



December 13, 2019

ND Landco Inc.
226 Boida Avenue
Ayr, ON N0B 1E0

Attention: Mr. Chris Isley

Dear Mr. Isley,

**Re: Noise Brief
N.D. Landco Ayr, 1940 Wrigley Road (RR 49)
Township of North Dumfries**

This Noise Brief has been completed for the above-noted project in support of Zone Change and Draft Plan Approval. The proposed subdivision is located on Scott Street across from Hilltop Drive at the west side of Ayr in the Township of North Dumfries. The 8.75 hectare site is a former gravel pit that is being rehabilitated in preparation for residential development.

Preliminary noise modeling was completed using Scott Street/Wrigley Road as the noise source. Traffic numbers in 2028 have been estimated at 2,600 vehicles/day (AADT) as per the attached document provided by the Region of Waterloo. As the STAMSON modeling software has a minimum number of vehicles-per-hour, the AADT was conservatively increased to 3,300 to allow the modeling to run. Speed limits were modeled at 80 km/hr, which is conservative as the speed limit is 50 km/hr directly in front of the site and increases to 80 km/hr at the east property line.

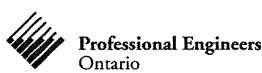
The required distances from the centerline of the road to the nearest point of the building required to meet all noise objectives such that no noise control measures are required are:

- 40m for daytime indoor noise levels (45dBa)
- 35m for nighttime indoor noise levels (40dBa)
- 40m for daytime outdoor noise levels (55dBa)

Due to the fact that lots 1-10 will be designed with units that face Scott Street/Wrigley Road with access and driveways from Street A, these units will be constructed closer to the Scott Street right-of-way than what is typical. Noise levels were checked at an appropriate setback of 20m and the following levels were found:

- 50dBa for daytime indoor noise levels, requiring a noise warning clause and a provision for future air conditioning
- 44dBa for nighttime indoor noise levels, requiring a noise warning clause and a provision for future air conditioning
- Daytime outdoor noise levels would be located at an approximate distance of 40m and, further to that, would be protected by the buildings and therefore would not require any noise attenuation measure.

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The preliminary modeling, attached, shows that it is not anticipated that there will be any noise concerns for the subdivision. A detailed noise report will be completed at the detailed design stage, to clear Draft Plan Conditions.

We trust that this brief is sufficient to meet the Draft Plan submission requirements.
Yours very truly,

MERITECH ENGINEERING



Stefan Van Hartingsveldt, C.E.T.
CAD Designer

STV/
Enclosures (3)
cc



Chris Toggeretz, P. Eng.
Manager, Design Services

Region of Waterloo AADT Forecast for Noise Studies

1. Development/Location

Wrigley Road/Scott Street @ Hilltop Drive, Ayr,
Township of North Dumfries, ON

2. Current AADT (2018)

2,200

3. Forecast AADT (2028)

2,600

4. Commercial Vehicle Rates

Trucks	1.3%
Heavys	2.2%

5. Posted Speed Limit

Scott St Wrigley Rd (185 m east of Hilltop Dr)
50 km/h 80 km/h

6. Day/Night Splits

Regional Standard 90/10 Day/Night Split

7. Expiry Date

December 31st, 2020

8. Notes

This forecast is intended for the purpose of carrying out a noise study only. The above AADTs represent the traffic volumes on Scott Street/Wrigley Road, east of Hilltop Drive, in Ayr, Township of North Dumfries, ON.

It should be noted that the posted speed limit on Wrigley Road/Scott Street changes from 80km/h to 50km/h at the eastern edge of the site at 1940 Wrigley Road.

This forecast remains valid up to the date indicated above. The Region of Waterloo should be contacted for an updated forecast if there are plans to use this forecast beyond the above validity period.

STAMSON: Indoor/Outdoor Noise Levels (Conceptual)

STAMSON 5.0 NORMAL REPORT Date: 06-11-2018 08:30:18
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4628MEMO.te Time Period: Day/Night 16/8 hours
 Description: Indoor/Outdoor Noise Levels (Conceptual)

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

```
-----
Car traffic volume   : 2866/318   veh/TimePeriod  *
Medium truck volume :   39/4     veh/TimePeriod  *
Heavy truck volume  :   65/7     veh/TimePeriod  *
Posted speed limit  :   80 km/h
Road gradient       :    5 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 3300
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 10.00
Medium Truck % of Total Volume      : 1.30
Heavy Truck % of Total Volume       : 2.20
Day (16 hrs) % of Total Volume     : 90.00
```

Data for Segment # 1: (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 : 40.00 / 35.00 m
Receiver height  :      1.50 / 4.50 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle  :      0.00
```

Results segment # 1: (day)

Source height = 1.22 m

ROAD (0.00 + 55.07 + 0.00) = 55.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	63.60	0.00	-7.07	-1.46	0.00	0.00	0.00	55.07

Segment Leq : 55.07 dBA

Results segment # 1: (night)

Source height = 1.21 m

ROAD (0.00 + 49.85 + 0.00) = 49.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	56.98	0.00	-5.81	-1.32	0.00	0.00	0.00	49.85

Segment Leq : 49.85 dBA

STAMSON: Indoor/Outdoor Noise Levels (Conceptual)

STAMSON 5.0 NORMAL REPORT Date: 18-11-2019 15:57:50
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4628memo.te Time Period: Day/Night 16/8 hours
 Description: Indoor/Outdoor Noise Levels (Conceptual)

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

```
-----
Car traffic volume : 2866/318 veh/TimePeriod *
Medium truck volume : 39/4 veh/TimePeriod *
Heavy truck volume : 65/7 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 5 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 3300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.30
Heavy Truck % of Total Volume : 2.20
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: (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 / 20.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: (day)

Source height = 1.22 m

ROAD (0.00 + 60.07 + 0.00) = 60.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	63.60	0.00	-2.07	-1.46	0.00	0.00	0.00	60.07

Segment Leq : 60.07 dBA

Results segment # 1: (night)

Source height = 1.21 m

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	0.58	56.98	0.00	-1.97	-1.32	0.00	0.00	0.00	53.69

Segment Leq : 53.69 dBA