mavis Road from Derry Road West to Courtneypark Drive West: - Medium Trucks – 2.1 % - Heavy Trucks– 2.1 %
Receptor Height	1.5 m above the ground
Noise Barrier	Existing developer barriers were taken into consideration in noise calculations. Existing barriers were assumed to be 2.0 m in height as a worst case scenario (i.e. minimum height wall) for locations where no wall heights were available.

4. Noise Sensitive Areas

There are existing residential houses abutting both sides of Mavis Road within the study area. Several were selected to be included in the noise calculations as representatives to these residential houses on both sides of Mavis Road. The selected receiver locations are summarized in Table 4-1 and shown on Exhibits 1a to 1e.

Table 4-1 – Receiver Locations

Receiver #	Location	Characteristic of Property in Relation to Mavis Road	Type of Residential Unit	Existing Noise Wall/Developer Barrier?
1	7471 Magistrate Terrace	Side lot	Multi-Unit Townhomes	Yes
2	7356 Zinnia Place	Side lot	Detached Homes	Yes
3	7512 Magistrate Terrace	Frontage*	Semi-detached Homes	No
4	7271 Dime Cres	Side lot	Detached Homes	Yes

Receiver #	Location	Characteristic of Property in Relation to Mavis Road	Type of Residential Unit	Existing Noise Wall/Developer Barrier?
5	745 Salinger Court	Side lot	Detached Homes	Yes
6	7250 Dime Crescent	Frontage*	Detached Homes	No
7	7233 Dime Crescent	Side lot	Detached Homes	Yes
8	741 Macbeth Heights	Side lot	Detached Homes	Yes
9	Avocado Crescent	Frontage*	Semi-detached Homes	No
10	701 Macbeth Heights	Frontage*	Semi-detached Homes	No
11	780 Avocado Crescent	Side lot	Detached Homes	Yes
12	694 Macbeth Heights	Side lot	Detached Homes	Yes
13	7080 Magistrate Terrace	Frontage*	Semi-detached Homes	No
14	770 Othello Court	Frontage*	Multi-Unit Townhomes	No
15	7155 Magistrate Terrace – Unit 38	Side lot	Semi-detached Homes	Yes
16	6992 Haines Artist Way	Frontage*	Semi-detached Homes	No
17	6905 Tassel Crescent	Frontage*	Semi-detached Homes	No
18	6896 Tassel Crescent	Side lot	Semi-detached Homes	Yes
19	845 Golden Farmer Way	Side lot	Semi-detached Homes	Yes
20	6577 Song Bird Crescent	Frontage*	Semi-detached Homes	No
21	789 Golden Farmer Way	Side lot	Detached Homes	Yes
22	6321 Western Skies Way	Side lot	Detached Homes	Yes
23	761 Brass Winds Place	Side lot	Detached Homes	Yes
24	760 Sombrero Way	Side lot	Detached Homes	Yes
25	84 Rollingwood Dr	Side lot	Multi-Unit Townhomes	Yes
26	Cedar Lake Crescent	Frontage*	Detached Homes	No

*Frontage on parallel roadway to Mavis Road

5. Results

Noise levels were calculated at the selected receiver locations for the future with and without improvements scenarios. Table 5-1 and Exhibits 1a to 1e summarize the predicted daytime noise levels at Receivers 1 to 26, as well as the potential changes in future noise levels.

STAMSON output sheets for existing and future noise levels for Receivers 1 to 26 for the alternatives can be found in Appendix B.

Table 5-1: Mavis Road Class EA – Summary of Calculated Noise Levels

Receiver #	Receiver Location (See key plan)	Characteristic of Property in Relation to Mavis Road	Existing Noise Wall in Place (Yes/No)**	Project Noise Level dBA Leq (16)			Noise Mitigation Measures to be Considered per City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011). (e.g. > 60 dBA and/or increase of >5 dBA and no existing noise wall is in place.)
				Future (2041) Without Improvements	Future (2041) With Improvements	Difference in Noise Level with Improvements	
1	7471 Magistrate Terrace 12+900 RT	Side lot	Yes	59.3	59.4	0.1	No
2	7356 Zinnia Place 12+857 LT	Side lot	Yes	56.0	56.0	0.0	No
3	7512 Magistrate Terrace 12+825 RT	Frontage*	No	56.8	56.6	-0.2	No
4	7271 Dime Crescent 12+737 LT	Side lot	Yes	55.6	55.6	0.0	No
5	745 Salinger Court 12+695 RT	Side lot	Yes	58.0	57.8	-0.2	No
6	7250 Dime Crescent 12+642 LT	Frontage*	No	58.4	58.0	-0.4	No
7	7233 Dime Crescent 12+556 LT	Side lot	Yes	56.5	56.0	-0.5	No
8	741 Macbeth Heights 12+463 RT	Side lot	Yes	56.9	57.0	0.1	No

Receiver #	Receiver Location (See key plan)	Characteristic of Property in Relation to Mavis Road	Existing Noise Wall in Place (Yes/No)**	Project Noise Level dBA Leq (16)			Noise Mitigation Measures to be Considered per City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011). (e.g. > 60 dBA and/or increase of >5 dBA and no existing noise wall is in place.)
				Future (2041) Without Improvements	Future (2041) With Improvements	Difference in Noise Level with Improvements	
9	Avocado Crescent 12+356 LT	Frontage*	No	57.3	56.9	-0.4	No
10	701 Macbeth Heights 12+339 RT	Frontage*	No	58.0	57.6	-0.4	No
11	780 Avocado Crescent 12+235 LT	Side lot	Yes	59.8	59.4	-0.4	No
12	694 Macbeth Heights 12+231 RT	Side lot	Yes	59.5	59.3	-0.2	No
13	7080 Magistrate Terrace 12+060 RT	Frontage*	No	58.3	57.8	-0.5	No
14	770 Othello Court 12+005 LT	Frontage*	No	58.7	58.5	-0.2	No
15	7155 Magistrate Terrace – Unit 38 11+873 RT	Side lot	Yes	59.4	59.4	0.0	No
16	6992 Haines Artist Way 11+655 LT	Frontage*	No	58.4	59.0	0.6	No
17	6905 Tassel Crescent 11+611 RT	Frontage*	No	59.7	60.0	0.3	No

Receiver #	Receiver Location (See key plan)	Characteristic of Property in Relation to Mavis Road	Existing Noise Wall in Place (Yes/No)**	Project Noise Level dBA Leq (16)			Noise Mitigation Measures to be Considered per City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011). (e.g. > 60 dBA and/or increase of >5 dBA and no existing noise wall is in place.)
				Future (2041) Without Improvements	Future (2041) With Improvements	Difference in Noise Level with Improvements	
18	6896 Tassel Crescent 11+498 RT	Side lot	Yes (2.2 m)	60.0	60.0	0.0	No
19	845 Golden Farmer Way 11+398 LT	Side lot	Yes (2.4m)	59.2	59.7	0.5	No
20	6577 Song Bird Crescent 11+275 RT	Frontage*	No	59.5	59.8	0.3	No
21	789 Golden Farmer Way 11+143 LT	Side lot	Yes (2.2 m)	61.4	61.8	0.4	No (has an existing noise wall)
22	6321 Western Skies Way 11+060 RT	Side lot	Yes	59.7	59.8	0.1	No
23	761 Brass Winds Place 10+640	Side lot	Yes (2.4 m)	58.9	59.2	0.3	No
24	760 Sombrero Way 10+454	Side lot	Yes	57.6	58.7	1.1	No
25	84 Rollingwood Dr 13+515	Side lot	Yes	56.0	56.9	0.9	No
26	Cedar Lake Crescent 13+742	Frontage*	No	59.2	58.6	-0.6	No

*Frontage on parallel roadway to Mavis Road **2.0 m noise wall height assumed, unless otherwise noted

6. Findings

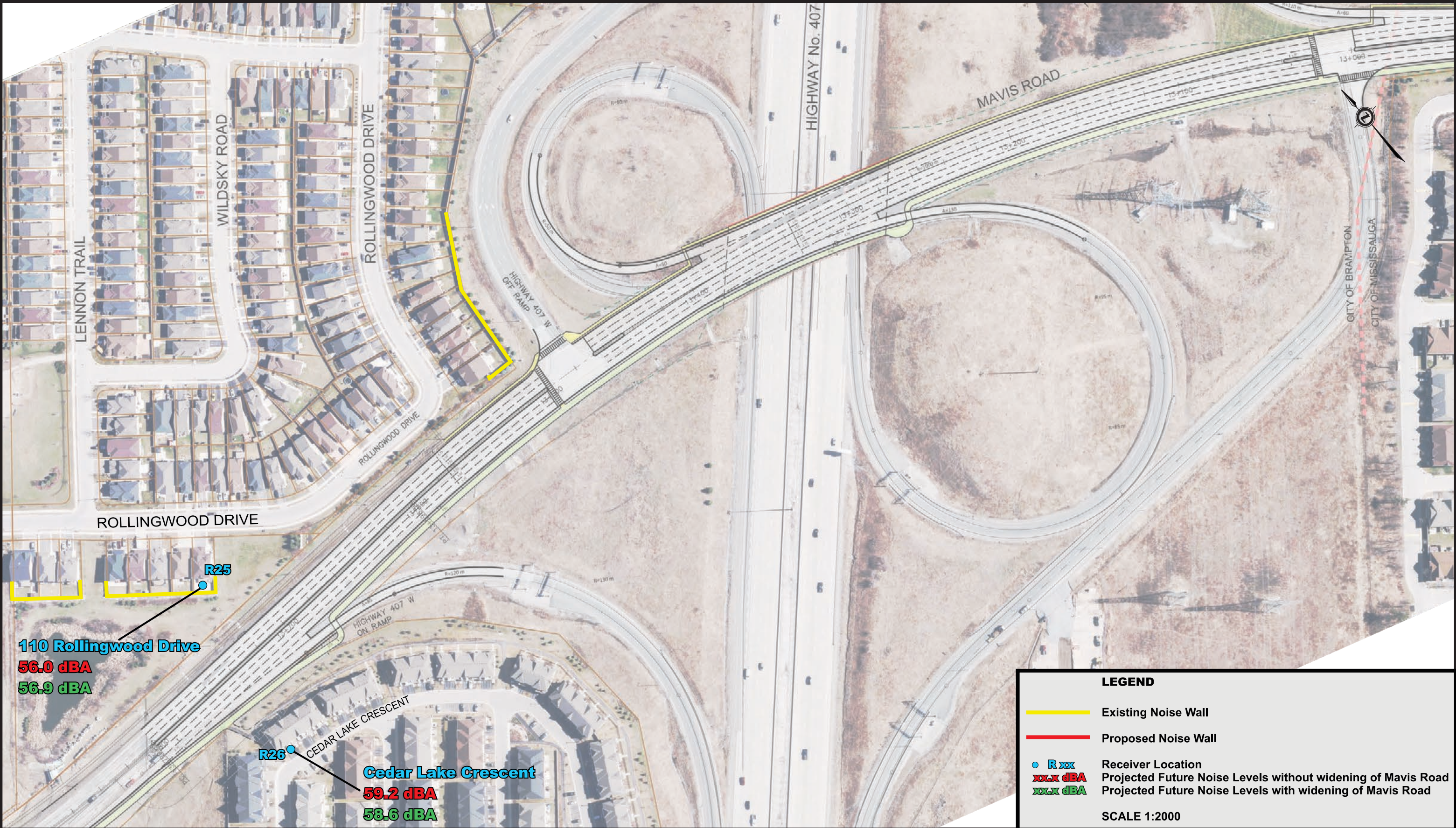
The findings of the noise assessment are as follows:

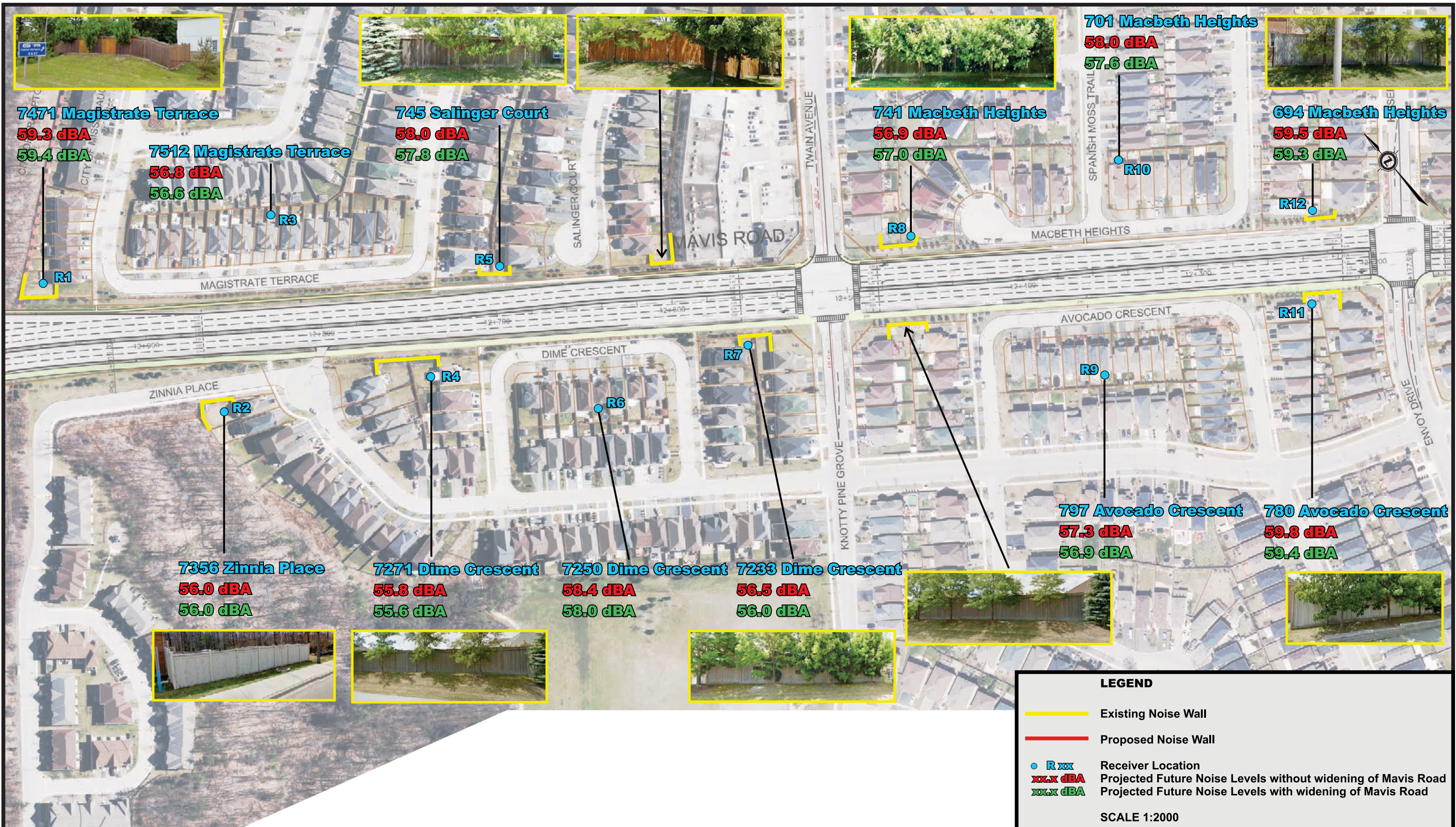
- The projected noise levels in Year 2041 at Receivers 1 to 26 without improvements to Mavis Road are calculated to range from 55.6 to 61.4 dBA.
- The projected noise levels in Year 2041 at Receivers 1 to 26 with improvements to Mavis Road are calculated to range from 55.6 dBA to 61.8 dBA.
- The maximum potential increase in noise level between the future (2041) without improvements and the future (2041) with improvements at the 26 receiver locations was calculated to be less than 5 dBA.
- Since the potential increases in the projected noise levels are less than 5 dBA, the consideration of noise mitigation based on MTO/MOECC Noise Protocol is not warranted.
- Receiver 21 has predicted noise levels of greater than 60 dBA for both future (2041) without and with improvements. However, per the City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011) for Capital Projects, no mitigation is warranted at this location as this receiver already have an existing 2.2 m high noise barrier in place (see Section 2.0 Methodology - City of Mississauga Guidelines).

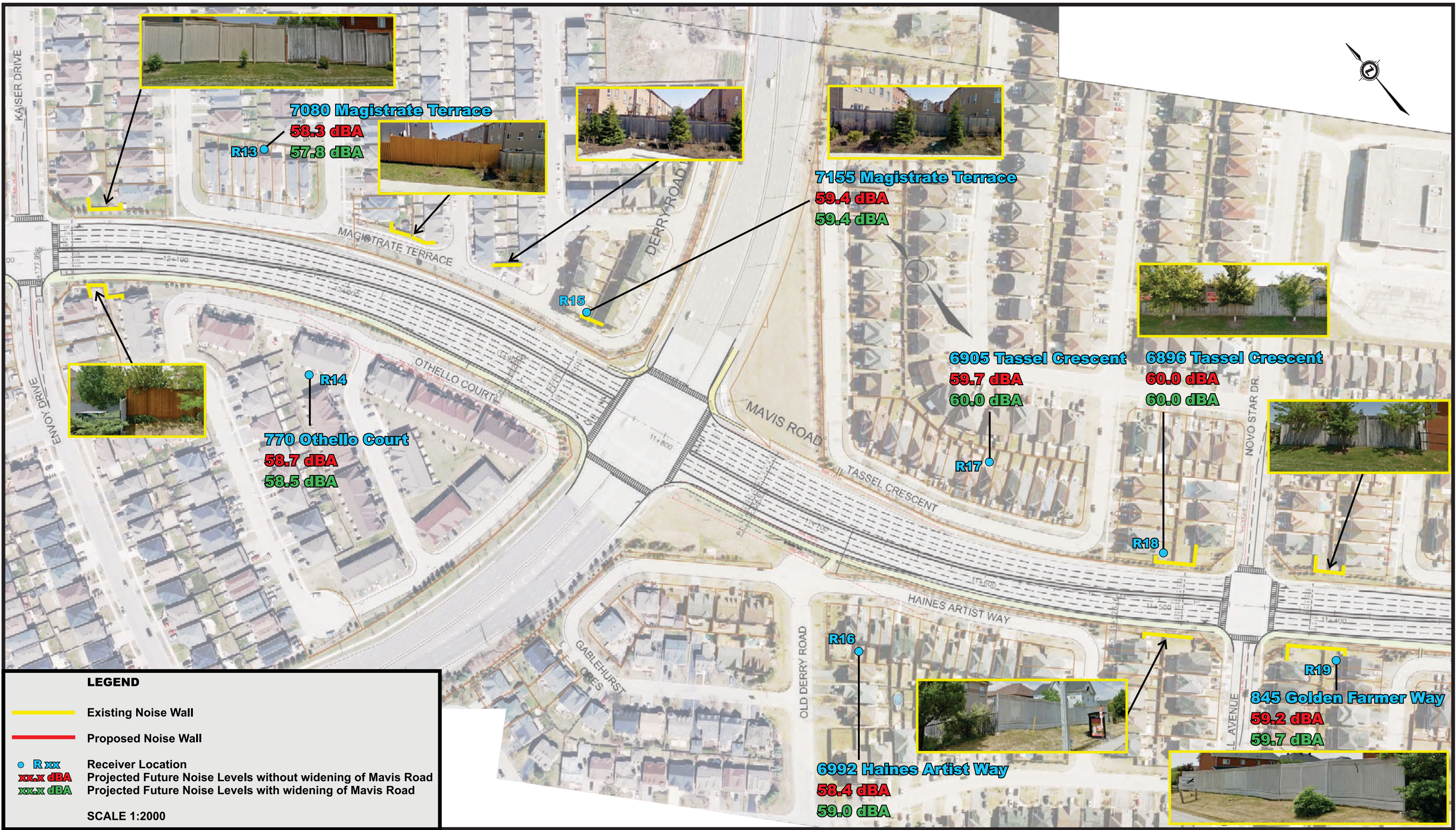
7. Conclusions

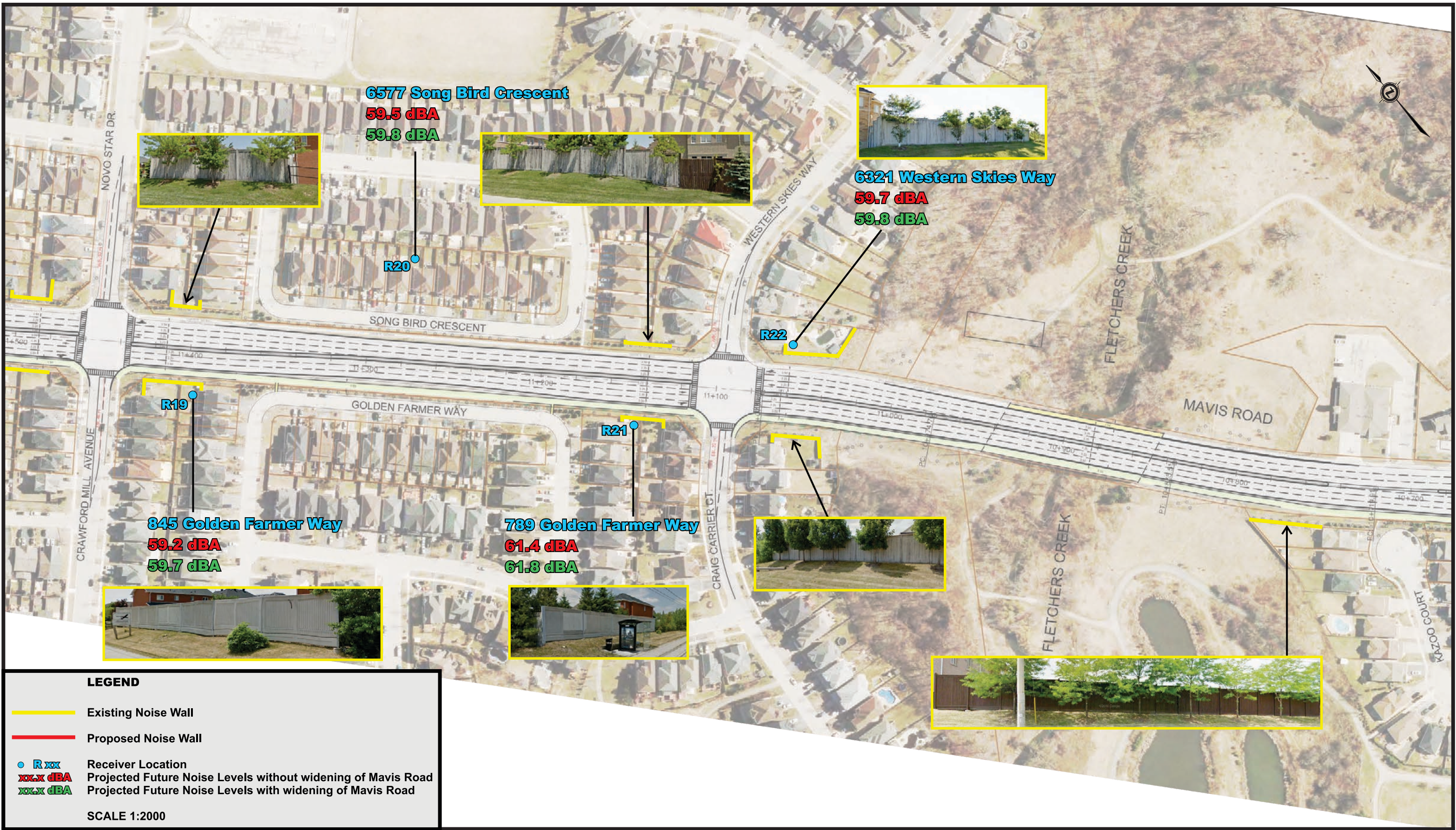
The conclusions of the noise assessment for the Mavis Road improvements are as follows:

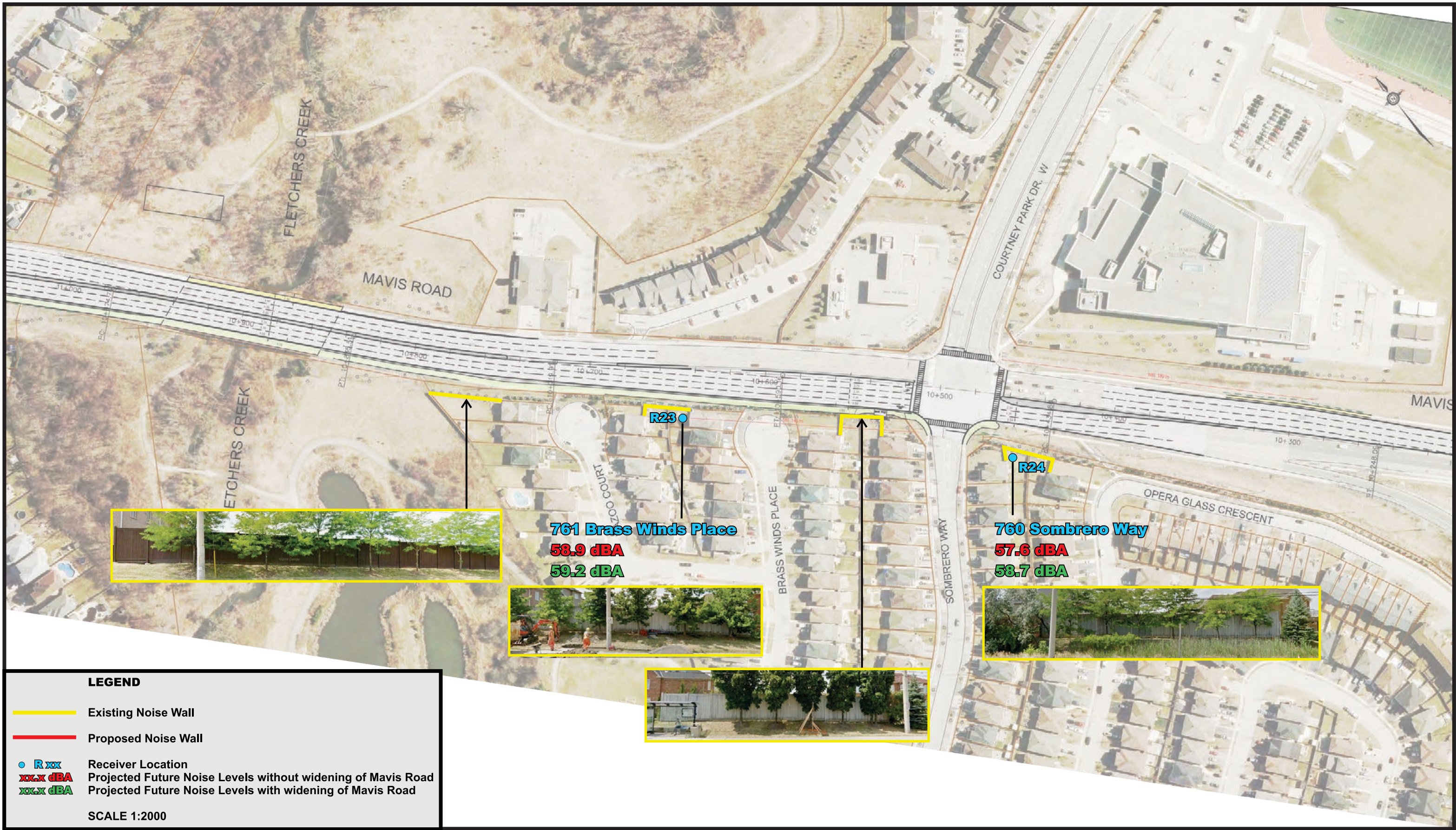
- The difference between the projected future (2041) noise levels with and without the proposed improvements to Mavis Road were determined to be less than 5 dBA.
- Therefore, the consideration of noise mitigation is not warranted based on MTO/MOECC Noise Protocol.
- While Receivers 21 had predicted noise levels of greater than 60 dBA under future (2041) with and without improvement conditions, there is an existing noise wall in place. Therefore, it does not warrant further mitigation based on the City of Mississauga Policy 09-03-03, Noise Attenuation Barriers on Major Roadways (April 2011).











APPENDIX A

CITY OF MISSISSAUGA POLICY 09-03-03, NOISE ATTENUATION BARRIERS ON
MAJOR ROADWAYS (APRIL 2011).

Policy Title: Noise Attenuation Barriers on Major Roadways

Policy Number: 09-03-03

Section:	Environment And Conservation	Subsection:	Noise Pollution And Control
Effective Date:	April 13, 2011	Last Review Date:	March, 2015
Approved by: Council		Owner Division/Contact: Transportation and Works Department, Transportation and Infrastructure Planning Division	

Policy Statement

The City of Mississauga endeavours to ensure that noise attenuation barriers are constructed where necessary and that any such barriers are maintained in good condition, both in structure and appearance.

Purpose

This policy identifies responsibilities for construction and maintenance of noise attenuation barriers and is divided into four categories:

- Noise attenuation barriers in existence at the time of approval of this policy that are to be replaced, as part of a replacement program
- Noise attenuation barriers to be constructed after approval of this policy, as part of new development
- New noise barriers to be constructed after approval of this policy, where none currently exist, as part of a retrofit program, and
- Noise attenuation barriers to be constructed after approval of this policy, as part of a capital works project

Scope

This policy applies to noise attenuation barriers which are or will be installed adjacent to municipal highways which are under the jurisdiction of the City of Mississauga.

Legislative Authority

This policy complies with *the Municipal Act*, 2001, Ontario Regulation 586/06, the Local Improvement Charges – Priority Lien Status and the City of Mississauga's Property Standards By-law. Should any of these be amended so that this policy no longer complies, the particular Act, Regulation or By-law will take precedence.

Installation Criteria

Installation of new noise attenuation barriers is subject to the following:

- The noise level must be greater than 60 dBA (LEQ daytime). (LEQ means “equivalent sound level” and daytime means 7:00 a.m. to 11:00 p.m. LEQ daytime means daytime average.)
- The residential area must be adjacent to arterial and major collector roads, as designated in the Official Plan. Retrofit or replacements will not be considered adjacent to freeways or railway tracks, as they are not under the jurisdiction of the City
- Barriers must be installed on a complete block to ensure their effectiveness

Replacement Program Category – Existing Barriers

Should a noise attenuation barrier on private property require replacement, the City will construct a new noise attenuation barrier which will be situated, whenever possible, wholly on City property. The costs of construction of the new barrier will be 100 percent City funded. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City.

The replacement of deteriorated noise attenuation barriers will be determined based on priority, primarily according to the level of deterioration of the barriers. Priority listing will be reviewed annually and locations presented to Council for replacement approval.

Maintenance of noise existing attenuation barriers situated on private property will remain the responsibility of the property owner until such time as the City replaces the barrier and reinstalls it on City property. The Property Standards By-law establishes requirements of property owners with respect to the maintenance of their property. The City will ensure that noise attenuation barriers which are situated on private property are maintained to an acceptable level through enforcement of this by-law.

Retrofit Program Category – New Barriers

The City may install noise barriers along major collector or arterial roads in areas where such barriers were not previously installed. These installations may be initiated by the City or requested by private property owners by means of a petition. Installations will be dependent on the installation criteria in this policy being met.

The noise attenuation barrier will be situated on City property whenever possible. The costs of construction of the barrier will be shared on a 50/50 basis with the abutting private property owner. The necessary barrier end returns will be included in the overall estimated cost and the landowners will be assessed on the basis of their rear lot frontage. There will be no adjustments for irregular lot sizes. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City.

Petition Required

A petition supporting the installation of a noise barrier and signed by the number of landowners as required under Ontario Regulation 586/06, *Municipal Act*, 2001, must be filed with the City Clerk.

Property owners wishing to oppose the installation of a noise barrier which was initiated by the City must file a petition with the City Clerk.

Capital Works Project Category

Noise barriers may be constructed by the City in conjunction with a road widening project if no noise attenuation barriers exist and the proposed additional lanes of traffic are found to adversely affect the daytime noise level beyond the established criteria (refer to the "Installation Criteria" section of this policy for the applicable criteria). If the installation criteria are satisfied, the City may elect to pre-install a noise attenuation barrier up to three years prior to the scheduled road widening.

Noise attenuation barriers may be constructed by the City at 100% City cost, on arterial roads as part of a significant capital improvement project, such as improvements at major intersections, transit priority and/or related infrastructure improvements and major asphalt resurfacing or reconstruction, where no road widening is being undertaken. The noise attenuation barriers must be installed where none currently exist and meet the criteria as outlined in the "Installation Criteria" section of this policy.

The cost of construction will be included in the project costs. The noise attenuation barriers will be situated on City property. Ongoing maintenance and future replacements will be the responsibility of the City.

New Development Category

Servicing Agreements for new developments which require the construction of a noise attenuation barrier will specify that the noise attenuation barrier be situated on City property. Costs of construction will be the responsibility of the developer. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City.

Revision History

Reference	Description
OW-192-88 – 1988 05 24	
OW-114-92 – 1992 04 27	

Policy Number: 09-03-03

Effective Date: April 13, 2011

Policy Title: Noise Attenuation Barriers on Major Roadways

Last Review Date: March, 2015

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GC-0169-2005 – 2005 03 30	
August 23, 2007	Housekeeping amendment– to update Ont. Regulation 119/03 to Ont. Regulation 586/06)
GC-0067-2009 – 2009 03 11	Construction of noise barriers without road widening
GC-0166-2011 – 2011 04 13	Change in cost sharing to 100% City for replacement of deteriorated barriers

APPENDIX B
STAMSON OUTPUT FILES

APPENDIX B.1
STAMSON OUTPUT FILES
FUTURE WITHOUT IMPROVEMENTS

Filename: r1fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 32.20 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.08 m
Barrier receiver distance : 7.30 m
Source elevation : 200.15 m
Receiver elevation : 200.23 m
Barrier elevation : 200.12 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17254 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 42.80 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.34 m
Barrier receiver distance : 7.30 m
Source elevation     : 199.89 m
Receiver elevation   : 200.23 m
Barrier elevation    : 200.12 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.50 !      201.62

```

ROAD (0.00 + 57.14 + 0.00) = 57.14 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.55 69.22  0.00 -5.14 -1.27  0.00  0.00  -
5.68 57.14
-----
-----

```

Segment Leq : 57.14 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.49 !      201.61

```

ROAD (0.00 + 55.21 + 0.00) = 55.21 dBA

```

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

```


-90	90	0.54	69.15	0.00	-7.02	-1.25	0.00	0.00	-
5.68	55.21								

Segment Leq : 55.21 dBA

Total Leq All Segments: 59.29 dBA

TOTAL Leq FROM ALL SOURCES: 59.29

Filename: R2FNB.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 49.10 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 1.59 m
Barrier receiver distance : 6.90 m
Source elevation : 200.16 m
Receiver elevation : 198.57 m
Barrier elevation : 199.43 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 41.80 m
```



```

Receiver height      :    1.50 m
Topography           :         4      (Elevated; with barrier)
Barrier angle1       :   -90.00 deg   Angle2 : 90.00 deg
Barrier height       :    2.00 m
Elevation            :    1.40 m
Barrier receiver distance :    6.90 m
Source elevation     :   199.97 m
Receiver elevation   :   198.57 m
Barrier elevation    :   199.43 m
Reference angle      :    0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !         1.50 !         0.81 !         200.24

```

ROAD (0.00 + 52.55 + 0.00) = 52.55 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.50 69.22  0.00 -7.75 -1.18  0.00  0.00  -
7.74 52.55
-----

```

Segment Leq : 52.55 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !         1.50 !         0.81 !         200.24

```

ROAD (0.00 + 53.47 + 0.00) = 53.47 dBA

```

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

```

-90	90	0.51	69.19	0.00	-6.72	-1.19	0.00	0.00	-
7.81	53.47								

Segment Leq : 53.47 dBA

Total Leq All Segments: 56.04 dBA

TOTAL Leq FROM ALL SOURCES: 56.04

Filename: r3fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 59.70 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.26 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 67.50 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.14 m
Reference angle : 0.00
```


Results segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 54.21 + 0.00) = 54.21 dBA

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

-90	90	0.66	69.22	0.00	-9.96	-1.46	0.00	-3.60
0.00	54.21							

Segment Leq : 54.21 dBA

Results segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 53.32 + 0.00) = 53.32 dBA

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

-90	90	0.66	69.19	0.00	-10.84	-1.46	0.00	-3.57
0.00	53.32							

Segment Leq : 53.32 dBA

Total Leq All Segments: 56.80 dBA

TOTAL Leq FROM ALL SOURCES: 56.80

Filename: r4fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 32.90 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.03 m
Barrier receiver distance : 6.30 m
Source elevation : 200.17 m
Receiver elevation : 200.20 m
Barrier elevation : 201.73 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 24.70 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.06 m
Barrier receiver distance : 6.30 m
Source elevation      : 200.14 m
Receiver elevation    : 200.20 m
Barrier elevation     : 201.73 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !          1.50 !          -0.11 !          201.62

```

ROAD (0.00 + 51.73 + 0.00) = 51.73 dBA

```

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

```

```

-----
-90    90    0.55 69.22  0.00 -5.29 -1.27  0.00  0.00 -
10.93 51.73
-----
-----

```

Segment Leq : 51.73 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !          1.50 !          -0.15 !          201.58

```

ROAD (0.00 + 53.29 + 0.00) = 53.29 dBA

```

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

```

```

-----
-----

```


-90	90	0.55	69.19	0.00	-3.36	-1.27	0.00	0.00	-
11.27	53.29								

Segment Leq : 53.29 dBA

Total Leq All Segments: 55.59 dBA

TOTAL Leq FROM ALL SOURCES: 55.59

Filename: r5fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 21.60 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.57 m
Barrier receiver distance : 4.30 m
Source elevation : 199.86 m
Receiver elevation : 200.43 m
Barrier elevation : 201.11 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 32.20 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.54 m
Barrier receiver distance : 4.30 m
Source elevation     : 199.89 m
Receiver elevation   : 200.43 m
Barrier elevation    : 201.11 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.63 !      201.74

```

ROAD (0.00 + 55.92 + 0.00) = 55.92 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.53 69.22  0.00 -2.43 -1.24  0.00  0.00  -
9.64  55.92
-----

```

Segment Leq : 55.92 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.70 !      201.81

```

ROAD (0.00 + 53.68 + 0.00) = 53.68 dBA

```

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

```


-90	90	0.54	69.19	0.00	-5.09	-1.24	0.00	0.00	-
9.18	53.68								

Segment Leq : 53.68 dBA

Total Leq All Segments: 57.95 dBA

TOTAL Leq FROM ALL SOURCES: 57.95

Filename: r6fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.14 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 51.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.14 m
Reference angle : 0.00
```

Results segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 54.50 + 0.00) = 54.50 dBA

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

-90	90	0.66	69.22	0.00	-10.57	-1.46	0.00	-2.69
0.00	54.50							

Segment Leq : 54.50 dBA

Results segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 56.18 + 0.00) = 56.18 dBA

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

-90	90	0.66	69.19	0.00	-8.82	-1.46	0.00	-2.73
0.00	56.18							

Segment Leq : 56.18 dBA

Total Leq All Segments: 58.43 dBA

TOTAL Leq FROM ALL SOURCES: 58.43

Filename: r7fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 35.90 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.20 m
Barrier receiver distance : 6.20 m
Source elevation : 198.53 m
Receiver elevation : 198.73 m
Barrier elevation : 200.02 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 21.10 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.17 m
Barrier receiver distance : 6.20 m
Source elevation     : 198.56 m
Receiver elevation   : 198.73 m
Barrier elevation    : 200.02 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.11 !      200.13

```

ROAD (0.00 + 51.81 + 0.00) = 51.81 dBA

```

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

```

```

-----
-90    90    0.55  69.22   0.00  -5.86  -1.26   0.00   0.00 -
10.30  51.81
-----
-----

```

Segment Leq : 51.81 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.04 !      200.06

```

ROAD (0.00 + 54.70 + 0.00) = 54.70 dBA

```

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

```

```

-----
-----

```

-90	90	0.55	69.19	0.00	-2.29	-1.26	0.00	0.00	-
10.94	54.70								

Segment Leq : 54.70 dBA

Total Leq All Segments: 56.50 dBA

TOTAL Leq FROM ALL SOURCES: 56.50

Filename: r8fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 19.90 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.60 m
Barrier receiver distance : 5.30 m
Source elevation : 197.59 m
Receiver elevation : 198.19 m
Barrier elevation : 199.29 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 35.20 m
```



```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.55 m
Barrier receiver distance : 5.30 m
Source elevation      : 197.64 m
Receiver elevation    : 198.19 m
Barrier elevation     : 199.29 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !          1.50 !          0.14 !          199.43

```

ROAD (0.00 + 55.10 + 0.00) = 55.10 dBA

```

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

```

```

-----
-90    90    0.53  69.22   0.00  -1.88  -1.24   0.00   0.00  -
11.00  55.10
-----
-----

```

Segment Leq : 55.10 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !          1.50 !          0.26 !          199.55

```

ROAD (0.00 + 52.07 + 0.00) = 52.07 dBA

```

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

```

```

-----
-----

```

-90	90	0.54	69.19	0.00	-5.69	-1.24	0.00	0.00	-
10.20	52.07								

Segment Leq : 52.07 dBA

Total Leq All Segments: 56.85 dBA

TOTAL Leq FROM ALL SOURCES: 56.85

Filename: r9fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 69.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.19 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 52.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.19 m
Reference angle : 0.00
```

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 53.20 + 0.00) = 53.20 dBA

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

-90	90	0.66	69.22	0.00	-11.00	-1.46	0.00	-3.57
0.00	53.20							

Segment Leq : 53.20 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 55.14 + 0.00) = 55.14 dBA

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

-90	90	0.66	69.19	0.00	-8.96	-1.46	0.00	-3.63
0.00	55.14							

Segment Leq : 55.14 dBA

Total Leq All Segments: 57.29 dBA

TOTAL Leq FROM ALL SOURCES: 57.29

Filename: r10fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 55.10 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.15 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 72.90 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.11 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 55.84 + 0.00) = 55.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
--------	--------	-------	--------	-------	-------	-------	-------	-------

B.Adj	SubLeq
-------	--------

-90	90	0.64	69.22	0.00	-9.25	-1.42	0.00	-2.72
0.00	55.84							

Segment Leq : 55.84 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 53.84 + 0.00) = 53.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
--------	--------	-------	--------	-------	-------	-------	-------	-------

B.Adj	SubLeq
-------	--------

-90	90	0.64	69.19	0.00	-11.25	-1.42	0.00	-2.68
0.00	53.84							

Segment Leq : 53.84 dBA

Total Leq All Segments: 57.96 dBA

TOTAL Leq FROM ALL SOURCES: 57.96

Filename: r11fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 37.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.66 m
Barrier receiver distance : 6.50 m
Source elevation : 195.32 m
Receiver elevation : 195.98 m
Barrier elevation : 196.34 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 16.80 m

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.65 m
Barrier receiver distance : 6.50 m
Source elevation     : 195.33 m
Receiver elevation   : 195.98 m
Barrier elevation    : 196.34 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.96 !      197.30

```

ROAD (0.00 + 54.53 + 0.00) = 54.53 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.53 69.22  0.00 -6.01 -1.23  0.00  0.00  -
7.45  54.53
-----
-----

```

Segment Leq : 54.53 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.74 !      197.08

```

ROAD (0.00 + 58.33 + 0.00) = 58.33 dBA

```

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

```


-90	90	0.53	69.19	0.00	-0.75	-1.23	0.00	0.00	-
8.87	58.33								

Segment Leq : 58.33 dBA

Total Leq All Segments: 59.84 dBA

TOTAL Leq FROM ALL SOURCES: 59.84

Filename: r12fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 16.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.82 m
Barrier receiver distance : 4.40 m
Source elevation : 195.25 m
Receiver elevation : 196.07 m
Barrier elevation : 196.51 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 36.50 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height        : 2.00 m
Elevation            : 0.74 m
Barrier receiver distance : 4.40 m
Source elevation      : 195.33 m
Receiver elevation    : 196.07 m
Barrier elevation     : 196.51 m
Reference angle       : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.73 !      197.24

```

ROAD (0.00 + 58.11 + 0.00) = 58.11 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.53 69.22  0.00 -0.43 -1.23  0.00  0.00  -
9.46  58.11
-----

```

Segment Leq : 58.11 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.92 !      197.43

```

ROAD (0.00 + 53.85 + 0.00) = 53.85 dBA

```

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

```

-90	90	0.53	69.19	0.00	-5.91	-1.23	0.00	0.00	-
8.21	53.85								

Segment Leq : 53.85 dBA

Total Leq All Segments: 59.49 dBA

TOTAL Leq FROM ALL SOURCES: 59.49

Filename: r13fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.60 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.33 m
Reference angle : 0.00
```


Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 56.20 + 0.00) = 56.20 dBA

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

-90	90	0.62	69.22	0.00	-8.90	-1.40	0.00	-2.72
0.00	56.20							

Segment Leq : 56.20 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 54.18 + 0.00) = 54.18 dBA

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

-90	90	0.63	69.19	0.00	-10.92	-1.41	0.00	-2.68
0.00	54.18							

Segment Leq : 54.18 dBA

Total Leq All Segments: 58.32 dBA

TOTAL Leq FROM ALL SOURCES: 58.32

Filename: r14fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 67.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.21 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 49.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.18 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 54.47 + 0.00) = 54.47 dBA

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

-90	90	0.64	69.22	0.00	-10.65	-1.42	0.00	-2.69
0.00	54.47							

Segment Leq : 54.47 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 56.60 + 0.00) = 56.60 dBA

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

-90	90	0.64	69.19	0.00	-8.44	-1.42	0.00	-2.74
0.00	56.60							

Segment Leq : 56.60 dBA

Total Leq All Segments: 58.67 dBA

TOTAL Leq FROM ALL SOURCES: 58.67

Filename: r15fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb-traff 1

Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb-traff 1

Angle1 Angle2 : -90.00 deg -65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 28.20 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -65.00 deg
Barrier height : 2.00 m
Elevation : 2.60 m
Barrier receiver distance : 3.90 m
Source elevation : 190.23 m
Receiver elevation : 192.83 m
Barrier elevation : 192.76 m
Reference angle : 0.00

Road data, segment # 2: nb-traff 2

Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: nb-traff 2

Angle1 Angle2 : -65.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 28.20 m

Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -65.00 deg Angle2 : 90.00 deg
 Barrier height : 2.00 m
 Elevation : 2.60 m
 Barrier receiver distance : 3.90 m
 Source elevation : 190.23 m
 Receiver elevation : 192.83 m
 Barrier elevation : 192.76 m
 Reference angle : 0.00

Road data, segment # 3: sb-traff 1

 Car traffic volume : 17524 veh/TimePeriod
 Medium truck volume : 274 veh/TimePeriod
 Heavy truck volume : 274 veh/TimePeriod
 Posted speed limit : 70 km/h
 Road gradient : 1 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: sb-traff 1

 Angle1 Angle2 : -90.00 deg -65.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 47.80 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -65.00 deg
 Barrier height : 2.00 m
 Elevation : 2.63 m
 Barrier receiver distance : 3.90 m
 Source elevation : 190.20 m
 Receiver elevation : 192.83 m
 Barrier elevation : 192.76 m
 Reference angle : 0.00

Road data, segment # 4: sb-traff 1

 Car traffic volume : 17308 veh/TimePeriod
 Medium truck volume : 380 veh/TimePeriod
 Heavy truck volume : 380 veh/TimePeriod
 Posted speed limit : 70 km/h
 Road gradient : 1 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 4: sb-traff 1

 Angle1 Angle2 : -65.00 deg 90.00 deg
 Wood depth : 0 (No woods.)


```

No of house rows      :      0
Surface               :      1      (Absorptive ground
surface)
Receiver source distance : 47.80 m
Receiver height       : 1.50 m
Topography            :      4      (Elevated; with barrier)
Barrier angle1        : -65.00 deg  Angle2 : 90.00 deg
Barrier height        : 2.00 m
Elevation             : 2.63 m
Barrier receiver distance : 3.90 m
Source elevation       : 190.20 m
Receiver elevation     : 192.83 m
Barrier elevation      : 192.76 m
Reference angle       : 0.00

```

Results segment # 1: nb-traff 1

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.11 !	1.50 !	1.16 !	193.92

ROAD (0.00 + 47.16 + 0.00) = 47.16 dBA

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

-90	-65	0.47	69.22	0.00	-4.04	-11.99	0.00	0.00	-
6.03	47.16								

Segment Leq : 47.16 dBA

Results segment # 2: nb-traff 2

Source height = 1.20 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.20 !	1.50 !	1.17 !	193.93

ROAD (0.00 + 57.22 + 0.00) = 57.22 dBA

Angle1 B.Adj	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-65 7.75	90 57.22	0.47	70.49	0.00	-4.03	-1.49	0.00	0.00

Segment Leq : 57.22 dBA

Results segment # 3: sb-traff 1

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	1.32	194.08

ROAD (0.00 + 44.15 + 0.00) = 44.15 dBA

Angle1 B.Adj	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-90 5.66	-65 44.15	0.47	69.20	0.00	-7.41	-11.99	0.00	0.00

Segment Leq : 44.15 dBA

Results segment # 4: sb-traff 1

Source height = 1.20 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.20	1.50	1.33	194.09

ROAD (0.00 + 54.11 + 0.00) = 54.11 dBA

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

-65	90	0.47	69.88	0.00	-7.40	-1.49	0.00	0.00	-
6.87	54.11								

Segment Leq : 54.11 dBA

Total Leq All Segments: 59.36 dBA

TOTAL Leq FROM ALL SOURCES: 59.36

Filename: r16fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 77.30 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.43 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 57.10 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.45 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 54.58 + 0.00) = 54.58 dBA

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

-90	90	0.66	70.49	0.00	-11.79	-1.45	0.00	-2.67
0.00	54.58							

Segment Leq : 54.58 dBA

Results segment # 2: sb

Source height = 1.20 m

ROAD (0.00 + 56.11 + 0.00) = 56.11 dBA

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

-90	90	0.66	69.88	0.00	-9.61	-1.45	0.00	-2.71
0.00	56.11							

Segment Leq : 56.11 dBA

Total Leq All Segments: 58.42 dBA

TOTAL Leq FROM ALL SOURCES: 58.42

Filename: r17fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 19989 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 51.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.38 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.70 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.40 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 57.90 + 0.00) = 57.90 dBA

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

-90	90	0.66	70.92	0.00	-8.84	-1.45	0.00	-2.73
0.00	57.90							

Segment Leq : 57.90 dBA

Results segment # 2: sb

Source height = 1.20 m

ROAD (0.00 + 55.01 + 0.00) = 55.01 dBA

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

-90	90	0.66	70.30	0.00	-11.16	-1.45	0.00	-2.68
0.00	55.01							

Segment Leq : 55.01 dBA

Total Leq All Segments: 59.70 dBA

TOTAL Leq FROM ALL SOURCES: 59.70

Filename: r18fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 16.70 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Elevation : 0.75 m
Barrier receiver distance : 5.50 m
Source elevation : 185.42 m
Receiver elevation : 186.17 m
Barrier elevation : 186.64 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.30 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.20 m
Elevation            : 0.57 m
Barrier receiver distance : 5.50 m
Source elevation     : 185.60 m
Receiver elevation   : 186.17 m
Barrier elevation    : 186.64 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.69 !          187.33

```

ROAD (0.00 + 58.60 + 0.00) = 58.60 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90     90     0.51  70.49   0.00  -0.71  -1.20   0.00   0.00   -
9.99  58.60
-----
-----

```

Segment Leq : 58.60 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.90 !          187.54

```

ROAD (0.00 + 54.20 + 0.00) = 54.20 dBA

```

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

```

```

-----
-90      90    0.52  69.88    0.00  -5.83  -1.21    0.00    0.00  -
8.64  54.20
-----
-----

```

Segment Leq : 54.20 dBA

Total Leq All Segments: 59.95 dBA

TOTAL Leq FROM ALL SOURCES: 59.95

Filename: r19fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 37.10 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.40 m
Elevation : 0.13 m
Barrier receiver distance : 6.70 m
Source elevation : 184.48 m
Receiver elevation : 184.61 m
Barrier elevation : 185.18 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 17.30 m

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.40 m
Elevation            : 0.13 m
Barrier receiver distance : 6.70 m
Source elevation     : 184.48 m
Receiver elevation   : 184.61 m
Barrier elevation    : 185.18 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.85 !       186.03

```

ROAD (0.00 + 54.23 + 0.00) = 54.23 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.52  70.49   0.00  -5.98  -1.21   0.00   0.00  -
9.07  54.23
-----
-----

```

Segment Leq : 54.23 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.77 !       185.95

```

ROAD (0.00 + 57.60 + 0.00) = 57.60 dBA

```

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

```


-90	90	0.52	69.88	0.00	-0.94	-1.21	0.00	0.00	-
10.12	57.60								

Segment Leq : 57.60 dBA

Total Leq All Segments: 59.24 dBA

TOTAL Leq FROM ALL SOURCES: 59.24

Filename: r20fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 19989 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 52.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 66.40 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 57.35 + 0.00) = 57.35 dBA

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

-90	90	0.66	70.50	0.00	-8.96	-1.46	0.00	-2.73
0.00	57.35							

Segment Leq : 57.35 dBA

Results segment # 2: sb

Source height = 1.25 m

ROAD (0.00 + 55.35 + 0.00) = 55.35 dBA

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

-90	90	0.66	70.22	0.00	-10.72	-1.46	0.00	-2.69
0.00	55.35							

Segment Leq : 55.35 dBA

Total Leq All Segments: 59.47 dBA

TOTAL Leq FROM ALL SOURCES: 59.47

Filename: r21fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.30 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Elevation : 0.68 m
Barrier receiver distance : 3.40 m
Source elevation : 182.28 m
Receiver elevation : 182.96 m
Barrier elevation : 183.08 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.20 m
Elevation            : 0.49 m
Barrier receiver distance : 3.40 m
Source elevation      : 182.47 m
Receiver elevation    : 182.96 m
Barrier elevation     : 183.08 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          1.28 !          184.36

```

ROAD (0.00 + 56.00 + 0.00) = 56.00 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90     90    0.52  70.49   0.00  -5.25  -1.21   0.00   0.00  -
8.04  56.00
-----
-----

```

Segment Leq : 56.00 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          1.20 !          184.28

```

ROAD (0.00 + 59.93 + 0.00) = 59.93 dBA

```

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

```

-90	90	0.52	69.88	0.00	0.00	-1.22	0.00	0.00	-
8.73	59.93								

Segment Leq : 59.93 dBA

Total Leq All Segments: 61.41 dBA

TOTAL Leq FROM ALL SOURCES: 61.41

Filename: r22fnb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 19.50 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 1.02 m
Barrier receiver distance : 5.30 m
Source elevation : 181.80 m
Receiver elevation : 182.82 m
Barrier elevation : 183.32 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 39.00 m


```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 1.06 m
Barrier receiver distance : 5.30 m
Source elevation     : 181.76 m
Receiver elevation   : 182.82 m
Barrier elevation    : 183.32 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.64 !          183.96

```

ROAD (0.00 + 58.25 + 0.00) = 58.25 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90     90     0.52  70.49   0.00  -1.73  -1.21   0.00   0.00  -
9.30  58.25
-----
-----

```

Segment Leq : 58.25 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.82 !          184.14

```

ROAD (0.00 + 54.12 + 0.00) = 54.12 dBA

```

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

```

-90	90	0.52	69.88	0.00	-6.30	-1.21	0.00	0.00	-
8.26	54.12								

Segment Leq : 54.12 dBA

Total Leq All Segments: 59.67 dBA

TOTAL Leq FROM ALL SOURCES: 59.67

Filename: r23fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 32.20 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.40 m
Elevation : 0.74 m
Barrier receiver distance : 4.00 m
Source elevation : 182.10 m
Receiver elevation : 182.84 m
Barrier elevation : 183.17 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 19.50 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.40 m
Elevation            : 0.92 m
Barrier receiver distance : 4.00 m
Source elevation     : 181.92 m
Receiver elevation   : 182.84 m
Barrier elevation    : 183.17 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          1.04 !          184.21

```

ROAD (0.00 + 54.80 + 0.00) = 54.80 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.50  70.49   0.00  -4.99  -1.18   0.00   0.00  -
9.53  54.80
-----

```

Segment Leq : 54.80 dBA

Results segment # 2: SB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.92 !          184.09

```

ROAD (0.00 + 56.75 + 0.00) = 56.75 dBA

```

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

```

-90	90	0.50	69.88	0.00	-1.71	-1.17	0.00	0.00	-
10.26	56.75								

Segment Leq : 56.75 dBA

Total Leq All Segments: 58.89 dBA

TOTAL Leq FROM ALL SOURCES: 58.89

Filename: R24FNB.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 19949 veh/TimePeriod
Medium truck volume : 438 veh/TimePeriod
Heavy truck volume : 438 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 44.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.39 m
Barrier receiver distance : 5.80 m
Source elevation : 184.50 m
Receiver elevation : 184.11 m
Barrier elevation : 184.95 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17308 veh/TimePeriod
Medium truck volume : 380 veh/TimePeriod
Heavy truck volume : 380 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.20 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.06 m
Barrier receiver distance : 5.80 m
Source elevation     : 184.17 m
Receiver elevation   : 184.11 m
Barrier elevation    : 184.95 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.67 !          185.62

```

ROAD (0.00 + 53.52 + 0.00) = 53.52 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.54  70.49   0.00  -7.18  -1.24   0.00   0.00  -
8.54  53.52
-----
-----

```

Segment Leq : 53.52 dBA

Results segment # 2: SB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.61 !          185.56

```

ROAD (0.00 + 55.40 + 0.00) = 55.40 dBA

```

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

```


-90	90	0.55	69.88	0.00	-4.24	-1.26	0.00	0.00	-
8.97	55.40								

Segment Leq : 55.40 dBA

Total Leq All Segments: 57.57 dBA

TOTAL Leq FROM ALL SOURCES: 57.57

Filename: r25fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 42.80 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.50 m
Elevation : 0.75 m
Barrier receiver distance : 5.00 m
Source elevation : 205.00 m
Receiver elevation : 204.75 m
Barrier elevation : 204.80 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 52.50 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.50 m
Elevation            : 0.25 m
Barrier receiver distance : 5.00 m
Source elevation     : 204.50 m
Receiver elevation   : 204.75 m
Barrier elevation    : 204.80 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.43 !      206.23

```

ROAD (0.00 + 53.69 + 0.00) = 53.69 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.50 69.58  0.00 -6.83 -1.17  0.00  0.00  -
7.89 53.69
-----
-----

```

Segment Leq : 53.69 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.39 !      206.19

```

ROAD (0.00 + 52.10 + 0.00) = 52.10 dBA

```

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

```

-90	90	0.51	69.54	0.00	-8.24	-1.20	0.00	0.00	-
8.01	52.10								

Segment Leq : 52.10 dBA

Total Leq All Segments: 55.98 dBA

TOTAL Leq FROM ALL SOURCES: 55.98

Filename: r26fnb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 17663 veh/TimePeriod
Medium truck volume : 274 veh/TimePeriod
Heavy truck volume : 274 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 59.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.00 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 17524 veh/TimePeriod
Medium truck volume : 272 veh/TimePeriod
Heavy truck volume : 272 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 51.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.00 m
Reference angle : 0.00
```

Results segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 55.68 + 0.00) = 55.68 dBA

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

-90	90	0.64	69.58	0.00	-9.76	-1.43	0.00	-2.70
0.00	55.68							

Segment Leq : 55.68 dBA

Results segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 56.64 + 0.00) = 56.64 dBA

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

-90	90	0.64	69.54	0.00	-8.75	-1.43	0.00	-2.73
0.00	56.64							

Segment Leq : 56.64 dBA

Total Leq All Segments: 59.20 dBA

TOTAL Leq FROM ALL SOURCES: 59.20

APPENDIX B.2
STAMSON OUTPUT FILES
FUTURE WITH IMPROVEMENTS

Filename: r1fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 29.20 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.17 m
Barrier receiver distance : 7.30 m
Source elevation : 200.06 m
Receiver elevation : 200.23 m
Barrier elevation : 200.12 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 41.70 m
```



```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 0.19 m
Barrier receiver distance : 7.30 m
Source elevation     : 200.04 m
Receiver elevation   : 200.23 m
Barrier elevation    : 200.12 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.47 !      201.59

```

ROAD (0.00 + 57.42 + 0.00) = 57.42 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.55 68.94  0.00 -4.47 -1.26  0.00  0.00  -
5.78 57.42
-----

```

Segment Leq : 57.42 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.51 !      201.63

```

ROAD (0.00 + 55.15 + 0.00) = 55.15 dBA

```

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

```

-90	90	0.55	68.90	0.00	-6.87	-1.26	0.00	0.00	-
5.63	55.15								

Segment Leq : 55.15 dBA

Total Leq All Segments: 59.44 dBA

TOTAL Leq FROM ALL SOURCES: 59.44

Filename: r2fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1    Angle2 : -90.00 deg    90.00 deg
Wood depth : 0    (No woods.)
No of house rows : 0
Surface : 1    (Absorptive ground
surface)
Receiver source distance : 51.70 m
Receiver height : 1.50 m
Topography : 4    (Elevated; with barrier)
Barrier angle1 : -90.00 deg    Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 1.63 m
Barrier receiver distance : 6.90 m
Source elevation : 200.20 m
Receiver elevation : 198.57 m
Barrier elevation : 199.43 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1    Angle2 : -90.00 deg    90.00 deg
Wood depth : 0    (No woods.)
No of house rows : 0
Surface : 1    (Absorptive ground
surface)
Receiver source distance : 39.20 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 1.63 m
Barrier receiver distance : 6.90 m
Source elevation     : 200.20 m
Receiver elevation   : 198.57 m
Barrier elevation    : 199.43 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.81 !      200.24

```

ROAD (0.00 + 51.95 + 0.00) = 51.95 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.50 68.94  0.00 -8.08 -1.18  0.00  0.00  -
7.74 51.95
-----

```

Segment Leq : 51.95 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      0.86 !      200.29

```

ROAD (0.00 + 53.79 + 0.00) = 53.79 dBA

```

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

```

-90	90	0.50	68.90	0.00	-6.27	-1.18	0.00	0.00	-
7.66	53.79								

Segment Leq : 53.79 dBA

Total Leq All Segments: 55.98 dBA

TOTAL Leq FROM ALL SOURCES: 55.98

Filename: R3FB.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 57.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.18 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.14 m
Reference angle : 0.00
```


Results segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 54.25 + 0.00) = 54.25 dBA

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

-90	90	0.66	68.94	0.00	-9.62	-1.46	0.00	-3.61
0.00	54.25							

Segment Leq : 54.25 dBA

Results segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 52.78 + 0.00) = 52.78 dBA

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

-90	90	0.66	68.90	0.00	-11.11	-1.46	0.00	-3.57
0.00	52.78							

Segment Leq : 52.78 dBA

Total Leq All Segments: 56.59 dBA

TOTAL Leq FROM ALL SOURCES: 56.59

Filename: R4FB.te
Description:

Time Period: 16 hours

Road data, segment # 1: NB

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: NB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.30 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.05 m
Barrier receiver distance : 6.30 m
Source elevation : 200.15 m
Receiver elevation : 200.20 m
Barrier elevation : 201.73 m
Reference angle : 0.00

Road data, segment # 2: SB

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: SB

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 22.40 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.18 m
Barrier receiver distance : 6.30 m
Source elevation : 200.38 m
Receiver elevation : 200.20 m
Barrier elevation : 201.73 m
Reference angle : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.11 ! 1.50 ! -0.11 ! 201.62

```

ROAD (0.00 + 51.03 + 0.00) = 51.03 dBA

```

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

```

```

-----
-90 90 0.55 68.94 0.00 -5.76 -1.27 0.00 0.00 -
10.88 51.03
-----

```

Segment Leq : 51.03 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	-0.09	201.64

ROAD (0.00 + 53.73 + 0.00) = 53.73 dBA

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

-90	90	0.55	68.90	0.00	-2.69	-1.26	0.00	0.00
11.22	53.73							

Segment Leq : 53.73 dBA

Total Leq All Segments: 55.60 dBA

TOTAL Leq FROM ALL SOURCES: 55.60

Filename: R5FB.te
Description:

Time Period: 16 hours

Road data, segment # 1: NB

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: NB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.40 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.95 m
Barrier receiver distance : 4.30 m
Source elevation : 199.48 m
Receiver elevation : 200.43 m
Barrier elevation : 201.11 m
Reference angle : 0.00

Road data, segment # 2: SB

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: SB

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.60 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.46 m
Barrier receiver distance : 4.30 m
Source elevation : 199.97 m
Receiver elevation : 200.43 m
Barrier elevation : 201.11 m
Reference angle : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.11 ! 1.50 ! 0.52 ! 201.63

```

ROAD (0.00 + 55.91 + 0.00) = 55.91 dBA

```

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

```

```

-----
-90 90 0.52 68.94 0.00 -1.70 -1.22 0.00 0.00 -
10.12 55.91
-----

```

Segment Leq : 55.91 dBA

Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	0.71	201.82

ROAD (0.00 + 53.17 + 0.00) = 53.17 dBA

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

-90	90	0.54	68.90	0.00	-5.39	-1.24	0.00	0.00
9.10	53.17							

Segment Leq : 53.17 dBA

Total Leq All Segments: 57.76 dBA

TOTAL Leq FROM ALL SOURCES: 57.76

Filename: R6FB.te

Time Period: 16 hours

Description:

Road data, segment # 1: NB

```

-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 1: NB

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 66.80 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.21 m
Reference angle : 0.00

```

Road data, segment # 2: SB

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: SB

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 51.90 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.27 m

```

Reference angle : 0.00

Segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 54.03 + 0.00) = 54.03 dBA

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

-90	90	0.66	68.94	0.00	-10.77	-1.46	0.00	-2.69
0.00	54.03							

Segment Leq : 54.03 dBA

Segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 55.77 + 0.00) = 55.77 dBA

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

-90	90	0.66	68.90	0.00	-8.95	-1.46	0.00	-2.73
0.00	55.77							

Segment Leq : 55.77 dBA

Total Leq All Segments: 58.00 dBA

TOTAL Leq FROM ALL SOURCES: 58.00

Filename: r7fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.60 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.22 m
Barrier receiver distance : 6.20 m
Source elevation : 198.57 m
Receiver elevation : 198.73 m
Barrier elevation : 200.02 m
Reference angle : 0.00

Road data, segment # 2: sb

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: sb

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.40 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.09 m
Barrier receiver distance : 6.20 m
Source elevation : 198.64 m
Receiver elevation : 198.73 m
Barrier elevation : 200.02 m
Reference angle : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.11 ! 1.50 ! 0.12 ! 200.14

```

ROAD (0.00 + 51.28 + 0.00) = 51.28 dBA

```

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

```

```

-----
-90 90 0.55 68.94 0.00 -6.17 -1.26 0.00 0.00 -
10.24 51.28
-----

```

Segment Leq : 51.28 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	0.08	200.10

ROAD (0.00 + 54.17 + 0.00) = 54.17 dBA

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

-90	90	0.55	68.90	0.00	-2.70	-1.26	0.00	0.00
10.78	54.17							

Segment Leq : 54.17 dBA

Total Leq All Segments: 55.97 dBA

TOTAL Leq FROM ALL SOURCES: 55.97

Filename: r8fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.50 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.47 m
Barrier receiver distance : 5.30 m
Source elevation : 197.72 m
Receiver elevation : 198.19 m
Barrier elevation : 199.29 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
```


Receiver source distance : 33.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
 Barrier height : 2.00 m
 Elevation : 0.45 m
 Barrier receiver distance : 5.30 m
 Source elevation : 197.74 m
 Receiver elevation : 198.19 m
 Barrier elevation : 199.29 m
 Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	0.15	199.44

ROAD (0.00 + 55.26 + 0.00) = 55.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-90	90	0.54	68.94	0.00	-1.40	-1.24	0.00	0.00

B.Adj	SubLeq
11.03	55.26

Segment Leq : 55.26 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	0.27	199.56

ROAD (0.00 + 52.03 + 0.00) = 52.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-90	90	0.54	68.94	0.00	-1.40	-1.24	0.00	0.00

B.Adj	SubLeq
11.03	55.26

```

-----
-----
-90      90      0.54  68.90      0.00  -5.45  -1.25      0.00      0.00  -
10.18  52.03
-----
-----

```

Segment Leq : 52.03 dBA

Total Leq All Segments: 56.95 dBA

TOTAL Leq FROM ALL SOURCES: 56.95

Filename: r9fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 69.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.01 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 60 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 53.80 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.05 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 52.91 + 0.00) = 52.91 dBA

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

-90	90	0.66	68.94	0.00	-11.00	-1.46	0.00	-3.57
0.00	52.91							

Segment Leq : 52.91 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 54.62 + 0.00) = 54.62 dBA

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

-90	90	0.66	68.90	0.00	-9.21	-1.46	0.00	-3.62
0.00	54.62							

Segment Leq : 54.62 dBA

Total Leq All Segments: 56.86 dBA

TOTAL Leq FROM ALL SOURCES: 56.86

Filename: r10fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 56.30 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.91 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 71.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.90 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 55.35 + 0.00) = 55.35 dBA

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

-90	90	0.64	68.94	0.00	-9.45	-1.43	0.00	-2.71
0.00	55.35							

Segment Leq : 55.35 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 53.67 + 0.00) = 53.67 dBA

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

-90	90	0.64	68.90	0.00	-11.13	-1.43	0.00	-2.68
0.00	53.67							

Segment Leq : 53.67 dBA

Total Leq All Segments: 57.60 dBA

TOTAL Leq FROM ALL SOURCES: 57.60

Filename: f11fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 35.90 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.39 m
Barrier receiver distance : 6.50 m
Source elevation : 195.59 m
Receiver elevation : 195.98 m
Barrier elevation : 196.34 m
Reference angle : 0.00

Road data, segment # 2: sb

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: sb

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.41 m
Barrier receiver distance : 6.50 m
Source elevation : 195.57 m
Receiver elevation : 195.98 m
Barrier elevation : 196.34 m
Reference angle : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.11 ! 1.50 ! 1.00 ! 197.34

```

ROAD (0.00 + 54.54 + 0.00) = 54.54 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90 90 0.54 68.94 0.00 -5.84 -1.25 0.00 0.00 -
7.32 54.54
-----

```

Segment Leq : 54.54 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.11	!	1.50	!
		0.88	!
			197.22

ROAD (0.00 + 57.61 + 0.00) = 57.61 dBA

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

-90	90	0.54	68.90	0.00	-1.92	-1.25	0.00	0.00	-
8.12	57.61								

Segment Leq : 57.61 dBA

Total Leq All Segments: 59.35 dBA

TOTAL Leq FROM ALL SOURCES: 59.35

Filename: r12fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 17.50 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.53 m
Barrier receiver distance : 4.40 m
Source elevation : 195.54 m
Receiver elevation : 196.07 m
Barrier elevation : 196.51 m
Reference angle : 0.00

Road data, segment # 2: sb

```

-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

```

Data for Segment # 2: sb

```

-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.20 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.52 m
Barrier receiver distance : 4.40 m
Source elevation : 195.55 m
Receiver elevation : 196.07 m
Barrier elevation : 196.51 m
Reference angle : 0.00

```

Results segment # 1: nb

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.11 ! 1.50 ! 0.83 ! 197.34

```

ROAD (0.00 + 57.71 + 0.00) = 57.71 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90 90 0.54 68.94 0.00 -1.03 -1.24 0.00 0.00 -
8.97 57.71
-----

```

Segment Leq : 57.71 dBA

Results segment # 2: sb

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	0.94	197.45

ROAD (0.00 + 54.19 + 0.00) = 54.19 dBA

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

-90	90	0.54	68.90	0.00	-5.30	-1.24	0.00	0.00
8.17	54.19							

Segment Leq : 54.19 dBA

Total Leq All Segments: 59.31 dBA

TOTAL Leq FROM ALL SOURCES: 59.31

Filename: r13fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 55.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.83 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.45 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 55.50 + 0.00) = 55.50 dBA

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

-90	90	0.65	68.94	0.00	-9.29	-1.43	0.00	-2.72
0.00	55.50							

Segment Leq : 55.50 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 53.92 + 0.00) = 53.92 dBA

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

-90	90	0.63	68.90	0.00	-10.89	-1.40	0.00	-2.68
0.00	53.92							

Segment Leq : 53.92 dBA

Total Leq All Segments: 57.79 dBA

TOTAL Leq FROM ALL SOURCES: 57.79

Filename: r14fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.10 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.77 m
Reference angle : 0.00

Road data, segment # 2: sb

Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: sb

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 49.20 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.13 m
Reference angle : 0.00

Results segment # 1: nb

Source height = 1.11 m

ROAD (0.00 + 54.54 + 0.00) = 54.54 dBA

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

-90	90	0.62	68.94	0.00	-10.32	-1.39	0.00	-2.69
0.00	54.54							

Segment Leq : 54.54 dBA

Results segment # 2: sb

Source height = 1.11 m

ROAD (0.00 + 56.30 + 0.00) = 56.30 dBA

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

-90	90	0.64	68.90	0.00	-8.45	-1.42	0.00	-2.74
0.00	56.30							

Segment Leq : 56.30 dBA

Total Leq All Segments: 58.52 dBA

TOTAL Leq FROM ALL SOURCES: 58.52

Filename: r15fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: nb-traff 1

Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: nb-traff 1

Angle1 Angle2 : -90.00 deg -65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 29.80 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -65.00 deg
Barrier height : 2.00 m
Elevation : 2.35 m
Barrier receiver distance : 3.90 m
Source elevation : 190.48 m
Receiver elevation : 192.83 m
Barrier elevation : 192.76 m
Reference angle : 0.00

Road data, segment # 2: nb-traff 2

Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: nb-traff 2

Angle1 Angle2 : -65.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 29.80 m

Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -65.00 deg Angle2 : 90.00 deg
 Barrier height : 2.00 m
 Elevation : 2.35 m
 Barrier receiver distance : 3.90 m
 Source elevation : 190.48 m
 Receiver elevation : 192.83 m
 Barrier elevation : 192.76 m
 Reference angle : 0.00

Road data, segment # 3: sb-traff 1

 Car traffic volume : 23344 veh/TimePeriod
 Medium truck volume : 361 veh/TimePeriod
 Heavy truck volume : 361 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 1 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: sb-traff 1

 Angle1 Angle2 : -90.00 deg -65.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 48.60 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -65.00 deg
 Barrier height : 2.00 m
 Elevation : 2.54 m
 Barrier receiver distance : 3.90 m
 Source elevation : 190.29 m
 Receiver elevation : 192.83 m
 Barrier elevation : 192.76 m
 Reference angle : 0.00

Road data, segment # 4: sb-traff 1

 Car traffic volume : 31400 veh/TimePeriod
 Medium truck volume : 689 veh/TimePeriod
 Heavy truck volume : 689 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 1 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 4: sb-traff 1

 Angle1 Angle2 : -65.00 deg 90.00 deg
 Wood depth : 0 (No woods.)

```

No of house rows      :      0
Surface               :      1      (Absorptive ground
surface)
Receiver source distance : 48.60 m
Receiver height       : 1.50 m
Topography            :      4      (Elevated; with barrier)
Barrier angle1        : -65.00 deg  Angle2 : 90.00 deg
Barrier height        : 2.00 m
Elevation             : 2.54 m
Barrier receiver distance : 3.90 m
Source elevation       : 190.29 m
Receiver elevation     : 192.83 m
Barrier elevation      : 192.76 m
Reference angle        : 0.00

```

Results segment # 1: nb-traff 1

Source height = 1.10 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.10 !	1.50 !	1.21 !	193.97

ROAD (0.00 + 46.56 + 0.00) = 46.56 dBA

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

-90	-65	0.48	68.92	0.00	-4.42	-12.04	0.00	0.00	-
5.91	46.56								

Segment Leq : 46.56 dBA

Results segment # 2: nb-traff 2

Source height = 1.20 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.20 !	1.50 !	1.22 !	193.98

ROAD (0.00 + 56.80 + 0.00) = 56.80 dBA

Angle1 B.Adj	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-65 7.47	90 56.80	0.48	70.18	0.00	-4.41	-1.50	0.00	0.00

Segment Leq : 56.80 dBA

Results segment # 3: sb-traff 1

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	1.33	194.09

ROAD (0.00 + 43.73 + 0.00) = 43.73 dBA

Angle1 B.Adj	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-90 5.64	-65 43.73	0.48	68.90	0.00	-7.53	-12.00	0.00	0.00

Segment Leq : 43.73 dBA

Results segment # 4: sb-traff 1

Source height = 1.20 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.20	1.50	1.34	194.10

ROAD (0.00 + 55.17 + 0.00) = 55.17 dBA

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

-65	90	0.47	71.01	0.00	-7.52	-1.50	0.00	0.00	-
6.82	55.17								

Segment Leq : 55.17 dBA

Total Leq All Segments: 59.43 dBA

TOTAL Leq FROM ALL SOURCES: 59.43

Filename: r16fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 75.50 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.43 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 59.50 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.90 m
Reference angle : 0.00
```

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 54.44 + 0.00) = 54.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
--------	--------	-------	--------	-------	-------	-------	-------	-------

B.Adj	SubLeq
-------	--------

-90	90	0.66	70.18	0.00	-11.62	-1.45	0.00	-2.67
0.00	54.44							

Segment Leq : 54.44 dBA

Results segment # 2: sb

Source height = 1.20 m

ROAD (0.00 + 57.05 + 0.00) = 57.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
--------	--------	-------	--------	-------	-------	-------	-------	-------

B.Adj	SubLeq
-------	--------

-90	90	0.64	71.01	0.00	-9.83	-1.43	0.00	-2.70
0.00	57.05							

Segment Leq : 57.05 dBA

Total Leq All Segments: 58.95 dBA

TOTAL Leq FROM ALL SOURCES: 58.95

Filename: r17fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 52.40 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.38 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 68.70 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.19 m
Reference angle : 0.00
```

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 57.47 + 0.00) = 57.47 dBA

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

-90	90	0.66	70.65	0.00	-9.00	-1.45	0.00	-2.73
0.00	57.47							

Segment Leq : 57.47 dBA

Results segment # 2: sb

Source height = 1.20 m

ROAD (0.00 + 56.36 + 0.00) = 56.36 dBA

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

-90	90	0.66	71.47	0.00	-10.97	-1.46	0.00	-2.69
0.00	56.36							

Segment Leq : 56.36 dBA

Total Leq All Segments: 59.96 dBA

TOTAL Leq FROM ALL SOURCES: 59.96

Filename: r18fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 18.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Elevation : 0.75 m
Barrier receiver distance : 5.50 m
Source elevation : 185.42 m
Receiver elevation : 186.17 m
Barrier elevation : 186.64 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 33.50 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.20 m
Elevation            : 0.52 m
Barrier receiver distance : 5.50 m
Source elevation     : 185.65 m
Receiver elevation   : 186.17 m
Barrier elevation    : 186.64 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.71 !       187.35

```

ROAD (0.00 + 57.97 + 0.00) = 57.97 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.51  70.18   0.00  -1.20  -1.20   0.00   0.00  -
9.81  57.97
-----
-----

```

Segment Leq : 57.97 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.90 !       187.54

```

ROAD (0.00 + 55.80 + 0.00) = 55.80 dBA

```

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

```

-90	90	0.52	71.01	0.00	-5.31	-1.21	0.00	0.00	-
8.68	55.80								

Segment Leq : 55.80 dBA

Total Leq All Segments: 60.03 dBA

TOTAL Leq FROM ALL SOURCES: 60.03

Filename: r19fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 35.60 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.40 m
Elevation : 0.07 m
Barrier receiver distance : 6.70 m
Source elevation : 184.54 m
Receiver elevation : 184.61 m
Barrier elevation : 185.18 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 20.30 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.40 m
Elevation            : 0.12 m
Barrier receiver distance : 6.70 m
Source elevation     : 184.73 m
Receiver elevation   : 184.61 m
Barrier elevation    : 185.18 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.86 !          186.04

```

ROAD (0.00 + 54.18 + 0.00) = 54.18 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.52  70.18   0.00  -5.72  -1.22   0.00   0.00  -
9.07  54.18
-----

```

Segment Leq : 54.18 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.87 !          186.05

```

ROAD (0.00 + 58.27 + 0.00) = 58.27 dBA

```

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

```

-90	90	0.52	71.01	0.00	-2.00	-1.21	0.00	0.00	-
9.52	58.27								

Segment Leq : 58.27 dBA

Total Leq All Segments: 59.70 dBA

TOTAL Leq FROM ALL SOURCES: 59.70

Filename: r20fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 51.30 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 63.60 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: nb

Source height = 1.20 m

ROAD (0.00 + 57.13 + 0.00) = 57.13 dBA

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

-90	90	0.66	70.18	0.00	-8.86	-1.46	0.00	-2.73
0.00	57.13							

Segment Leq : 57.13 dBA

Results segment # 2: sb

Source height = 1.20 m

ROAD (0.00 + 56.44 + 0.00) = 56.44 dBA

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

-90	90	0.66	71.01	0.00	-10.41	-1.46	0.00	-2.69
0.00	56.44							

Segment Leq : 56.44 dBA

Total Leq All Segments: 59.81 dBA

TOTAL Leq FROM ALL SOURCES: 59.81

Filename: r21fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 32.30 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Elevation : 0.32 m
Barrier receiver distance : 3.40 m
Source elevation : 182.64 m
Receiver elevation : 182.96 m
Barrier elevation : 183.08 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 17.10 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.20 m
Elevation            : 0.31 m
Barrier receiver distance : 3.40 m
Source elevation     : 182.65 m
Receiver elevation   : 182.96 m
Barrier elevation    : 183.08 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       1.32 !       184.40

```

ROAD (0.00 + 55.99 + 0.00) = 55.99 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.53  70.18   0.00  -5.09  -1.23   0.00   0.00  -
7.88  55.99
-----
-----

```

Segment Leq : 55.99 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       1.26 !       184.34

```

ROAD (0.00 + 60.53 + 0.00) = 60.53 dBA

```

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

```

-90	90	0.53	71.01	0.00	-0.87	-1.23	0.00	0.00	-
8.38	60.53								

Segment Leq : 60.53 dBA

Total Leq All Segments: 61.84 dBA

TOTAL Leq FROM ALL SOURCES: 61.84

Filename: r22fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: nb

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: nb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 20.80 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.99 m
Barrier receiver distance : 5.30 m
Source elevation : 181.83 m
Receiver elevation : 182.82 m
Barrier elevation : 183.32 m
Reference angle : 0.00
```

Road data, segment # 2: sb

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: sb

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 36.00 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.00 m
Elevation            : 1.02 m
Barrier receiver distance : 5.30 m
Source elevation     : 181.81 m
Receiver elevation   : 182.82 m
Barrier elevation    : 183.32 m
Reference angle      : 0.00

```

Results segment # 1: nb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.67 !       183.99

```

ROAD (0.00 + 57.68 + 0.00) = 57.68 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.52 70.18  0.00 -2.16 -1.21  0.00  0.00  -
9.13  57.68
-----

```

Segment Leq : 57.68 dBA

Results segment # 2: sb

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !       1.50 !       0.81 !       184.13

```

ROAD (0.00 + 55.71 + 0.00) = 55.71 dBA

```

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

```

-90	90	0.52	71.01	0.00	-5.77	-1.21	0.00	0.00	-
8.32	55.71								

Segment Leq : 55.71 dBA

Total Leq All Segments: 59.82 dBA

TOTAL Leq FROM ALL SOURCES: 59.82

Filename: r23fb.te
Description:

Time Period: 16 hours

Road data, segment # 1: NB

Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: NB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 34.30 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.40 m
Elevation : 0.71 m
Barrier receiver distance : 4.00 m
Source elevation : 182.13 m
Receiver elevation : 182.84 m
Barrier elevation : 183.17 m
Reference angle : 0.00

Road data, segment # 2: SB

Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: SB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 18.10 m

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.40 m
Elevation            : 0.79 m
Barrier receiver distance : 4.00 m
Source elevation     : 181.05 m
Receiver elevation   : 182.84 m
Barrier elevation    : 183.17 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          1.05 !          184.22

```

ROAD (0.00 + 54.13 + 0.00) = 54.13 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.50  70.18   0.00  -5.40  -1.18   0.00   0.00  -
9.47  54.13
-----
-----

```

Segment Leq : 54.13 dBA

Results segment # 2: SB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !          1.50 !          0.71 !          183.88

```

ROAD (0.00 + 57.53 + 0.00) = 57.53 dBA

```

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

```

-90	90	0.50	71.01	0.00	-1.22	-1.18	0.00	0.00	-
11.07	57.53								

Segment Leq : 57.53 dBA

Total Leq All Segments: 59.16 dBA

TOTAL Leq FROM ALL SOURCES: 59.16

Filename: R24FB.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 25989 veh/TimePeriod
Medium truck volume : 570 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 44.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Elevation : 0.39 m
Barrier receiver distance : 5.80 m
Source elevation : 184.50 m
Receiver elevation : 184.11 m
Barrier elevation : 184.95 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 31400 veh/TimePeriod
Medium truck volume : 689 veh/TimePeriod
Heavy truck volume : 689 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 25.70 m
```

```

Receiver height      :    1.50 m
Topography           :         4      (Elevated; with barrier)
Barrier angle1       :   -90.00 deg   Angle2 : 90.00 deg
Barrier height       :    2.00 m
Elevation            :    0.28 m
Barrier receiver distance :    5.80 m
Source elevation     :   184.39 m
Receiver elevation   :   184.11 m
Barrier elevation    :   184.95 m
Reference angle      :    0.00

```

Results segment # 1: NB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !         1.50 !         0.67 !         185.62

```

ROAD (0.00 + 53.21 + 0.00) = 53.21 dBA

```

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj
B.Adj SubLeq
-----
-90    90    0.54  70.18   0.00  -7.18  -1.24   0.00   0.00  -
8.54  53.21
-----

```

Segment Leq : 53.21 dBA

Results segment # 2: SB

Source height = 1.20 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.20 !         1.50 !         0.66 !         185.61

```

ROAD (0.00 + 57.28 + 0.00) = 57.28 dBA

```

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

```

-90	90	0.54	71.01	0.00	-3.60	-1.25	0.00	0.00	-
8.87	57.28								

Segment Leq : 57.28 dBA

Total Leq All Segments: 58.72 dBA

TOTAL Leq FROM ALL SOURCES: 58.72

Filename: r25fb2.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 44.10 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.50 m
Elevation : 0.25 m
Barrier receiver distance : 5.00 m
Source elevation : 205.00 m
Receiver elevation : 204.75 m
Barrier elevation : 204.80 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground
surface)
Receiver source distance : 55.40 m
```

```

Receiver height      : 1.50 m
Topography           : 4      (Elevated; with barrier)
Barrier angle1       : -90.00 deg   Angle2 : 90.00 deg
Barrier height       : 2.50 m
Elevation            : 0.25 m
Barrier receiver distance : 5.00 m
Source elevation     : 204.50 m
Receiver elevation   : 204.75 m
Barrier elevation    : 204.80 m
Reference angle      : 0.00

```

Results segment # 1: NB

Source height = 1.11 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver ! Barrier   ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.11 !      1.50 !      1.43 !      206.23

```

ROAD (0.00 + 54.64 + 0.00) = 54.64 dBA

```

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

```

```

-----
-90    90    0.51  70.82   0.00  -7.09  -1.20   0.00   0.00  -
7.88  54.64
-----
-----

```

Segment Leq : 54.64 dBA

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Results segment # 2: SB

Source height = 1.11 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.11	1.50	1.39	206.19

ROAD (0.00 + 53.00 + 0.00) = 53.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
-90	90	0.51	70.78	0.00	-8.59	-1.20	0.00	0.00
7.99	53.00							

Segment Leq : 53.00 dBA

Total Leq All Segments: 56.91 dBA

TOTAL Leq FROM ALL SOURCES: 56.91

Filename: r26fb.te
 Description:

Time Period: 16 hours

Road data, segment # 1: NB

```
-----
Car traffic volume : 23536 veh/TimePeriod
Medium truck volume : 364 veh/TimePeriod
Heavy truck volume : 364 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: NB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 70 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.80 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 1.00 m
Reference angle : 0.00
```

Road data, segment # 2: SB

```
-----
Car traffic volume : 23344 veh/TimePeriod
Medium truck volume : 361 veh/TimePeriod
Heavy truck volume : 361 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 3 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 2: SB

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1
House density : 70 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 48.30 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.50 m
Reference angle : 0.00
```

Results segment # 1: NB

Source height = 1.11 m

ROAD (0.00 + 54.82 + 0.00) = 54.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
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B.Adj	SubLeq
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-90	90	0.64	70.82	0.00	-9.98	-1.43	0.00	-4.60
0.00	54.82							

Segment Leq : 54.82 dBA

Results segment # 2: SB

Source height = 1.11 m

ROAD (0.00 + 56.28 + 0.00) = 56.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj
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B.Adj	SubLeq
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-90	90	0.66	70.78	0.00	-8.41	-1.45	0.00	-4.64
0.00	56.28							

Segment Leq : 56.28 dBA

Total Leq All Segments: 58.62 dBA

TOTAL Leq FROM ALL SOURCES: 58.62