

ENVIRONMENTAL NOISE IMPACT STUDY

“559 GARNER ROAD EAST”
“RESIDENTIAL DEVELOPMENT”
LOCATED AT 559 GARNER ROAD EAST
ANCASTER ON

Prepared for:

Garner South MD Developments Inc.
102-3410 South Service Road
Burlington ON
L7N 3T2

Prepared By:



Frank Westaway, Owner
Acoustical Consultant

June 2021

Our File No: 21-2139

dBA ACOUSTICAL CONSULTANTS INC.
P.O Box 32059
1447 Upper Ottawa St.
Hamilton ON
L8W 3K0

TABLE OF CONTENTS

| | |
|--|--------|
| 1.0 INTRODUCTION..... | Page 3 |
| 2.0 SITE DESCRIPTION..... | Page 3 |
| 3.0 NOISE IMPACT ASSESSMENT..... | Page 3 |
| 3.1 Noise Criteria..... | Page 3 |
| 3.2 Road Noise..... | Page 4 |
| 4.0 RECOMMENDATIONS NOISE CONTROL..... | Page 5 |
| 4.1 Outdoor Living Areas..... | Page 5 |
| 4.2 Indoor Noise Levels..... | Page 5 |
| 5.0 VENTILATION/WARNING CLAUSES..... | Page 7 |
| 6.0 SUMMARY OF RECOMMENDATIONS..... | Page 7 |
| 7.0 CONCLUSIONS..... | Page 8 |
| FIGURE 1 – Key Plan | |
| FIGURE 2 – Site Plan | |
| FIGURE 3 – Receptor Locations | |
| Appendix “A” | |
| City of Hamilton Traffic Data | |
| Stamson Calculation Sheets | |

1.0 INTRODUCTION

dBA Acoustical Consultants Inc. has conducted an environmental noise impact study for Garner South MD Developments Inc. for 559 Garner Road East for the proposed 6 storey residential apartment building located at 559 Garner Road East, Ancaster ON. See Figure 1 Key Plan.

The purpose of the study is to determine the noise impact from Garner Road East and Southcote Road Ancaster ON relative to the proposed 6 storey apartment building located at 559 Garner Road East, Ancaster ON. Total residential units for the site development are 95 residential units.

This noise study will detail noise impact relative to the proposed site plan and recommend noise control measures necessary (if applicable) to meet MOE guidelines while satisfying the planning requirements of the City of Hamilton.

Vibration is not considered as there are no heavy industrial operations near the proposed development. Aircraft is not a concern as the development is located outside the NEF 25 contour of the area. See Figure 1 Key Plan.

2.0 SITE DESCRIPTION

The proposed 6 storey residential apartment development is in an area largely comprised of existing open fields to the south, west, and existing 2-storey residential properties to the north and northeast & northwest of Southcote Road. Garner Road East is located approximately 22m to the southeast and Southcote Road is located approximately 24m to the northwest of the proposed development. See Figure 2 Site Plan.

3.0 NOISE IMPACT ASSESSMENT

3.1 NOISE CRITERIA

The Ministry of Environment (MOE) specifies limits for road noise relative to new residential developments. The MOE Publication 300, Stationary & Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

| TABLE 1 - Road Traffic Sound Levels Limits | |
|--|----------------------------------|
| Time Period | L _{eq} (dBA) |
| 07:00 – 23:00 (16 hr.) | 55 Outdoor Living Area (OLA) |
| 23:00 – 07:00 (8 hr.) | 50 Plane of Bedroom Window (POW) |

The OLA refers to an outdoor patio, a backyard, a terrace or other area where outdoor passive recreation is expected to occur on the residential property. Noise levels are calculated at the upper storey bedroom window to represent nighttime (23:00 - 07:00) periods.

Where noise levels estimated in the Outdoor Living Area (OLA) and at an upper storey window (POW) are equal to or less than the values listed in Table 1, no noise control measures are required. Where noise levels exceed Table 1 values, the following action is required:

| TABLE 2 –Noise Control Requirements | | |
|-------------------------------------|-----------------------|---------------------------------------|
| Time Period | Noise Level Leq (dBA) | Action Required |
| 07:00 - 23:00 Daytime (OLA) | 55 to 60 | Barrier or Warning Clause Type “A” |
| 07:00 - 23:00 Daytime (OLA) | > 60 | Barrier & Warning Clause Type “B” |
| 07:00 – 23:00 Daytime (POW) | >55 | Provision for A/C, Warning Clause “C” |
| 07:00 – 23:00 Daytime (POW) | >65 | Central A/C, Warning Clause “D” |
| 07:00 – 23:00 Daytime (POW) | >65 | Building Component Specification |

| | | |
|--------------------------------|---------|--|
| 23:00 to 07:00 Nighttime (POW) | > 50-60 | Provision for A/C and Warning Clause Type "C" |
| 23:00 to 07:00 Nighttime (POW) | > 60 | Building Component Specification |
| | > 60 | Central Air Conditioning and Warning Clause Type "D" |

Where nighttime noise levels exceed 60 dBA, building components must be designed to meet the following Table 3 indoor sound level limits.

| TABLE 3 - Indoor Road Sound Levels Limits | |
|---|-----------|
| Indoor Location | Leq (dBA) |
| | Road |
| Living/Dining 7:00 – 23:00 | 45 |
| Bedroom 23:00 - 07:00 | 40 |

3.2 ROAD NOISE

Predicted road traffic noise levels were calculated for Garner Road East and Southcote Road, the major road noise sources in the site area. Road traffic volumes were sourced from the *City of Hamilton Traffic Engineering Website*, relative to the roadways. MOE computer program STAMSON version 5.04 was used to carry out prediction calculations. (See Appendix "A"). Traffic data is summarized in Table 4.

The daytime/nighttime volume ratio relative for both Garner Road East and Southcote Road roadways are calculated using a 90/10 split and a 16/8-hour assessment as required by the MOE. The maximum posted speeds for Garner Road East vehicles is 60 km/hr. Southcote Road all vehicles is 50 km/hr. The percentage of annual growth for both roadways was figured at 2.0% over 13 years. The 2018 AADT (Annual Average Daily Traffic) volumes were used for both Garner Road East and Southcote Road, reflective of the worst-case scenario. Truck volumes were factored at 2% medium and 2% heavy of the total vehicle volumes for Garner Road East and 1.5% medium and 1.5% heavy for Southcote Road. Table 4 following is the forecasted traffic volumes used in the report.

Garner Road East is a 2-lane roadway with north and south turning lanes and Southcote Road is a 2-lane roadway with an eastbound turning lane.

| TABLE 4 – Future Road Traffic Volumes (Year 2031) | | | |
|---|---------------------|---------------|--------------|
| Garner Road East | AADT 22747 Vehicles | | |
| | Cars | Medium Trucks | Heavy Trucks |
| Day | 19653 | 409 | 409 |
| Night | 2184 | 45 | 45 |
| Southcote Road | AADT 8103 Vehicles | | |
| | Cars | Medium Trucks | Heavy Trucks |
| Day | 7074 | 109 | 109 |
| Night | 786 | 12 | 12 |

Table 5 summarizes the combined "free field" traffic noise prediction results, modeled at 4 receptor locations and representative of building facades throughout the proposed development. (See Figure 3 Receptor Locations)

| TABLE 5 – Predicted COMBINED Future Traffic Noise (dBA) | | |
|---|---------------|---------------|
| Location | 07:00 – 23:00 | 23:00 – 07:00 |
| R1- 1 st Floor Residential South Facade | 64 | 64 |
| R2- 5 th Floor Residential South Facade | 66 | 66 |

| TABLE 5 – Predicted COMBINED Future Traffic Noise (dBA) | | |
|---|----|-----|
| R3- 1 st Floor Residential South Facade | 61 | 61 |
| R4- 5 th Floor Residential South Facade | 62 | 62 |
| R5- 1 st Floor Residential Northwest Facade | 58 | 58 |
| R6- 5 th Floor Residential Northwest Facade | 60 | 60 |
| R7- 5 th Floor Rooftop Terrace | 50 | N/A |

1) 6.5m Receiver Height – 1st floor (2) 19.0m Receiver Height – 5th floor

4.0 RECOMMENDATIONS - NOISE CONTROL

4.1 OUTDOOR LIVING AREAS

Calculated road noise levels exceed the 55 dBA daytime criteria outlined in Table 1 for entire apartment building. The proposed apartment building has standard balconies that are less than 4m in depth and therefore are not considered OLA’s as defined by the MOE. The rooftop terrace levels exceed the 55 dBA daytime criteria outlined in Table 1 and therefore requires a 1.883m safety glass railing or equivalent to achieve the noise criteria.

In compliance with MOE guidelines, a noise barrier or equivalent (Safety Glass Railing) must have a minimum surface density of 20kg/m² and be designed and constructed without cracks or gaps. Any gaps under the noise barrier that are necessary for drainage purposes must be minimized (2”) and localized and must not deteriorate acoustical performance. (See Figure 4, Noise Barrier Location)

4.2 INDOOR NOISE LEVELS

Calculated road noise levels at the Plane of Window (POW) exceed the 50 dBA criteria outlined in Table 1 for indoor space for specific units. Specific building components (walls, windows, doors etc.) are required and confirmed using the STC (Sound Transmission Class) methods.

Building design specifications were not made available at report time and calculations for the STC (Sound Transmission Class) method, are summarized in Table 6 following with minimum window door and wall construction specified for specific units throughout the development.

The STC values are calculated for each room type, based on typical window to floor ratios of 20% for bedrooms and 30% for living room areas. Wall to floor ratio was factored at 80%. A maximum of two components were factored per room.

Typically, the STC-26 is the lowest acoustically rated window configuration supplied therefore it is recommended all windows throughout the development should be the same as a cost saving method.

| TABLE 6 – Recommended Door, Wall, and Window Construction | | | |
|---|-------------------|------|-------------------|
| LOCATION | STC To Be Used | Wall | Door Construction |
| ALL UNITS | | | |
| Bedroom | 28 | EW-2 | OBC |
| Living room | 28 | EW-2 | OBC |

* First number denotes glass thickness, followed by spacing, and thickness of second pane. OBC denotes minimum requirements of the Ontario Building Code will suffice. Recommendations assume windows are well-fitted, weather-stripped units that can be opened. No slider windows only casement.

5.0 VENTILATION / WARNING CLAUSES

Ventilation and warning clause requirements for the entire apartment building are required for this development. The development has proposed central air conditioning for this development. The rooftop mechanical room for the central air equipment is enclosed and will not have an acoustical impact on the area residents.

| TABLE 7 - Ventilation and Warning Clause Requirements | | |
|---|--------------------------|----------------|
| LOCATION | VENTILATION | WARNING CLAUSE |
| All Residential Units | Central Air Conditioning | Type "A" & "D" |

TYPE A:

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality's and the Ministry of the Environment's noise criteria."

TYPE D:

"This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality's and the Ministry of the Environment's noise criteria."

6.0 SUMMARY OF RECOMMENDATIONS

The following noise control measures are required to satisfy the indoor and outdoor noise level criterion:

- A/C & Central Air for specific units recommended in Table 7.
- Window, Door, and Wall construction recommended in Table 6.
- Qualified Acoustical Consultant certifies that the required noise control measures have been incorporated into the builder's plans prior to issuance of a building permit.
- Prior to issuance of an occupancy permit or equivalent, it is recommended the Qualified Acoustical Consultant certify that the approved noise control measures have been professionally installed.

7.0 CONCLUSIONS

dBA Acoustical Consultants Inc. has conducted an environmental noise impact study for Garner South MD Developments Inc. for 559 Garner Road East for the proposed 6 storey residential apartment building located at 559 Garner Road East, Ancaster This noise study detailed noise impact relative to the proposed site plan and recommend noise control measures necessary to meet MOE guidelines while satisfying the planning requirements of the City of Hamilton.

Vibration is not considered as there are no heavy industrial operations near the proposed development. Aircraft is not a concern as the development is located outside the NEF 25 contour of the area.

FIGURE 1
KEY PLAN

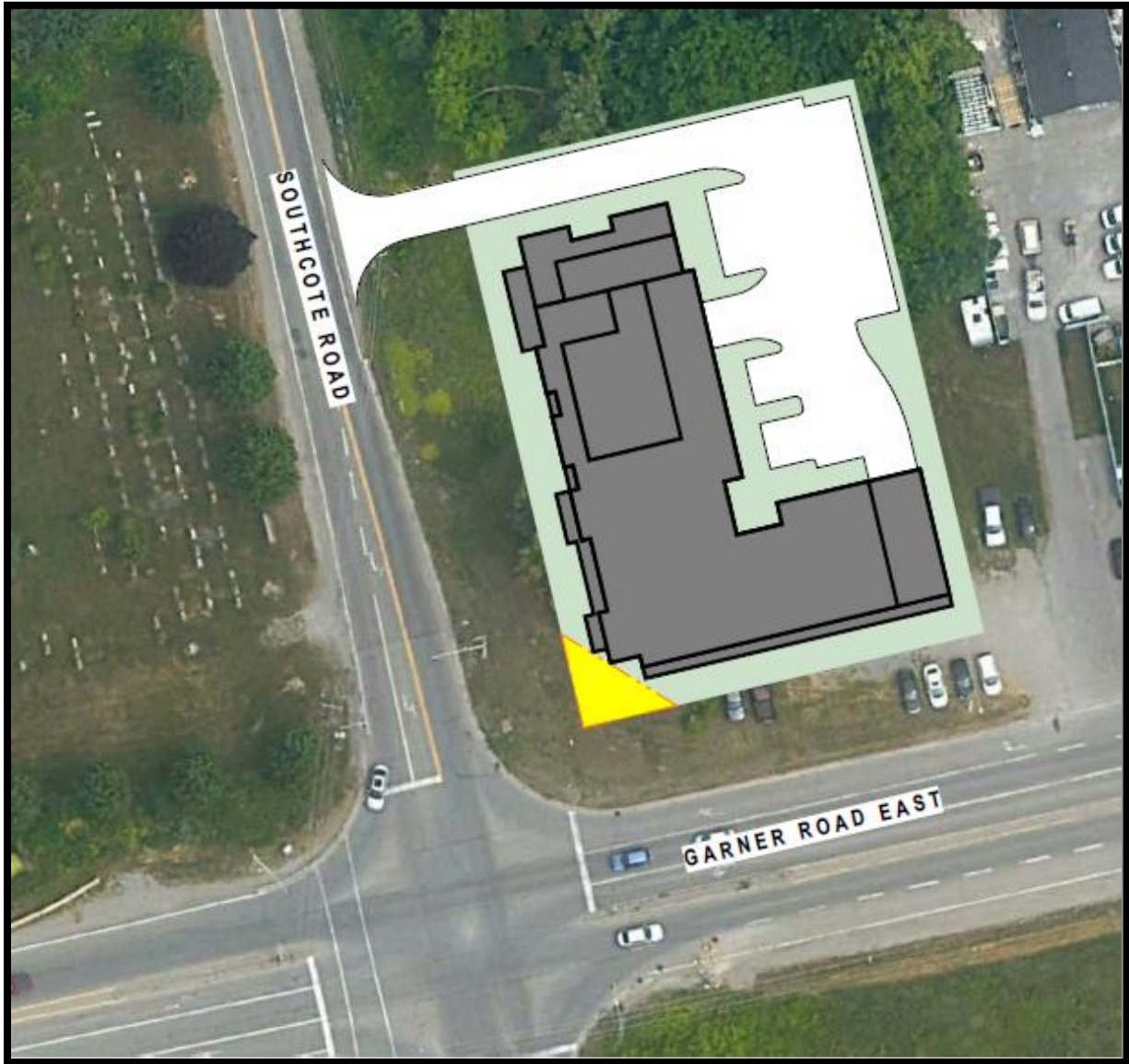


FIGURE 2
SITE PLAN

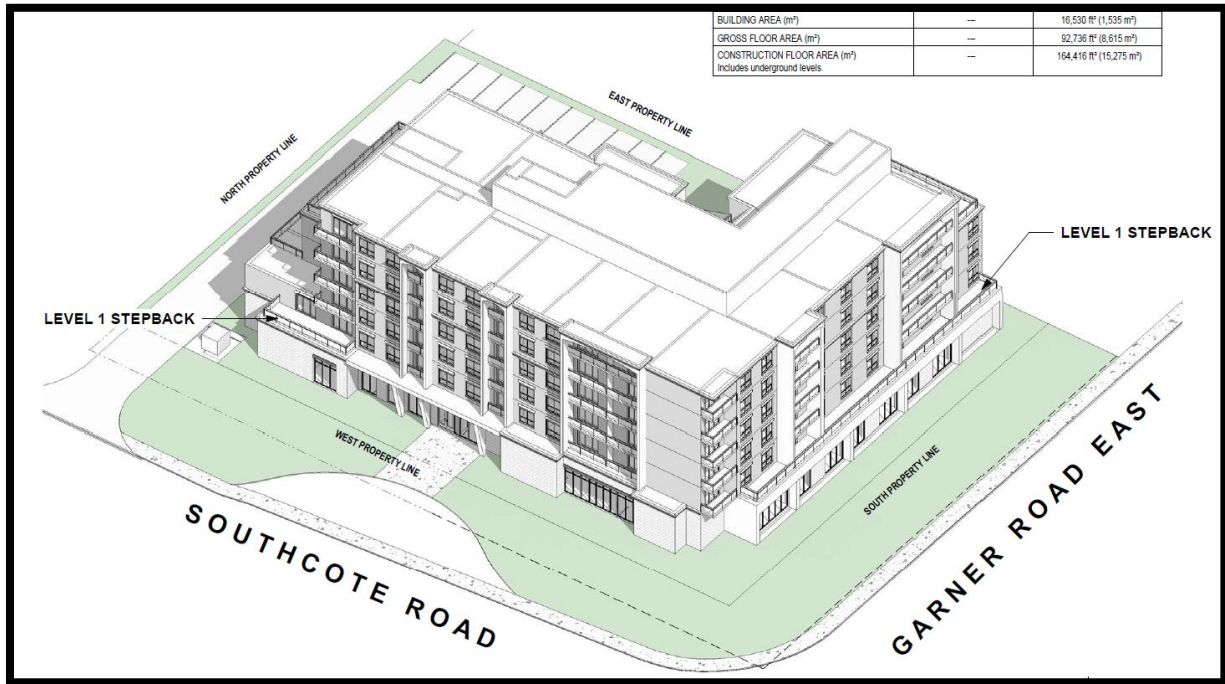
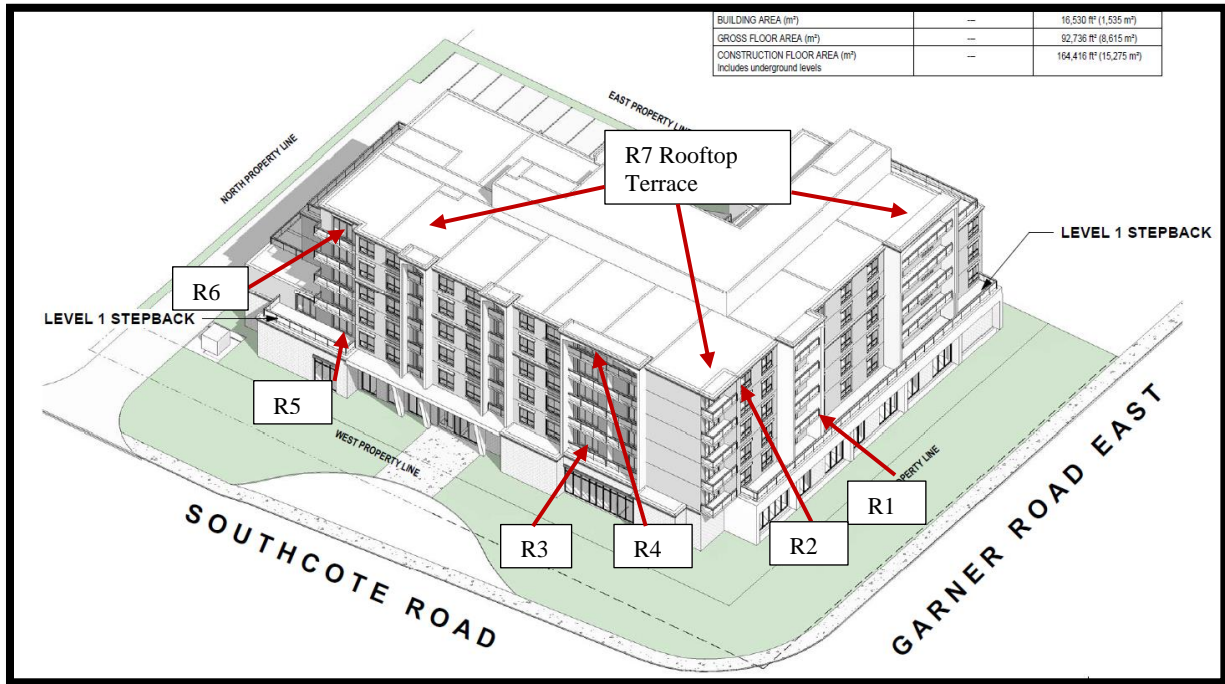
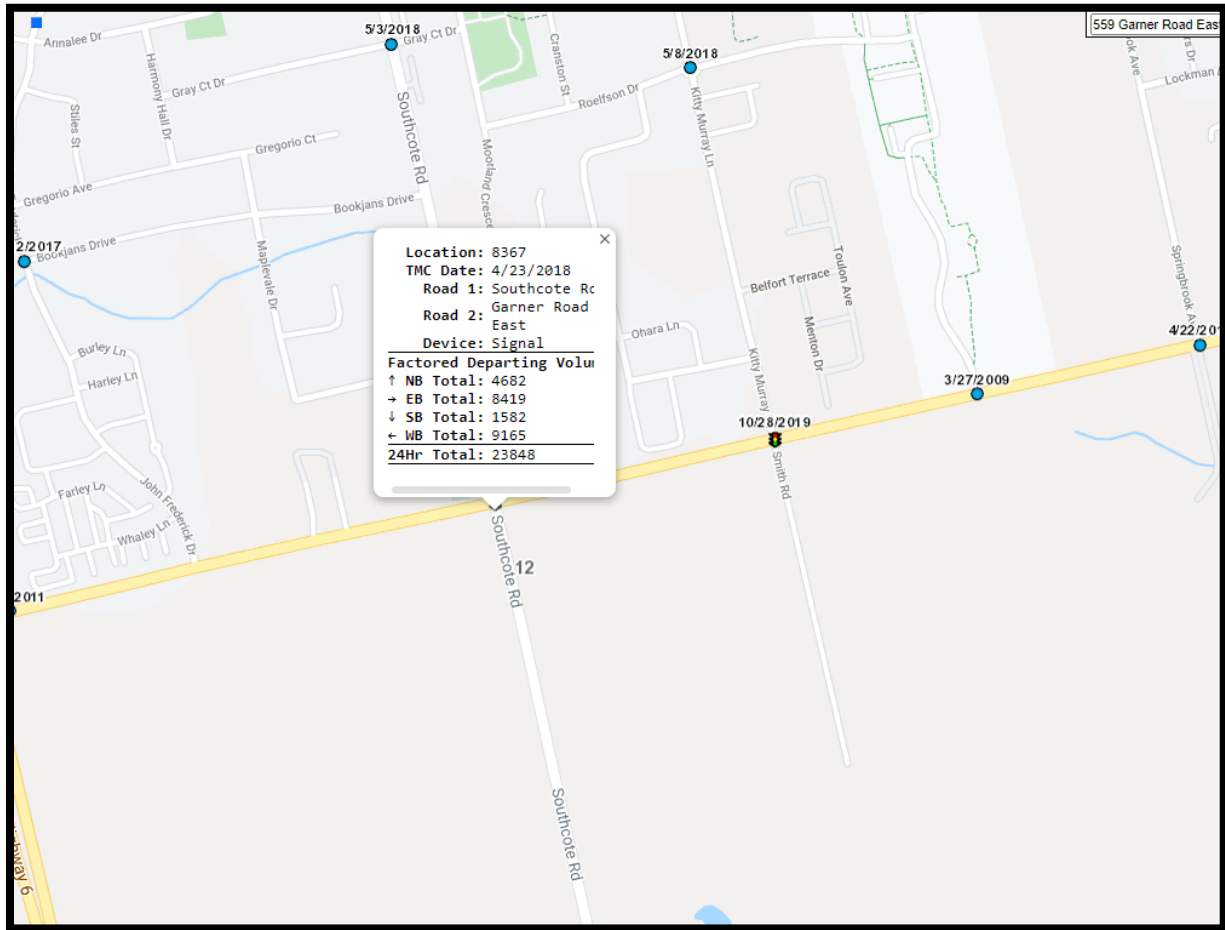


FIGURE 3
 RECEPTOR LOCATIONS



City of Hamilton Traffic Data 2018



Hamilton
TCDS User Guide Help MS2
Transportation Data Management System

Home TMC TCLS TTDS PMS RSMS NMDS WOTS RTTV

Login + Locate + Locate All

Auto-Locate OFF

STAMSON CALCULATIONS

STAMSON 5.04 SUMMARY REPORT Date: 15-06-2021 21:31:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R1South.te Time Period: Day/Night 16/8 hours
Description: R1- 1st floor residential south facade

TOTAL Leq FROM ALL SOURCES

(DAY): 64.48
(NIGHT): 64.49

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 63.80 ! 63.80
2.Southcote Rd ! 1.11 ! 56.08 ! 56.08

Total 64.48 dBA

Result summary (night)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 63.81 ! 63.81
2.Southcote Rd ! 1.11 ! 56.10 ! 56.10

Total 64.49 dBA

STAMSON 5.0 SUMMARY REPORT Date: 15-06-2021 21:35:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2south.te Time Period: Day/Night 16/8 hours
Description: R2- 5th floor residential southwest facade

TOTAL Leq FROM ALL SOURCES

(DAY) : 65.94
(NIGHT) : 65.95

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

| | ! source ! | Road ! | Total ! |
|----------------|------------|---------|-----------|
| | ! height ! | Leq ! | Leq ! |
| | ! (m) ! | (dBA) ! | (dBA) ! |
| 1.Garner Rd E | ! 1.19 ! | 65.23 ! | 65.23 |
| 2.Southcote Rd | ! 1.11 ! | 57.72 ! | 57.72 |
| Total | | | 65.94 dBA |

Result summary (night)

| | ! source ! | Road ! | Total ! |
|----------------|------------|---------|-----------|
| | ! height ! | Leq ! | Leq ! |
| | ! (m) ! | (dBA) ! | (dBA) ! |
| 1.Garner Rd E | ! 1.19 ! | 65.24 ! | 65.24 |
| 2.Southcote Rd | ! 1.11 ! | 57.75 ! | 57.75 |
| Total | | | 65.95 dBA |

STAMSON 5.0 SUMMARY REPORT Date: 15-06-2021 21:40:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3south.te Time Period: Day/Night 16/8 hours
Description: R3- 1st floor residential west facade

TOTAL Leq FROM ALL SOURCES

(DAY) : 60.62
(NIGHT) : 60.63

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)

| | ! source ! | Road ! | Total ! |
|----------------|------------|---------|-----------|
| | ! height ! | Leq ! | Leq ! |
| | ! (m) ! | (dBA) ! | (dBA) ! |
| 1.Garner Rd E | ! 1.19 ! | 58.74 ! | 58.74 |
| 2.Southcote Rd | ! 1.11 ! | 56.08 ! | 56.08 |
| Total | | | 60.62 dBA |

Result summary (night)

| | ! source ! | Road ! | Total ! |
|----------------|------------|---------|-----------|
| | ! height ! | Leq ! | Leq ! |
| | ! (m) ! | (dBA) ! | (dBA) ! |
| 1.Garner Rd E | ! 1.19 ! | 58.75 ! | 58.75 |
| 2.Southcote Rd | ! 1.11 ! | 56.10 ! | 56.10 |
| Total | | | 60.63 dBA |

STAMSON 5.0 SUMMARY REPORT Date: 15-06-2021 21:42:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4south.te Time Period: Day/Night 16/8 hours
Description: R4- 5th floor residential west facade

TOTAL Leq FROM ALL SOURCES

(DAY) : 62.46
(NIGHT) : 62.47

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 60.68 ! 60.68
2.Southcote Rd ! 1.11 ! 57.72 ! 57.72

Total 62.46 dBA

Result summary (night)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 60.69 ! 60.69
2.Southcote Rd ! 1.11 ! 57.75 ! 57.75

Total 62.47 dBA

STAMSON 5.0 SUMMARY REPORT Date: 15-06-2021 21:57:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6south.te Time Period: Day/Night 16/8 hours
Description: R6 5th Floor Northwest free field

TOTAL Leq FROM ALL SOURCES (DAY): 59.88
(NIGHT): 59.90

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 19.00 / 19.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 55.81 ! 55.81
2.Southcote Rd ! 1.11 ! 57.72 ! 57.72

Total 59.88 dBA

Result summary (night)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 55.82 ! 55.82
2.Southcote Rd ! 1.11 ! 57.75 ! 57.75

Total 59.90 dBA

STAMSON 5.0 SUMMARY REPORT Date: 15-06-2021 22:07:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7south.te Time Period: Day/Night 16/8 hours
Description: **R7 Rooftop Terrace with 1.83m safety glass railing**
TOTAL Leq FROM ALL SOURCES (DAY): 50.23 (Rooftop Terrace)
(NIGHT): 47.33

Road data, segment # 1: Garner Rd E (day/night)

Car traffic volume : 14558/7279 veh/TimePeriod
Medium truck volume : 303/152 veh/TimePeriod
Heavy truck volume : 303/152 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Garner Rd E (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 m
Receiver height : 19.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 1.83 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 19.00 m
Reference angle : 0.00

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

Car traffic volume : 5240/2620 veh/TimePeriod
Medium truck volume : 81/41 veh/TimePeriod
Heavy truck volume : 81/41 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Southcote Rd (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 19.00 / 19.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 1.83 m
Barrier receiver distance : 3.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 19.00 m
Reference angle : 0.00

Result summary (day)

! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)

1.Garner Rd E ! 1.19 ! 49.52 ! 49.52
2.Southcote Rd ! 1.11 ! 42.03 ! 42.03

Total 50.23 dBA