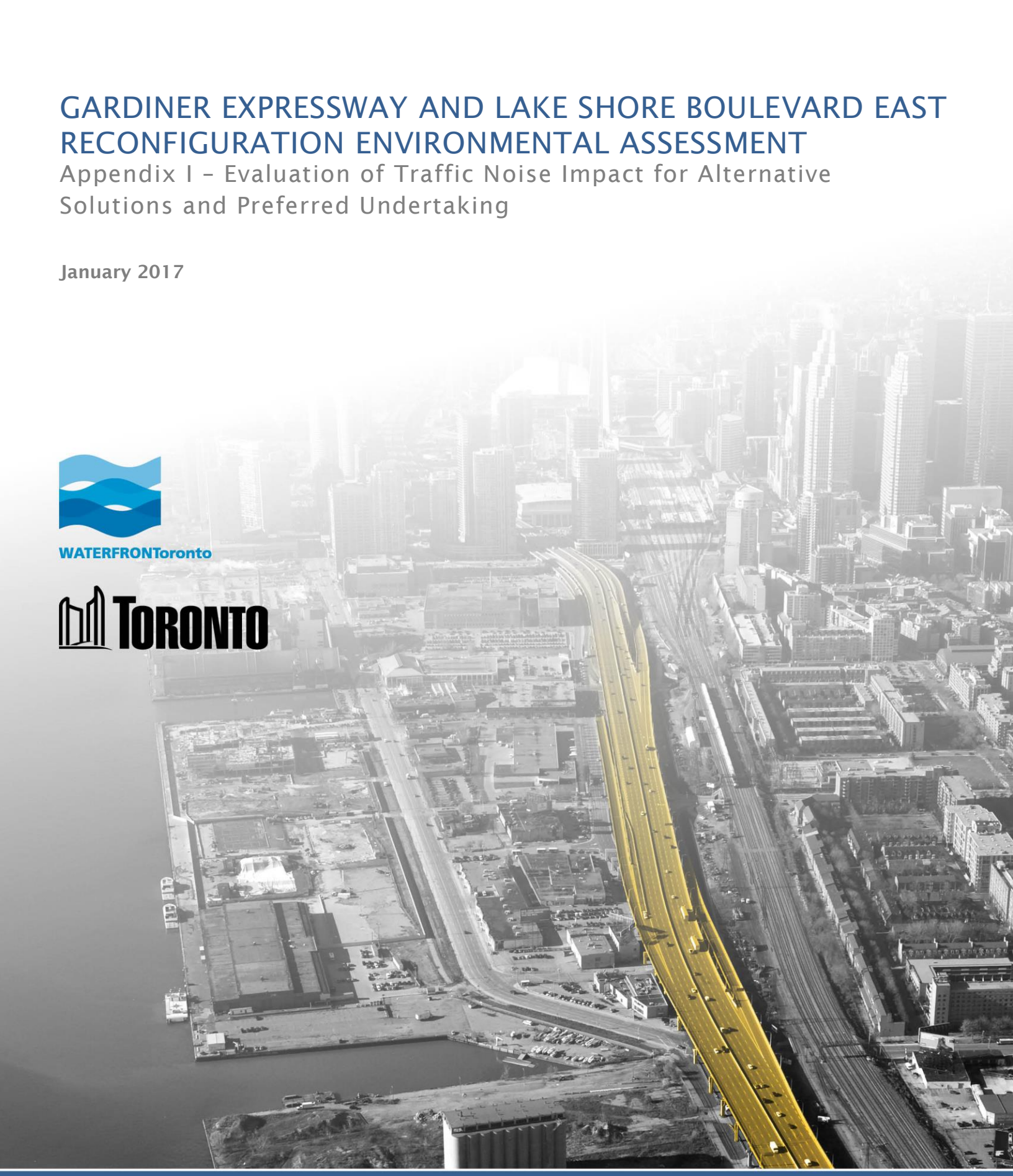
GARDINER EXPRESSWAY AND LAKE SHORE BOULEVARD EAST RECONFIGURATION ENVIRONMENTAL ASSESSMENT

Appendix I – Evaluation of Traffic Noise Impact for Alternative Solutions and Preferred Undertaking

January 2017



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1.0 INTRODUCTION

This traffic noise assessment report has been prepared in support of an Environmental Assessment to assess the traffic noise impact associated with the proposed four alternative solutions and the preferred undertaking being considered for the Gardiner Expressway and Lake Shore Boulevard East. The Environmental Assessment for this project is referred to as the Gardiner East EA. The four alternative solutions include: Maintain, Improve, Replace, and Remove and the preferred undertaking is a combination of various alternatives and is referred to herein as the Hybrid 3 option.

1.1. STUDY AREA

The EA study area extends from just west of Lower Jarvis Street to just east of Carlaw Avenue, where the Gardiner ramps touch down. It includes the lands in the vicinity of the section of the Gardiner Expressway and Lake Shore Boulevard East that are being considered for reconfiguration. These are the areas that could potentially experience disruption effects and be transformed through redevelopment opportunities. **Figure 1** illustrates the EA study area. Considering that noise effects associated with the project are related to traffic volumes, and that changes to the Gardiner corridor could results in changes to traffic volumes on other nearby roads and streets, future noise levels were predicted for receptor points that extend beyond the Gardiner/Lakeshore Boulevard corridor. These receptor points are shown in **Figure 2** located at the end of this report.

Figure 1: Study Area

1.2. NOISE PREDICTION METHODOLOGIES

In order to evaluate baseline noise levels and assess alternatives, traffic noise prediction modelling was undertaken. The prediction modelling was completed in accordance with the applicable guidelines set by the Ontario Ministry of the Environment and Climate Change (MOECC) (formerly Ministry of the Environment) and the Ministry of Transportation Ontario (MTO).

For the purposes of this assessment, the Ontario Road Noise Analysis Method (ORNAMENT) was used to predict traffic noise at receptors throughout the study area. This methodology is implemented through STAMSON, a DOS-based computer program.

1.3. THE NOISE GUIDE AND APPLICABLE CRITERIA

The Ministry of the Environment (MOE)/MTO's Protocol for Dealing With Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments (the Guide) provides guidance on the assessment and mitigation of highway generated noise on noise-sensitive land uses (MOE/MTO, 1986). The noise impact is determined by comparing the future sound levels with and without the proposed reconfiguration of the Gardiner Expressway for the Outdoor Living Areas (OLA) of Noise Sensitive Areas (NSAs). Typically, OLAs include backyards, front yards and balconies of sensitive receptors (e.g., residential dwellings). In a noise impact assessment, the OLA that is closest to the project site (i.e., noise sources) is assessed for noise impact. **Table 1** is an excerpt from MOE/MTO's guideline which summarizes the mitigation procedures/measures that are to be implemented for the predicted change in noise levels above the ambient (i.e., less than OR equal-to and greater than 5 dB), with the proposed project.

Table 1: Outdoor Living Area Noise Criteria for Noise Mitigation

Change in Noise Level Above Ambient/ Projected Noise Levels with Proposed Project	Mitigation Effort Required
0 – 5 dBA change	▪ None
> 5 dBA change	▪ Investigate noise control measures on right-of-way; ▪ Introduce noise control measures within right-of-way if the project cost is not significantly affected. ▪ Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation, over first row of receivers. ▪ Mitigate to ambient, as administratively, economically, and technically feasible.

Source: Table 1 in MOE/MTO Protocol for Dealing With Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments (1986).

The Guide notes that mitigation measures must attempt to achieve noise levels as close to, or lower than, the future predicted ambient without the proposed improvements as is technically, economically, and administratively feasible. Mitigation measures within the right-of-way include:

- Acoustical barriers;

- Berms;
- Vertical and horizontal alignments; and
- Pavement surfaces.

1.4. ESTABLISHING BASELINES CONDITIONS FOR COMPARATIVE EVALUATION

Characterizing baseline or existing noise environment is a necessary step in establishing the noise impacts associated with the proposed alternatives. The existing noise environment in the study area is influenced by:

- Noise generated by traffic on the Gardiner Expressway, Don Valley Parkway, Lake Shore Boulevard, associated on and off ramps, and other nearby city roads (e.g., Yonge Street, Jarvis Street, Sherbourne Street, Parliament Street, Cherry Street, Front Street, King Street, etc.);
- Noise generated by rail traffic on the Toronto Terminal Railway/CN Rail Corridor;
- Marine traffic in the Toronto Inner Harbour;
- HVAC units and other rooftop noise sources of buildings in the area; and,
- Industrial and construction related noise sources.

The noise within the study area is also influenced by aircraft noise associated with the Billy Bishop Toronto City Airport; however, the noise is considered to be intermittent. The study area can be classified as a Class 1 Area as defined by the MOECC noise publication NPC-300. Class 1 Area is defined as "*an area with an acoustical environment typical of a major population centre, where the background noise is dominated by the urban hum.*"(MOECC, 2013).

For the purposes of the EA study, effects were assessed under a future baseline condition which was assumed to be 2031. The traffic volumes and flows within the study area are expected to be different in 2031 in comparison to today. As such, for a proper comparison of the noise impact for various alternatives, the future (i.e., 2031) maintain or "do nothing" alternative is considered the baseline scenario for the purposes of this comparative assessment. The noise assessment results for the alternative solutions and the preferred undertaking are compared against the future baseline scenario in order to determine potential noise impacts and identify appropriate mitigation measures (if required). Traffic data used in the analysis for the Maintain alternative is presented in **Appendix A**.

1.5. DESCRIPTION OF ALTERNATIVE SOLUTIONS

The four alternative solutions considered in this evaluation are:

- ***Maintain*** – consists of maintaining the existing condition including the number of lanes and lane configuration along Lake Shore Boulevard and the Gardiner Expressway. This alternative includes rehabilitation of the Gardiner Expressway and realignment of Lake Shore Boulevard through the Keating Channel Precinct as per the Keating Channel Precinct Plan.

- ***Improve*** – consists of improving Lake Shore Boulevard to improve the pedestrian/cycling experience. This also includes the rehabilitation of the Gardiner Expressway but with a reduction in the number of lanes on the Gardiner, from six lanes to four lanes between Jarvis Street and the Don Valley Parkway ramp connection. This alternative also includes the realignment of Lake Shore Boulevard through the Keating Channel Precinct as per the Keating Channel Precinct Plan.

- ***Replace*** – consists of replacing the Gardiner and Lake Shore Boulevard to include four lanes for Lake Shore Boulevard and four lanes for the Gardiner Expressway (two lanes in each direction

for both roads). This alternative would open up more space for an improved pedestrian/cycling environment and for new development. This alternative also includes the realignment of Lake Shore Boulevard through the Keating Channel Precinct as per the Keating Channel Precinct Plan.

- ***Remove*** – consists of removing the Gardiner Expressway east of Jarvis Street and constructing a new Lake Shore Boulevard with eight lanes, four in each direction. This alternative would take away the expressway function and would replace Lake Shore Boulevard with a landscaped boulevard with exposure to light and air. This alternative also includes the realignment of Lake Shore Boulevard through the Keating Channel Precinct as per the Keating Channel Precinct Plan.

Further details regarding the alternative solutions are provided in the main **EA Report, Chapter 4**.

2.0 NOISE EVALUATION

As described in **Section 1.4**, the baseline conditions for the assessment were established through modelling the noise impacts at key receptors of existing conditions. The following sub-sections describe the assumptions, methodology and results of the traffic noise modelling study.

2.1. ASSUMPTIONS AND METHODOLOGY

The baseline noise environment was established at selected noise sensitive receptors (or 'nodes') within the study area. Based on the review of the parameters that impact traffic noise (i.e., traffic volume, posted speed limit and percentage of trucks), the study area was divided into segments of road, typically stretching from one intersection to the next. Conservatively, for each segment of the road one receptor or node was considered for the purposes of this comparative assessment.

For at-grade road segments, the receptor heights were determined based on the review of the potential receptor locations. This included receptor heights of 1.5 metres and 4.5 metres above grade, for receptors at ground level and second storey, respectively. The height of 4.5 metres represents receptors at the plain of the second storey window. For elevated roadways (e.g., Gardiner Expressway), a receptor height resulting in maximum noise impact was selected for the modeling (i.e., assumed receptors at the same height as the elevated roadway).

In many instances, the setback distances from the centre of the roadways to receptors were less than the minimum limit of 15m set in the STAMSON noise model. As such, for those receptors a setback distance of 15 metres was assumed. Similarly, in most cases there are no backyards or front yards. Setback distances were considered to the exterior of building facades, or balconies (where applicable) to account for noise impact on Outdoor Living Areas (OLAs).

Relevant future 2031 potential receptors were also included in the analysis. It should be noted that at the time of preparing this assessment, much of the study area along the Gardiner – Lake Shore Boulevard corridor are undeveloped or under construction with new waterfront redevelopment. Given the redevelopment plans in the study area, the locations, heights and setback distances of future potential receptors were estimated from the proposed development plans, including the ones for Keating Channel Precinct, West Don Lands and East Bayfront Precinct.

For some of the nodes, more than one segment of road contributed to the overall noise levels. This was mainly the case for receptors in close vicinity of the Gardiner Expressway. For predicting noise levels at these locations, traffic noise contributions from up to four (4) road segments (e.g., Gardiner Eastbound,

Gardiner Westbound, Lake Shore Boulevard Eastbound and Lake Shore Boulevard Westbound) were included in the traffic noise modelling.

For the road segments that the traffic volumes were less than the STAMSON's minimum limit of 40 vehicles per hour, the traffic noise contributions to the overall receptor noise levels were assumed to be negligible.

Sample STAMSON model output is provided in **Appendix B**.

2.2. RESULTS AND DISCUSSION

Predicted traffic noise levels for the future baseline condition (i.e., 2031 "Do-nothing" / Maintain scenario) as well as the other alternatives (i.e., Improve, Replace or Remove) are summarized in **Table 2**. The location of selected receptors / nodes are illustrated in **Figure 2.**

The noise levels are A-weighted 24-hour sound level equivalents (i.e., A-weighted L_{eq}). The A-weighting of the predicted noise levels best reflects human's response to noise. The traffic volumes were established through traffic volume forecasting. The predicted levels were arrived at using typical weekday 24-hour volumes for each scenario. This is more conservative than using Annual Average Daily Traffic (AADT) volumes as lower traffic volumes for weekend, statutory holidays and the December / January holiday season were excluded, resulting in higher traffic numbers. The typical weekday 24-hour traffic volumes used in this study are only 1% to 3% less than the Summer Average Daily Traffic (SADT) volumes. Since this is a comparative assessment of change in noise levels for the alternatives and the preferred undertaking, minor change in traffic volumes does not change the conclusion of this assessment (See **Appendix A**).

The predicted noise levels represent average traffic noise levels that the receptors would be exposed to. Given that the predicted values are averages, it is likely that in most instances, the traffic noise impact during daytime hours will be higher than the average values and during nighttime hours will be lower than the average values.

The comparative assessment of traffic noise impact amongst the four scenarios indicates that noticeable differences in noise levels are mainly predicted for receptors that are in close proximity to the Gardiner Expressway and Lake Shore Boulevard (receptors are identified as R1 to R11 in **Table 2**, below). For the purposes of this assessment, for receptors along Gardiner Expressway and Lake Shore Boulevard, representative receptor locations were selected to reflect maximum noise impact for each route separately. This was done to conservatively account for maximum noise impact for each route, with Gardiner Expressway being overtop of Lake Shore Boulevard. Receptors 64 to 68 were identified as representative receptors for traffic along Gardiner Expressway and receptors 82 to 87 were identified as representative receptors for traffic along Lake Shore Boulevard. The noise impacts for corresponding representative receptors were combined to determine overall traffic noise impact for key receptors R1 to R11 (see **Table 2**).

As expected, the Maintain alternative results in the highest noise impact for those receptors, while the Remove alternative results in the lowest noise impact. The predicted noise levels for the Replace and Improve alternatives are similar and are predicted to be less than the Maintain alternative but higher than the Remove alternative. The relatively high traffic volumes and faster moving vehicles along the Gardiner Expressway make this roadway a dominant noise source for receptors in its proximity. As such, removal of the Gardiner Expressway would result in a noticeable reduction in receptor noise levels.

Table 2: Predicted Traffic Noise Levels (24 Hour Leq, DBA)

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
2	Adelaide St from Church St to Jarvis St	**68**	**68**	**68**	**68**
3	Adelaide St from Jarvis St to Sherbourne St	**69**	**69**	**69**	**69**
4	Adelaide St from Parliament St to Cherry St	**69**	**70**	**70**	**69**
5	Adelaide St from Parliament St to St. Lawrence St	**69**	**70**	**70**	**66**
6	Adelaide St from Sherbourne St to Parliament St	**69**	**69**	**69**	**69**
7	Adelaide St from Yonge St to Church St	**67**	**66**	**66**	**66**
8	Bayview Ave from Broadview Ave to Boulton Ave	**67**	**65**	**65**	**65**
9	Bayview Ave from Front St to Queen St	**64**	**63**	**63**	**63**
10	Bouchette St from Commissioners St to Villiers St	**62**	**60**	**59**	**59**
11	Boulton Ave from Queen St to Dundas St	**63**	**63**	**63**	**63**
12	Broadview Ave from Eastern Ave to Queen St	**64**	**63**	**63**	**63**
13	Broadview Ave from Queen St to Dundas St	**62**	**61**	**62**	**61**
14	Carlaw Ave from Commissioners St to Villiers St	**63**	**62**	**63**	**64**
15	Carlaw Ave from Eastern Ave to Queen St	**64**	**64**	**64**	**64**
16	Carlaw Ave from Lakeshore to Eastern Ave	**64**	**65**	**64**	**64**
17	Carlaw Ave from Queen St to Dundas St	**63**	**63**	**63**	**63**
18	Cherry St from Commissioners St to Villiers St	**63**	**62**	**62**	**62**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
19	Cherry St from Eastern Ave to King St	**61**	**61**	**61**	**61**
20	Cherry St from Front St to Eastern Ave	**62**	**62**	**62**	**61**
21	Cherry St from Gardiner to Mill St	**63**	**64**	**62**	**62**
22	Cherry St from Mill St to Front St	**62**	**61**	**61**	**60**
23	Cherry St from Villiers St to Queens Quay	**65**	**65**	**65**	**65**
24	Church St from Adelaide St to Richmond St	**66**	**66**	**66**	**66**
25	Church St from Front St to King St	**66**	**66**	**66**	**66**
26	Church St from King St to Adelaide St	**66**	**66**	**66**	**66**
27	Church St from Queen St to Shuter St	**66**	**66**	**37**	**66**
28	Church St from Richmond St to Queen St	**66**	**66**	**66**	**66**
29	Church St from Shuter St to Dundas St	**66**	**66**	**66**	**66**
30	Church St from The Esplanade to Front St	**62**	**61**	**61**	**61**
31	Commissioners St from Bouchette St to Carlaw Ave	**63**	**61**	**62**	**63**
32	Commissioners St from Cherry St to Don Roadway	**63**	**62**	**61**	**61**
33	Commissioners St from Don Roadway to Bouchette St	**64**	**64**	**63**	**62**
34	Don Roadway from Commissioners St to Villiers St	**64**	**64**	**64**	**64**
35	Don Roadway from Villiers St to Lake Shore	**64**	**65**	**65**	**65**
36	Don Valley Parkway from Broadview Ave to Boulton Ave	**75**	**75**	**76**	**75**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
37	Don Valley Parkway from DVP Ramps to Eastern Ave	**74**	**73**	**76**	**75**
38	Don Valley Parkway from Eastern Ave to Queen St	**75**	**75**	**76**	**76**
40	Dundas St from Boulton Ave to Carlaw Ave	**67**	**67**	**67**	**67**
41	Dundas St from Broadview Ave to Boulton Ave	**67**	**67**	**67**	**67**
42	Dundas St from Church St to Jarvis St	**65**	**66**	**66**	**66**
43	Dundas St from DVP ramp to Broadview Ave	**67**	**67**	**67**	**67**
44	Dundas St from Jarvis St to Sherbourne St	**65**	**65**	**65**	**65**
45	Dundas St from Logan Ave to Carlaw Ave	**68**	**68**	**67**	**67**
46	Dundas St from Parliament St to Sumach St	**65**	**65**	**64**	**65**
47	Dundas St from River St to DVP Ramp	**67**	**67**	**66**	**66**
48	Dundas St from Sherbourne St to Parliament St	**65**	**65**	**64**	**64**
49	Dundas St from Shuter St (Sumach St) to River St	**65**	**65**	**65**	**65**
50	Dundas St from Yonge St to Church St	**66**	**65**	**65**	**66**
51	Eastern Ave from Boulton Ave to Carlaw Ave	**69**	**70**	**69**	**69**
52	Eastern Ave from Broadview Ave to Boulton Ave	**69**	**70**	**69**	**69**
53	Eastern Ave from Cherry St to DVP Ramps	**73**	**71**	**71**	**66**
54	Eastern Ave from DVP ramps to Broadview Ave	**67**	**67**	**67**	**67**
55	Eastern Ave from St Lawrence St to DVP Ramps	**73**	**71**	**71**	**71**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
56	Eastern Ave from Trinity St to Cherry St	**67**	**67**	**67**	**67**
57	Front St from Cherry St to Bayview Ave	**63**	**63**	**63**	**63**
58	Front St from Church St to Jarvis St	**68**	**68**	**68**	**68**
59	Front St from Jarvis St to Sherbourne St	**68**	**68**	**68**	**68**
60	Front St from Parliament St to Trinity St	**68**	**71**	**71**	**68**
61	Front St from Sherbourne St to Parliament St	**68**	**68**	**68**	**68**
62	Front St from Trinity St to Front St	**62**	**62**	**62**	**62**
63	Front St from Yonge St to Church St	**67**	**67**	**67**	**68**
69	Jarvis St from Adelaide St to Richmond St	**67**	**67**	**68**	**67**
70	Jarvis St from Front St to King St	**66**	**67**	**67**	**67**
71	Jarvis St from Queen St to Shuter St	**67**	**67**	**68**	**67**
72	Jarvis St from Richmond St to Queen St	**68**	**68**	**68**	**68**
73	Jarvis St from Shuter St to Dundas St	**67**	**67**	**67**	**67**
74	King St from Church St to Jarvis St	**65**	**65**	**65**	**65**
75	King St from Jarvis St to Sherbourne St	**65**	**64**	**65**	**65**
76	King St from Parliament St to Sumach St	**63**	**64**	**63**	**63**
77	King St from River St to Queen St	**64**	**64**	**64**	**63**
78	King St from Sherbourne St to Parliament St	**63**	**64**	**63**	**63**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
79	King St from Shuter St to River St	**64**	**64**	**65**	**64**
80	King St from Yonge St to Church St	**65**	**64**	**65**	**65**
81	Lake Shore Blvd from Bouchette St to Carlaw Ave	**69**	**71**	**70**	**70**
88	Logan Ave from Queen St to Dundas St	**58**	**58**	**58**	**58**
89	Lower Jarvis St from Adelaide St to Richmond St	**67**	**67**	**68**	**67**
90	Lower Jarvis St from Gardiner to The Esplanade	**68**	**68**	**69**	**68**
91	Lower Jarvis St from King St to Adelaide St	**66**	**66**	**67**	**66**
92	Lower Jarvis St from Queens Quay to Gardiner	**64**	**63**	**62**	**63**
93	Lower Jarvis St from The Esplanade to Front St	**67**	**67**	**68**	**67**
94	Lower Sherbourne St from Gardiner to The Esplanade	**65**	**65**	**65**	**63**
95	Lower Sherbourne St from Queens Quay to Gardiner	**65**	**62**	**61**	**60**
96	Lower Sherbourne St from The Esplanade to Front St	**65**	**65**	**65**	**64**
97	Mill St from Cherry St to Bayview Ave	**53**	**53**	**53**	**53**
98	Mill St from Parliament St to Cherry St	**61**	**60**	**61**	**61**
99	Parliament St from Adelaide St to Richmond St	**65**	**65**	**65**	**65**
100	Parliament St from Front St to King St	**65**	**65**	**65**	**65**
101	Parliament St from Gardiner to Mill St	**65**	**65**	**66**	**66**
102	Parliament St from King St to Adelaide St	**65**	**65**	**65**	**65**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
103	Parliament St from Mill St to Front St	**65**	**65**	**66**	**66**
104	Parliament St from Queen St to Shuter St	**64**	**63**	**64**	**64**
105	Parliament St from Richmond St to Queen St	**65**	**64**	**65**	**65**
106	Parliament St from Shuter St to Dundas St	**63**	**63**	**63**	**63**
107	Queen St from Boulton Ave to Carlaw Ave	**64**	**65**	**63**	**64**
108	Queen St from Broadview Ave to Boulton Ave	**66**	**66**	**65**	**65**
109	Queen St from Church St to Jarvis St	**64**	**64**	**64**	**64**
110	Queen St from DVP ramp to Broadview Ave	**66**	**66**	**65**	**65**
111	Queen St from Jarvis St to Sherbourne St	**64**	**64**	**64**	**64**
112	Queen St from King St to DVP Ramp	**66**	**66**	**65**	**65**
113	Queen St from Logan Ave to Carlaw Ave	**64**	**65**	**63**	**64**
114	Queen St from Parliament St to Sumach St	**63**	**63**	**62**	**62**
115	Queen St from River St to King St	**64**	**64**	**64**	**63**
116	Queen St from Sherbourne St to Parliament St	**64**	**64**	**63**	**63**
117	Queen St from Shuter St to River St	**63**	**64**	**63**	**63**
118	Queen St from Yonge St to Church St	**65**	**64**	**65**	**65**
119	Queens Quay E from Jarvis St to Sherbourne St	**68**	**67**	**67**	**67**
120	Queens Quay E from Sherbourne St to Parliament St	**65**	**65**	**65**	**65**

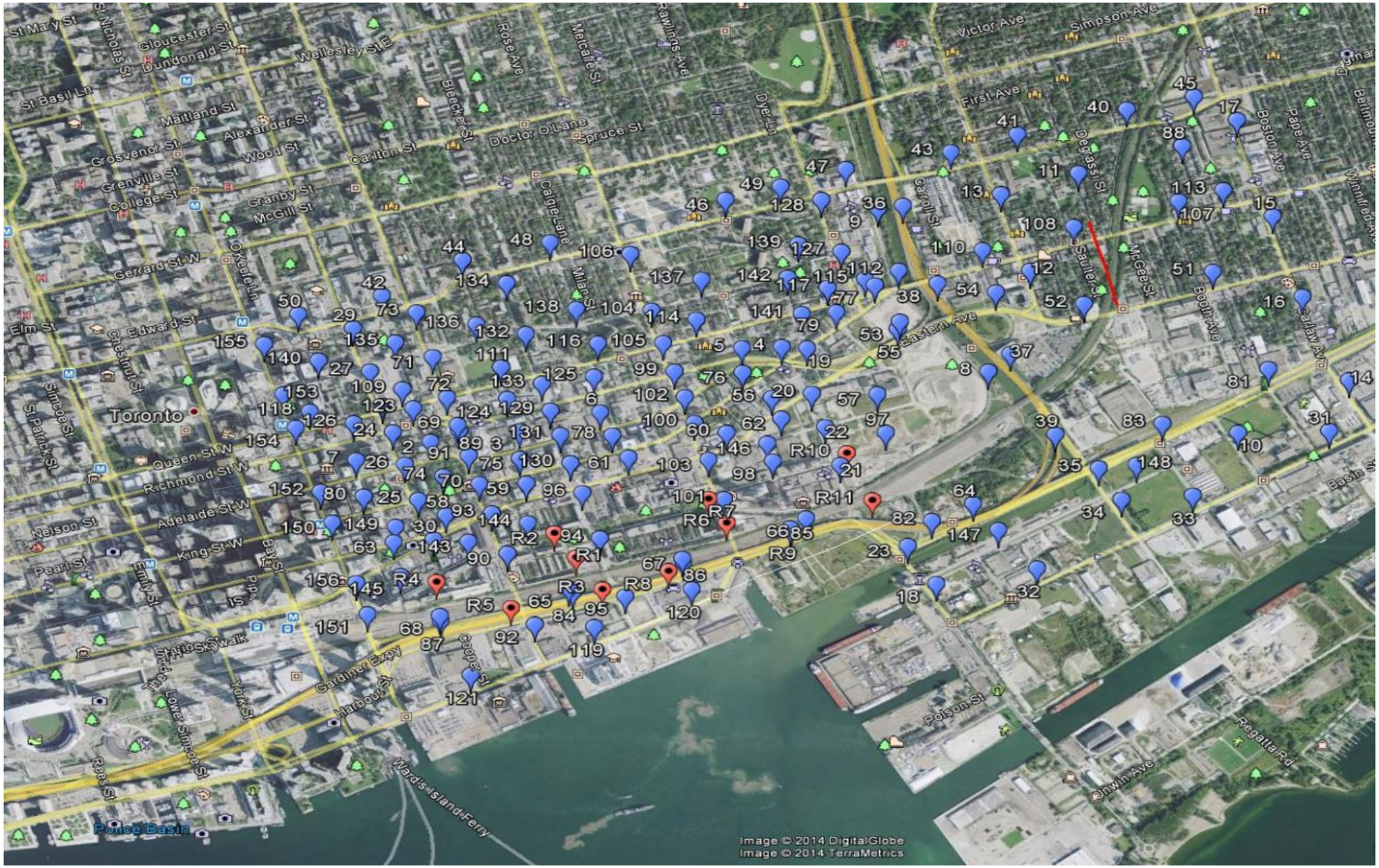
Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
121	Queens Quay E from Young St to Jarvis St	**69**	**69**	**68**	**68**
122	Queens Quay from Queens Quay to Gardiner	**64**	**65**	**65**	**65**
123	Richmond St W from Church St to Jarvis St	**69**	**69**	**69**	**69**
124	Richmond St W from Jarvis St to Sherbourne St	**69**	**68**	**69**	**69**
125	Richmond St W from Sherbourne St to Parliament St	**69**	**69**	**69**	**69**
126	Richmond St W from Yonge St to Church St	**67**	**67**	**67**	**67**
127	River St from Queen St to Shuter St	**58**	**58**	**58**	**58**
128	River St from Shuter St to Dundas St	**62**	**62**	**62**	**62**
129	Sherbourne St from Adelaide St to Richmond St	**65**	**65**	**65**	**65**
130	Sherbourne St from Front St to King St	**65**	**65**	**65**	**65**
131	Sherbourne St from King St to Adelaide St	**65**	**65**	**65**	**65**
132	Sherbourne St from Queen St to Shuter St	**63**	**63**	**63**	**63**
133	Sherbourne St from Richmond St to Queen St	**65**	**65**	**65**	**65**
134	Sherbourne St from Shuter St to Dundas St	**63**	**63**	**63**	**63**
135	Shuter St from Church St to Jarvis St	**64**	**64**	**64**	**64**
136	Shuter St from Jarvis St to Sherbourne St	**63**	**63**	**63**	**63**
137	Shuter St from Parliament St to Sumach St	**64**	**64**	**64**	**64**
138	Shuter St from Sherbourne St to Parliament St	**63**	**62**	**62**	**62**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
139	Shuter St from Shuter St to River St	**64**	**64**	**64**	**64**
140	Shuter St from Yonge St to Church St	**63**	**63**	**63**	**63**
141	Sumach St from King St to Queen St	**56**	**57**	**56**	**56**
142	Sumach St from Queen St to Shuter St	**54**	**54**	**54**	**54**
143	The Esplanade from Church St to Jarvis St	**62**	**63**	**63**	**62**
144	The Esplanade from Jarvis St to Sherbourne St	**62**	**62**	**63**	**62**
145	The Esplanade from Yonge St to Church St	**62**	**62**	**62**	**62**
146	Trinity St from Front St to Eastern Ave	**62**	**60**	**62**	**62**
147	Villiers St from Cherry St to Don Roadway	**57**	**57**	**58**	**57**
148	Villiers St from Don Roadway to Saulter St	**57**	**56**	**57**	**57**
149	Wellington St from Yonge St to Church St	**67**	**67**	**67**	**68**
150	Yonge St from Front St to King St	**66**	**66**	**66**	**66**
151	Yonge St from Gardiner to The Esplanade	**67**	**65**	**67**	**67**
152	Yonge St from King St to Adelaide St	**66**	**66**	**66**	**66**
153	Yonge St from Queen St to Shuter St	**66**	**65**	**66**	**66**
154	Yonge St from Richmond St to Queen St	**66**	**65**	**65**	**66**
155	Yonge St from Shuter St to Dundas St	**66**	**65**	**66**	**66**
156	Yonge St from The Esplanade to Front St	**67**	**66**	**68**	**67**

Representative POR	Location	Predicted Traffic Noise Level (dBA)			
		Replace	Remove	Maintain	Improve
R1	Receptor 1 (65 + 84)	**70**	**67**	**72**	**71**
R2	Receptor 2 (65 + 84)	**67**	**63**	**69**	**68**
R3	Receptor 3 (65 + 84)	**72**	**68**	**76**	**73**
R4	Receptor 4 (68 + 87)	**69**	**62**	**70**	**70**
R5	Receptor 5 (68 + 87)	**71**	**64**	**76**	**72**
R6	Receptor 6 (67 + 86)	**71**	**67**	**72**	**72**
R7	Receptor 7 (67 + 86)	**68**	**63**	**69**	**68**
R8	Receptor 8 (67 + 86)	**77**	**72**	**77**	**77**
R9	Receptor 9 (64 + 85)	**78**	**69**	**78**	**78**
R10	Receptor 10 (64 + 82)	**69**	**60**	**69**	**69**
R11	Receptor 11 (64 + 82)	**78**	**69**	**78**	**77**

Note: Receptors 64 to 68 were identified as representative receptors for traffic along Gardiner Expressway and receptors 82 to 87 were identified as representative receptors for traffic along Lake Shore Boulevard. The noise impacts for corresponding representative receptors were combined to determine overall traffic noise impact for key receptors R1 to R11.

Figure 2: Aerial Photograph of the Study Area and the Selected Receptor Locations



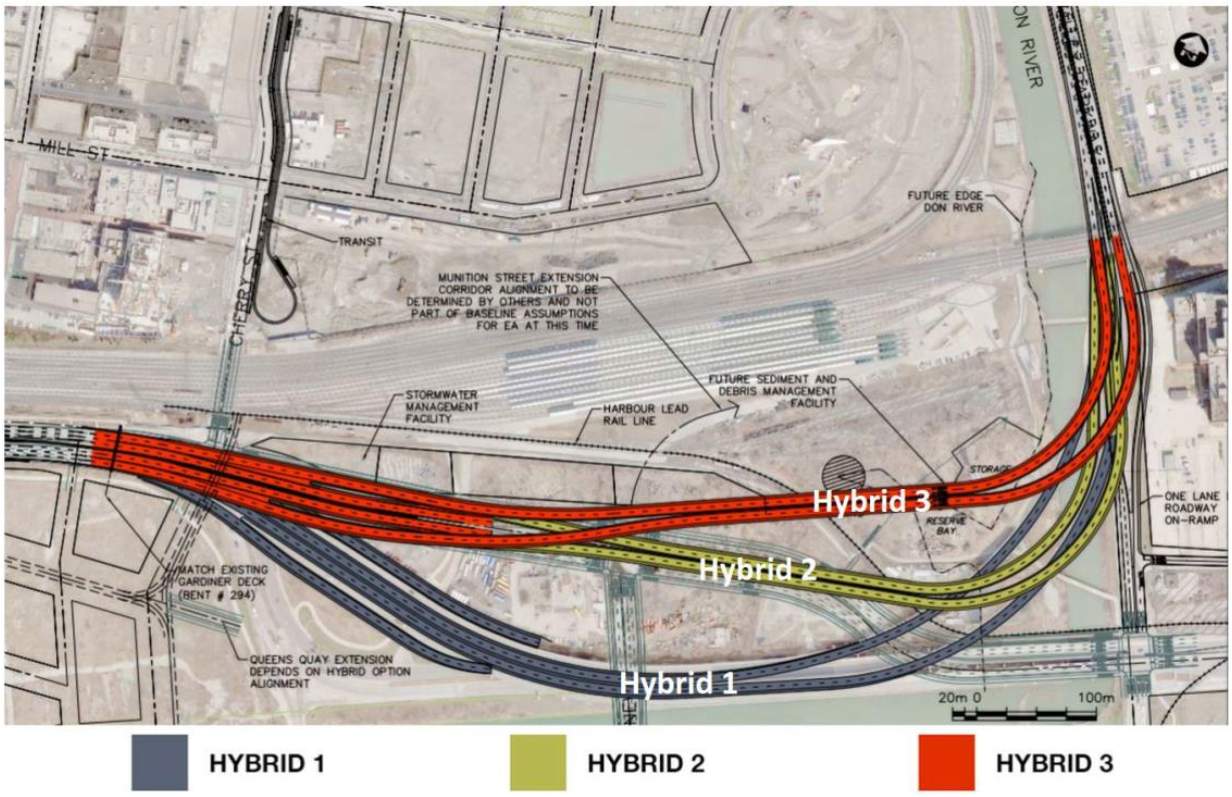
3.0 ALTERNATIVE SOLUTION EVALUATION STAGE 2

In follow-up to the alternative solution evaluation described previously, the study team was directed to develop and evaluate a Hybrid alternative and evaluate this against an optimized Remove alternative. As described in Section 4.4.3 of the main EA document, the Hybrid alternative involved the use of the existing Gardiner and the removal of the Logan Ramps (east of the Don River) and the addition of new ramps just east of Cherry Street. There are no changes to the Gardiner Corridor west of Cherry Street under the Hybrid Alternative. Figure 4.9 in the EA Report illustrates the Hybrid alternative. Based on traffic modeling work, it was shown that the Hybrid alternative would result in similar traffic volumes and patterns as the 'Do Nothing" (or 'Maintain') Alternative that was evaluated in the Stage 1 alternative solution evaluation described above. In evaluating these two alternatives (i.e., Remove vs. Hybrid), potential noise effects were considered as described in Table 4.9 of the EA Report. The two alternatives were considered to be equal with respect to noise on the basis that Optimized Remove Alternative is expected to have slightly lower noise levels in the Gardiner Corridor due to lower traffic volumes in the corridor but higher noise levels on other City streets in anticipation of traffic diversion to these other streets. Alternatively the Hybrid alternative was anticipated to have higher noise levels in the Gardiner Corridor but lower noise on other streets in expectation that diversion to other streets would be lower.

4.0 HYBRID ALTERNATIVE DESIGN ALTERNATIVE EVALUATION

Through a multi-criteria evaluation it was determined that the Hybrid alternative is the preferred solution as documented in Section 4.5 of the EA Report. The next step of the EA was to develop and assess alternative designs for the Hybrid alternative. As described in Section 5.2.2 of the EA Report, three different Hybrid designs were developed as illustrated below in **Figure 3**. These hybrid alternatives only differ in their position with the Keating Channel precinct. It is noted that Lakeshore Boulevard would also be realigned as per the Keating Precinct Plan and the realignment (to the north of the current Lake Shore Boulevard) is the same for all three alternatives. The realignment of Lake Shore Boulevard is consistent with the previously approved Keating Precinct Plan. Traffic volumes on the Gardiner would be identical for each of these Hybrid alternatives and are expected to be similar or the same as the 'Maintain' alternative as there is no change in Expressway capacity. In comparatively evaluating the alternatives, noise effects were considered as described in Table 5.2 in the EA Report. As described above, since lands in the Keating Precinct are currently undeveloped and specific receptor locations are not known, general concept development lands for the Keating Precinct and Villiers Island to the south were considered. The lands to the north of the proposed Hybrid alignments are to be expanded rail yard for Metrolinx's operations. As described in Table 5.2 of the EA Report, it was rationalized that the more northern alignments (Hybrid 2 and 3) would be preferred over Hybrid 1 from a noise impact perspective as there would be greater separation distance between these alignments and the new community on Villiers Island that is planned immediately south of the Keating Channel.

Figure 3: Hybrid Alternatives



5.0 PREFERRED ALTERNATIVE (HYBRID) NOISE ASSESSMENT

As a result of the multi-criteria evaluation that was completed, and summarized in Section 5.5 of the EA Report, Hybrid Alternative 3 was selected as the preferred alternative (see **Figure 3**). This alignment is the most northern alignment that is closest to the rail corridor and furthest removed from the future Villiers Island community to the south. Current land use in the Keating Precinct is largely underutilized vacant land. Development is planned for the Keating Channel Precinct and the precinct Plan will need to be revised to incorporate the realigned elevated Gardiner.

Operational noise effects were also considered in the EA Report as documented in Table 6.3. During operations, noise will be generated by traffic using the re-configured expressway based on the preferred alternative (i.e., Hybrid 3). Projected future traffic volumes using the expressway will be similar if not the same as under the future Do-Nothing (i.e., 'Maintain') or baseline scenario as there is no meaningful change to road capacity with the proposed undertaking. The change in traffic noise impact will be due to the change in source – receptor distances as the Gardiner will be shifted north in comparison to the 'Maintain' alternative. As such, traffic noise modeling was completed for key receptor locations identified to have different traffic noise impact for Hybrid 3 alternative in comparison to the 'Maintain' alternative. It should be noted that as mentioned above, since the traffic volumes for majority of the receptors (that are located along other City streets and removed from the Gardiner/Lakeshore corridor) are expected to be the same, the same predicted noise values for the 'Maintain' alternative are used for these receptors to represent the Hybrid 3 alternative. The results are summarized in **Table 3** and sample STAMSON model output for the Maintain and Hybrid 3 alternatives are provided in **Appendix B**.

Table 3: Comparison of the Predicted Traffic Noise Impact – Baseline V. Hybrid 3 Alternative

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
2	Adelaide St from Church St to Jarvis St	**68**	**68**
3	Adelaide St from Jarvis St to Sherbourne St	**69**	**69**
4	Adelaide St from Parliament St to Cherry St	**70**	**70**
5	Adelaide St from Parliament St to St. Lawrence St	**70**	**70**
6	Adelaide St from Sherbourne St to Parliament St	**69**	**69**
7	Adelaide St from Yonge St to Church St	**66**	**66**
8	Bayview Ave from Broadview Ave to Boulton Ave	**65**	**65**
9	Bayview Ave from Front St to Queen St	**63**	**63**
10	Bouchette St from Commissioners St to Villiers St	**59**	**59**
11	Boulton Ave from Queen St to Dundas St	**63**	**63**
12	Broadview Ave from Eastern Ave to Queen St	**63**	**63**
13	Broadview Ave from Queen St to Dundas St	**62**	**62**
14	Carlaw Ave from Commissioners St to Villiers St	**63**	**63**
15	Carlaw Ave from Eastern Ave to Queen St	**64**	**64**
16	Carlaw Ave from Lakeshore to Eastern Ave	**64**	**64**
17	Carlaw Ave from Queen St to Dundas St	**63**	**63**
18	Cherry St from Commissioners St to Villiers St	**62**	**62**
19	Cherry St from Eastern Ave to King St	**61**	**61**
20	Cherry St from Front St to Eastern Ave	**62**	**62**
21	Cherry St from Gardiner to Mill St	**62**	**62**
22	Cherry St from Mill St to Front St	**61**	**61**
23	Cherry St from Villiers St to Queens Quay	**65**	**65**
24	Church St from Adelaide St to Richmond St	**66**	**66**
25	Church St from Front St to King St	**66**	**66**
26	Church St from King St to Adelaide St	**66**	**66**
27	Church St from Queen St to Shuter St	**37**	**37**

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
28	Church St from Richmond St to Queen St	**66**	**66**
29	Church St from Shuter St to Dundas St	**66**	**66**
30	Church St from The Esplanade to Front St	**61**	**61**
31	Commissioners St from Bouchette St to Carlaw Ave	**62**	**62**
32	Commissioners St from Cherry St to Don Roadway	**61**	**61**
33	Commissioners St from Don Roadway to Bouchette St	**63**	**63**
34	Don Roadway from Commissioners St to Villiers St	**64**	**64**
35	Don Roadway from Villiers St to Lake Shore	**65**	**65**
36	Don Valley Parkway from Broadview Ave to Boulton Ave	**76**	**76**
37	Don Valley Parkway from DVP Ramps to Eastern Ave	**76**	**76**
38	Don Valley Parkway from Eastern Ave to Queen St	**76**	**76**
40	Dundas St from Boulton Ave to Carlaw Ave	**67**	**67**
41	Dundas St from Broadview Ave to Boulton Ave	**67**	**67**
42	Dundas St from Church St to Jarvis St	**66**	**66**
43	Dundas St from DVP ramp to Broadview Ave	**67**	**67**
44	Dundas St from Jarvis St to Sherbourne St	**65**	**65**
45	Dundas St from Logan Ave to Carlaw Ave	**67**	**67**
46	Dundas St from Parliament St to Sumach St	**64**	**64**
47	Dundas St from River St to DVP Ramp	**66**	**66**
48	Dundas St from Sherbourne St to Parliament St	**64**	**64**
49	Dundas St from Shuter St(Sumach St) to River St	**65**	**65**
50	Dundas St from Yonge St to Church St	**65**	**65**
51	Eastern Ave from Boulton Ave to Carlaw Ave	**69**	**69**
52	Eastern Ave from Broadview Ave to Boulton Ave	**69**	**69**
53	Eastern Ave from Cherry St to DVP Ramps	**71**	**71**
54	Eastern Ave from DVP ramps to Broadview Ave	**67**	**67**
55	Eastern Ave from St Lawrence St to DVP Ramps	**71**	**71**

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
56	Eastern Ave from Trinity St to Cherry St	**67**	**67**
57	Front St from Cherry St to Bayview Ave	**63**	**63**
58	Front St from Church St to Jarvis St	**68**	**68**
59	Front St from Jarvis St to Sherbourne St	**68**	**68**
60	Front St from Parliament St to Trinity St	**71**	**71**
61	Front St from Sherbourne St to Parliament St	**68**	**68**
62	Front St from Trinity St to Front St	**62**	**62**
63	Front St from Yonge St to Church St	**67**	**67**
69	Jarvis St from Adelaide St to Richmond St	**68**	**68**
70	Jarvis St from Front St to King St	**67**	**67**
71	Jarvis St from Queen St to Shuter St	**68**	**68**
72	Jarvis St from Richmond St to Queen St	**68**	**68**
73	Jarvis St from Shuter St to Dundas St	**67**	**67**
74	King St from Church St to Jarvis St	**65**	**65**
75	King St from Jarvis St to Sherbourne St	**65**	**65**
76	King St from Parliament St to Sumach St	**63**	**63**
77	King St from River St to Queen St	**64**	**64**
78	King St from Sherbourne St to Parliament St	**63**	**63**
79	King St from Shuter St to River St	**65**	**65**
80	King St from Yonge St to Church St	**65**	**65**
81	Lake Shore Blvd from Bouchette St to Carlaw Ave	**70**	**70**
88	Logan Ave from Queen St to Dundas St	**58**	**58**
89	Lower Jarvis St from Adelaide St to Richmond St	**68**	**68**
90	Lower Jarvis St from Gardiner to The Esplanade	**69**	**69**
91	Lower Jarvis St from King St to Adelaide St	**67**	**67**
92	Lower Jarvis St from Queens Quay to Gardiner	**62**	**62**
93	Lower Jarvis St from The Esplanade to Front St	**68**	**68**

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
94	Lower Sherbourne St from Gardiner to The Esplanade	**65**	**65**
95	Lower Sherbourne St from Queens Quay to Gardiner	**61**	**61**
96	Lower Sherbourne St from The Esplanade to Front St	**65**	**65**
97	Mill St from Cherry St to Bayview Ave	**53**	**53**
98	Mill St from Parliament St to Cherry St	**61**	**61**
99	Parliament St from Adelaide St to Richmond St	**65**	**65**
100	Parliament St from Front St to King St	**65**	**65**
101	Parliament St from Gardiner to Mill St	**66**	**66**
102	Parliament St from King St to Adelaide St	**65**	**65**
103	Parliament St from Mill St to Front St	**66**	**66**
104	Parliament St from Queen St to Shuter St	**64**	**64**
105	Parliament St from Richmond St to Queen St	**65**	**65**
106	Parliament St from Shuter St to Dundas St	**63**	**63**
107	Queen St from Boulton Ave to Carlaw Ave	**63**	**63**
108	Queen St from Broadview Ave to Boulton Ave	**65**	**65**
109	Queen St from Church St to Jarvis St	**64**	**64**
110	Queen St from DVP ramp to Broadview Ave	**65**	**65**
111	Queen St from Jarvis St to Sherbourne St	**64**	**64**
112	Queen St from King St to DVP Ramp	**65**	**65**
113	Queen St from Logan Ave to Carlaw Ave	**63**	**63**
114	Queen St from Parliament St to Sumach St	**62**	**62**
115	Queen St from River St to King St	**64**	**64**
116	Queen St from Sherbourne St to Parliament St	**63**	**63**
117	Queen St from Shuter St to River St	**63**	**63**
118	Queen St from Yonge St to Church St	**65**	**65**
119	Queens Quay E from Jarvis St to Sherbourne St	**67**	**67**
120	Queens Quay E from Sherbourne St to Parliament St	**65**	**65**

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
121	Queens Quay E from Young St to Jarvis St	**68**	**68**
122	Queens Quay from Queens Quay to Gardiner	**65**	**65**
123	Richmond St W from Church St to Jarvis St	**69**	**69**
124	Richmond St W from Jarvis St to Sherbourne St	**69**	**69**
125	Richmond St W from Sherbourne St to Parliament St	**69**	**69**
126	Richmond St W from Yonge St to Church St	**67**	**67**
127	River St from Queen St to Shuter St	**58**	**58**
128	River St from Shuter St to Dundas St	**62**	**62**
129	Sherbourne St from Adelaide St to Richmond St	**65**	**65**
130	Sherbourne St from Front St to King St	**65**	**65**
131	Sherbourne St from King St to Adelaide St	**65**	**65**
132	Sherbourne St from Queen St to Shuter St	**63**	**63**
133	Sherbourne St from Richmond St to Queen St	**65**	**65**
134	Sherbourne St from Shuter St to Dundas St	**63**	**63**
135	Shuter St from Church St to Jarvis St	**64**	**64**
136	Shuter St from Jarvis St to Sherbourne St	**63**	**63**
137	Shuter St from Parliament St to Sumach St	**64**	**64**
138	Shuter St from Sherbourne St to Parliament St	**62**	**62**
139	Shuter St from Shuter St to River St	**64**	**64**
140	Shuter St from Yonge St to Church St	**63**	**63**
141	Sumach St from King St to Queen St	**56**	**56**
142	Sumach St from Queen St to Shuter St	**54**	**54**
143	The Esplanade from Church St to Jarvis St	**63**	**63**
144	The Esplanade from Jarvis St to Sherbourne St	**63**	**63**
145	The Esplanade from Yonge St to Church St	**62**	**62**
146	Trinity St from Front St to Eastern Ave	**62**	**62**
147	Villiers St from Cherry St to Don Roadway	**58**	**58**

Representative POR	Location	Predicted Traffic Noise Level (dBA)	
		Maintain	Hybrid 3
148	Villiers St from Don Roadway to Saulter St	**57**	**57**
149	Wellington St from Yonge St to Church St	**67**	**67**
150	Yonge St from Front St to King St	**66**	**66**
151	Yonge St from Gardiner to The Esplanade	**67**	**67**
152	Yonge St from King St to Adelaide St	**66**	**66**
153	Yonge St from Queen St to Shuter St	**66**	**66**
154	Yonge St from Richmond St to Queen St	**65**	**65**
155	Yonge St from Shuter St to Dundas St	**66**	**66**
156	Yonge St from The Esplanade to Front St	**68**	**68**
R1	Receptor 1 (65 + 84)	**72**	**72**
R2	Receptor 2 (65 + 84)	**69**	**69**
R3	Receptor 3 (65 + 84)	**76**	**76**
R4	Receptor 4 (68 + 87)	**70**	**70**
R5	Receptor 5 (68 + 87)	**76**	**76**
R6	Receptor 6 (67 + 86)	**72**	**72**
R7	Receptor 7 (67 + 86)	**69**	**69**
R8	Receptor 8 (67 + 86)	**77**	**77**
R9	Receptor 9 (64 + 85)	**78**	**78**
R10	Receptor 10 (64 + 82)	**69**	**69**
R11	Receptor 11 (64 + 82)	**78**	**Removed**

Notes:

Receptors 64 to 68 were identified as representative receptors for traffic along the Gardiner Expressway and receptors 82 to 87 were identified as representative receptors for traffic along Lake Shore Boulevard. The noise impacts for corresponding representative receptors were combined to determine overall traffic noise impact for key receptors R1 to R11.

Receptor R11 will be removed for the Hybrid 3 alternative as Gardiner Expressway will be built at its location.

For receptors along the Gardiner Expressway, east of Don Valley Parkway (i.e., R10), there are minor differences in the predicted traffic noise levels between the Maintain and Hybrid 3 alternatives however, since the differences are less than 0.5 dB, the differences are not reflected in the rounded values presented above (see Appendix B).

The results in **Table 3** indicate that the predicted traffic noise levels at the selected receptors will be the same or lower for the Hybrid 3 alternative when compared against the 'Maintain' (or future baseline)

alternative. The predicted reductions in traffic noise impact are due to increase in source (i.e., Gardiner / Lakeshore) and receptor separation distances.

6.0 NOISE MITIGATION MEASURES

As indicated above, the traffic noise predictions completed for the preferred alternative (i.e., Hybrid 3) demonstrate levels that would be the same or less than the future 'Maintain' alternative. As such, no traffic noise mitigation measures are warranted.

7.0 CONCLUSIONS AND NEXT STEPS

7.1 CONCLUSION

This traffic noise assessment report serves as a technical supporting document in support of an Environmental Assessment for the proposed Gardiner Expressway and Lake Shore Boulevard reconfiguration project. The report consists of predictive noise modelling for the baseline scenario (i.e., Maintain alternative) and three alternatives (Remove, Improve and Replace) as well as the preferred undertaking (Hybrid 3 alternative) and follows MOE/MTO joint protocol on traffic noise (1986). In ranking various alternatives the predicted traffic noise impact for various alternatives are compared against the baseline scenario. The assessment compares the change in noise levels at various selected receptors against the baseline scenario.

The Maintain alternative results in the highest noise impact for nearby receptors, while the Remove alternative results in the lowest noise impact. The predicted noise levels for the Replace and Improve alternatives are similar and are predicted to be less than the Maintain alternative but higher than the Remove alternative. The relatively high traffic volumes and faster moving vehicles along the Gardiner Expressway make this roadway a dominant noise source for receptors in its proximity. As such, removal of the Gardiner Expressway would result in a noticeable reduction in receptor noise levels.

For the preferred undertaking, since the key change in comparison to the Maintain alternative is the change in setback distances to receptors north and south of the Gardiner Expressway (west of DVP), the changes in noise levels are relatively minor and in all cases less than 5 dB. As such, noise mitigation measures are not required, as per MOE/MTO joint protocol.

7.2 NEXT STEPS

While no specific noise mitigation measures are required or proposed, it is recommended, and noted in the EA report (Table 6.3), that Gardiner traffic noise be considered in the planning and approval of new development in proximity to the undertaking..

The City of Toronto's Official Plan Policy 2.2.4 requires that new development on lands adjacent to existing and planned transportation corridors and facilities be compatible with, and supportive of, the long-term purpose of the corridors and facilities and be designed to avoid, mitigate or minimize negative impacts on, or from, the transportation corridors and facilities.

Future land development proposals in the vicinity of the preferred undertaking (the Hybrid 3) will need to satisfy City of Toronto noise study requirements, which often includes: the completion of a noise impact study for many development applications, including Zoning Bylaw Amendments, Site-specific Zoning Bylaws, Site Plan Control, Plans of Subdivision and Consent to Sever. Noise Impact Studies are to explore the following matters:

- Impact of noise generated by the development on the surrounding environment;
- Impact of noise from the surrounding environment (including transportation sources) on the
- development;
- Impact of noise generated by the development on itself; and,
- Mitigation measures to reduce the anticipated negative noise impacts.

The City of Toronto Development Guide includes terms of reference for the preparation of a noise impact study (http://www1.toronto.ca/static_files/CityPlanning/PDF/noise.pdf).

This Guide requires the consideration of Ministry of the Environment and Climate Change minimum standards for noise impacts for stationary uses, road and rail traffic, and air traffic, as applicable and references Noise Assessment Criteria in NPC-300 (formerly: Land Use Planning Publication LU-131).

8.0 CLOSURE

This traffic noise study Report has been prepared based on the information provided by the City of Toronto. This report is intended to provide a reasonable review of available information within an agreed work scope, schedule and budget. This report was prepared by Dillon for the sole benefit of the City of Toronto and to satisfy reporting requirements for an Environmental Assessment for the proposed Gardiner Expressway and Lake Shore Boulevard reconfiguration project. The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of this report preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that the report is to your satisfaction. Please do not hesitate to contact the undersigned if you have any further questions on this report.

Respectfully Submitted:

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Amir A. Iravani, Ph.D., P.Eng.
Associate

9.0 REFERENCES:

MOE/MTO. (1986). *Protocol for Dealing With Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments* .

MOECC. (2013). *Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300)*.

Appendix A

Traffic Data

Combined Name	Oneway	AWDT	% Medium Trucks	% Heavy Trucks	# of Lanes (in each direction)	Road Width (in each direction)	Posted Speed Limit
Commissioners St_Cherry St_Don Roadway	no	4978	1.93%	4.3%	2	7.2	50
Cherry St_Commissioners St_Villiers St	no	6729	1.93%	4.3%	2	7.2	50
Villiers St_Cherry St_Don Roadway	no	3277	1.93%	4.3%	2	6.7	40
Don Roadway_Villiers St_Lake Shore	no	12575	1.93%	4.3%	2	7.2	50
Don Roadway_Commissioners St_Villiers St	no	10275	1.93%	4.3%	2	7.2	50
Villiers St_Don Roadway_Saulter St	no	2812	1.93%	4.3%	1	3.4	40
Commissioners St_Don Roadway_Bouchette St	no	7172	1.93%	4.3%	2	7.2	50
Commissioners St_Bouchette St_Carlaw Ave	no	5740	1.93%	4.3%	2	7.2	50
Carlaw Ave_Commissioners St_Villiers St	no	7694	1.93%	4.3%	2	7.2	50
Lake Shore Blvd_Bouchette St_Carlaw Ave	yes	26800	3.36%	4.0%	3	10.8	70
Cherry St_Villiers St_Queens Quay	no	8793	1.93%	4.3%	1	3.6	60
Lake Shore Blvd_Parliament St_Cherry St	yes	15944	3.36%	4.0%	3	10.8	70
Lake Shore Blvd_Cherry St_Don Roadway	no	12278	3.36%	4.0%	3	10.8	70
Parliament St_Gardiner_Mill St	no	14231	1.93%	4.3%	2	7.2	50
Lake Shore Blvd_Sherbourne St_Parliament St	yes	9017	3.36%	4.0%	3	10.8	70
Queens Quay_Queens Quay_Gardiner	no	9193	1.93%	4.3%	1	3.6	60
Queens Quay E_Sherbourne St_Parliament St	no	12681	1.93%	4.3%	1	3.6	60
Queens Quay E_Jarvis St_Sherbourne St	no	14137	1.93%	4.3%	1	3.6	60
Lower Jarvis St_Queens Quay_Gardiner	no	6468	1.93%	4.3%	2	7.2	50
Queens Quay E_Young St_Jarvis St	no	18756	1.93%	4.3%	1	3.6	60
Lake Shore Blvd_Yonge St_Jarvis St	yes	10551	3.36%	4.0%	2	7.2	70
Lower Sherbourne St_Queens Quay_Gardiner	no	4762	1.93%	4.3%	1	3.6	50
Lake Shore Blvd_Jarvis St_Sherbourne St	yes	15049	3.36%	4.0%	3	10.8	70
Cherry St_Gardiner_Mill St	no	6693	1.93%	4.3%	1	3.6	50
Cherry St_Mill St_Front St	no	4557	1.93%	4.3%	1	3.6	50
Eastern Ave_Boulton Ave_Carlaw Ave	no	20067	1.93%	4.3%	2	7.2	60
Carlaw Ave_Lakeshore_Eastern Ave	no	9806	1.93%	4.3%	2	7.2	50
Lower Jarvis St_Gardiner_The Esplanade	no	31791	1.93%	4.3%	2	7.2	50
Lower Sherbourne St_The Esplanade_Front St	no	12057	1.93%	4.3%	1	3.6	50
The Esplanade_Jarvis St_Sherbourne St	no	6983	1.93%	4.3%	1	3.6	50

Parliament St_Mill St_Front St	no	13649	1.93%	4.3%	2	7.2	50
Mill St_Parliament St_Cherry St	no	7412	1.93%	4.3%	1	3.6	40
Don Valley Parkway_DVP Ramps_Eastern Ave	yes	39935	2.90%	2.8%	2	7.2	100
Don Valley Parkway_Gardiner_DVP ramp	yes	31847	2.90%	2.8%	2	7.2	100
Gardiner Expressway_Sherbourne St_Parliament St	no	103411	2.90%	2.8%	4	14.4	100
Gardiner Expressway_Yonge St_Jarvis St	no	80696	2.90%	2.8%	2	7.2	100
Parliament St_Front St_King St	no	13068	1.93%	4.3%	2	7.2	50
Parliament St_King St_Adelaide St	no	12447	1.93%	4.3%	2	7.2	50
Parliament St_Adelaide St_Richmond St	no	12811	1.93%	4.3%	2	7.2	50
Parliament St_Richmond St_Queen St	no	11863	1.93%	4.3%	2	7.2	50
Parliament St_Queen St_Shuter St	no	8902	1.93%	4.3%	2	7.2	50
Sherbourne St_Front St_King St	no	11512	1.93%	4.3%	1	3.6	50
Sherbourne St_King St_Adelaide St	no	11464	1.93%	4.3%	1	3.6	50
King St_Jarvis St_Sherbourne St	no	13203	1.93%	4.3%	2	7.2	45
Sherbourne St_Adelaide St_Richmond St	no	13055	1.93%	4.3%	1	3.6	50
Adelaide St_Sherbourne St_Parliament St	yes	20024	1.93%	4.3%	4	14.4	60
Sherbourne St_Richmond St_Queen St	no	12700	1.93%	4.3%	1	3.6	50
Richmond St W_Jarvis St_Sherbourne St	yes	19475	1.93%	4.3%	4	14.4	60
Sherbourne St_Queen St_Shuter St	no	10092	1.93%	4.3%	1	3.6	45
Queen St_Jarvis St_Sherbourne St	no	11334	1.93%	4.3%	2	7.2	45
Lower Jarvis St_The Esplanade_Front St	no	24102	1.93%	4.3%	2	7.2	50
The Esplanade_Church St_Jarvis St	no	6835	1.93%	4.3%	1	3.6	50
Jarvis St_Front St_King St	no	20027	1.93%	4.3%	2	7.2	50
Front St_Church St_Jarvis St	no	25477	1.93%	4.3%	2	7.2	50
Lower Jarvis St_King St_Adelaide St	no	18029	1.93%	4.3%	2	7.2	50
King St_Church St_Jarvis St	no	13874	1.93%	4.3%	2	7.2	45
Lower Jarvis St_Adelaide St_Richmond St	no	23276	1.93%	4.3%	2	7.2	50
Jarvis St_Adelaide St_Richmond St	no	20828	1.93%	4.3%	2	7.2	50
Jarvis St_Richmond St_Queen St	no	23978	1.93%	4.3%	2	7.2	50
Jarvis St_Queen St_Shuter St	no	22128	1.93%	4.3%	2	7.2	50
Queen St_Church St_Jarvis St	no	11276	1.93%	4.3%	2	7.2	45
Front St_Jarvis St_Sherbourne St	no	25728	1.93%	4.3%	2	7.2	50
Adelaide St_Jarvis St_Sherbourne St	yes	19219	1.93%	4.3%	4	14.4	60
Front St_Sherbourne St_Parliament St	no	24899	1.93%	4.3%	2	7.2	50

King St_Sherbourne St_Parliament St	no	9064	1.93%	4.3%	2	7.2	45
Richmond St W_Sherbourne St_Parliament St	yes	19231	1.93%	4.3%	4	14.4	60
Carlaw Ave_Queen St_Dundas St	no	8354	1.93%	4.3%	2	7.2	50
Queen St_Logan Ave_Carlaw Ave	no	9774	1.93%	4.3%	2	7.2	45
Broadview Ave_Eastern Ave_Queen St	no	8214	1.93%	4.3%	2	7.2	50
Queen St_King St_DVP Ramp	no	14793	1.93%	4.3%	2	7.2	45
Queen St_DVP ramp_Broadview Ave	no	14238	1.93%	4.3%	2	7.2	45
King St_River St_Queen St	no	8683	1.93%	4.3%	2	7.2	45
River St_Queen St_Shuter St	no	3304	1.93%	4.3%	1	3.6	40
Queen St_Shuter St_River St	no	8713	1.93%	4.3%	2	7.2	45
Queen St_River St_King St	no	10016	1.93%	4.3%	2	7.2	45
Sumach St_King St_Queen St	yes	2028	1.93%	4.3%	2	7.2	40
Cherry St_Front St_Eastern Ave	no	5761	1.93%	4.3%	1	3.6	50
Front St_Trinity St_Front St	no	6178	1.93%	4.3%	1	3.6	50
Cherry St_Eastern Ave_King St	no	5070	1.93%	4.3%	1	3.6	50
King St_Shuter St_River St	no	13329	1.93%	4.3%	2	7.2	45
Mill St_Cherry St_Bayview Ave	no	1143	1.93%	4.3%	1	3.6	40
Front St_Parliament St_Trinity St	no	23010	1.93%	4.3%	2	7.2	50
Trinity St_Front St_Eastern Ave	no	8467	1.93%	4.3%	1	3.6	40
Adelaide St_Parliament St_Cherry St	yes	20204	1.93%	4.3%	2	7.2	60
Adelaide St_Parliament St_St. Lawrence St	yes	29691	1.93%	4.3%	2	7.2	60
Eastern Ave_Trinity St_Cherry St	no	17390	1.93%	4.3%	2	7.2	50
Eastern Ave_Cherry St_DVP Ramps	yes	10035	1.93%	4.3%	2	7.2	60
Eastern Ave_Stl Lawrence St_DVP Ramps	yes	30374	1.93%	4.3%	3	10.8	60
Eastern Ave_Broadview Ave_Boulton Ave	no	21276	1.93%	4.3%	2	7.2	60
Eastern Ave_DVP ramps_Broadview Ave	yes	13046	1.93%	4.3%	2	7.2	60
Don Valley Parkway_Eastern Ave_Queen St	yes	47296	2.90%	2.8%	2	7.2	100
Logan Ave_Queen St_Dundas St	no	3631	1.93%	4.3%	1	3.6	40
Broadview Ave_Queen St_Dundas St	no	6571	1.93%	4.3%	2	7.2	45
Bayview Ave_Broadview Ave_Boulton Ave	no	12959	1.93%	4.3%	1	3.6	50
River St_Shuter St_Dundas St	no	8278	1.93%	4.3%	2	7.2	40
Sumach St_Queen St_Shuter St	yes	1383	1.93%	4.3%	2	7.2	40
Shuter St_Shuter St_River St	no	9041	1.93%	4.3%	1	3.6	50
Parliament St_Shuter St_Dundas St	no	7816	1.93%	4.3%	2	7.2	50

Shuter St_Sherbourne St_Parliament St	no	8087	1.93%	4.3%	1	3.6	45
Shuter St_Parliament St_Sumach St	no	9603	1.93%	4.3%	1	3.6	50
Sherbourne St_Shuter St_Dundas St	no	9630	1.93%	4.3%	1	3.6	45
Shuter St_Jarvis St_Sherbourne St	no	8541	1.93%	4.3%	1	3.6	45
Jarvis St_Shuter St_Dundas St	no	20938	1.93%	4.3%	2	7.2	50
Shuter St_Church St_Jarvis St	no	10438	1.93%	4.3%	1	3.6	50
Church St_King St_Adelaide St	no	14261	1.93%	4.3%	2	7.2	50
King St_Yonge St_Church St	no	13804	1.93%	4.3%	2	7.2	45
Church St_Front St_King St	no	13694	1.93%	4.3%	2	7.2	50
Adelaide St_Church St_Jarvis St	yes	17238	1.93%	4.3%	4	14.4	60
Church St_Queen St_Shuter St	no	14954	1.93%	4.3%	2	7.2	50
Queen St_Yonge St_Church St	no	13477	1.93%	4.3%	2	7.2	45
Church St_Richmond St_Queen St	no	16068	1.93%	4.3%	2	7.2	50
Richmond St W_Church St_Jarvis St	yes	21210	1.93%	4.3%	4	14.4	60
Church St_The Esplanade_Front St	no	4445	1.93%	4.3%	2	7.2	50
The Esplanade_Yonge St_Church St	no	5632	1.93%	4.3%	1	3.6	50
Wellington St_Yonge St_Church St	yes	19059	1.93%	4.3%	4	14.4	50
Boulton Ave_Queen St_Dundas St	no	7127	1.93%	4.3%	1	3.6	50
Queen St_Broadview Ave_Boulton Ave	no	13995	1.93%	4.3%	2	7.2	45
Queen St_Boulton Ave_Carlaw Ave	no	9986	1.93%	4.3%	2	7.2	45
Don Valley Parkway_Broadview Ave_Boulton Ave	yes	64346	2.90%	2.8%	4	14.4	100
Queen St_Parliament St_Sumach St	no	7504	1.93%	4.3%	2	7.2	45
Richmond St W_Yonge St_Church St	yes	19922	1.93%	4.3%	4	14.4	50
Church St_Adelaide St_Richmond St	no	15915	1.93%	4.3%	2	7.2	50
King St_Parliament St_Sumach St	no	9998	1.93%	4.3%	2	7.2	45
Queen St_Sherbourne St_Parliament St	no	9806	1.93%	4.3%	2	7.2	45
Gardiner Expressway_Jarvis St_Sherbourne St	no	103414	2.90%	2.8%	4	14.4	100
Yonge St_Gardiner_The Esplanade	no	19333	1.93%	4.3%	2	7.2	50
Gardiner Expressway_Parliament St_Cherry St	no	111505	2.90%	2.8%	4	14.4	100
Gardiner Expressway_Cherry St_DVP ramps	no	119462	2.90%	2.8%	4	14.4	100
Lower Sherbourne St_Gardiner_The Esplanade	no	12206	1.93%	4.3%	1	3.6	50
Yonge St_King St_Adelaide St	no	14627	1.93%	4.3%	2	7.2	50
Yonge St_Front St_King St	no	14458	1.93%	4.3%	2	7.2	50
Yonge St_Queen St_Shuter St	no	13457	1.93%	4.3%	2	7.2	50

Yonge St_Richmond St_Queen St	no	13425	1.93%	4.3%	2	7.2	50
Dundas St_DVP ramp_Broadview Ave	no	18334	1.93%	4.3%	2	7.2	50
Carlaw Ave_Eastern Ave_Queen St	no	9012	1.93%	4.3%	2	7.2	50
Adelaide St_Yonge St_Church St	yes	16064	1.93%	4.3%	4	14.4	50
Church St_Shuter St_Dundas St	no	15611	1.93%	4.3%	1	3.6	50
Dundas St_Yonge St_Church St	no	13283	1.93%	4.3%	2	7.2	50
Dundas St_Church St_Jarvis St	no	14643	1.93%	4.3%	2	7.2	50
Yonge St_Shuter St_Dundas St	no	14550	1.93%	4.3%	2	7.2	50
Yonge St_The Esplanade_Front St	no	21545	1.93%	4.3%	2	7.2	50
Dundas St_Jarvis St_Sherbourne St	no	10885	1.93%	4.3%	2	7.2	50
Dundas St_Sherbourne St_Parliament St	no	10173	1.93%	4.3%	2	7.2	50
Dundas St_Parliament St_Sumach St	no	10448	1.93%	4.3%	2	7.2	50
Dundas St_Shuter St_River St	no	11526	1.93%	4.3%	2	7.2	50
Dundas St_River St_DVP Ramp	no	15637	1.93%	4.3%	2	7.2	50
Dundas St_Broadview Ave_Boulton Ave	no	17811	1.93%	4.3%	1	3.6	50
Dundas St_Boulton Ave_Carlaw Ave	no	19145	1.93%	4.3%	1	3.6	50
Dundas St_Logan Ave_Carlaw Ave	no	20982	1.93%	4.3%	1	3.6	50
Front St_Yonge St_Church St	yes	10874	1.93%	4.3%	3	10.8	50
Shuter St_Yonge St_Church St	no	8133	1.93%	4.3%	1	3.6	50
Bouchette St_Commissioners St_Villiers St	no	4896	1.93%	4.3%	1	3.4	40
Lake Shore Blvd_Don Roadway_Bouchette St	yes	7783	3.36%	4.0%	2	7.2	70
Bayview Ave_Front St_Queen St	no	7870	1.93%	4.3%	1	3.6	50
Front St_Cherry St_Bayview Ave	no	7170	1.93%	4.3%	1	3.6	50

Appendix B

STAMSON Model Output

STAMSON 5.0 NORMAL REPORT Date: 22-01-2014 18:40:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 64_82r0t.te Time Period: 24 hours
Description: Receptor 10 Maintain Report 2014

Road data, segment # 1: GE_EB

Car traffic volume : 56352 veh/TimePeriod
Medium truck volume : 1733 veh/TimePeriod
Heavy truck volume : 1645 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: GE_EB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 202.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: GE_WB

Car traffic volume : 56352 veh/TimePeriod
Medium truck volume : 1734 veh/TimePeriod
Heavy truck volume : 1646 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: GE_WB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 217.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: LS_EB

Car traffic volume : 5686 veh/TimePeriod
Medium truck volume : 206 veh/TimePeriod
Heavy truck volume : 247 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: LS_EB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 200.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 10.00 m
Reference angle : 0.00

Road data, segment # 4: LS_WB

Car traffic volume : 5686 veh/TimePeriod
Medium truck volume : 206 veh/TimePeriod
Heavy truck volume : 247 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 4: LS_WB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 210.00 m
Receiver height : 1.50 m
Topography : 3 (Elevated; no barrier)
Elevation : 10.00 m
Reference angle : 0.00

Results segment # 1: GE_EB

Source height = 1.29 m

ROAD (0.00 + 66.10 + 0.00) = 66.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	77.39	0.00	-11.29	0.00	0.00	0.00	0.00	66.10

Segment Leq : 66.10 dBA

Results segment # 2: GE_WB

Source height = 1.29 m

ROAD (0.00 + 65.79 + 0.00) = 65.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	77.39	0.00	-11.60	0.00	0.00	0.00	0.00	65.79

Segment Leq : 65.79 dBA

Results segment # 3: LS_EB

Source height = 1.42 m

ROAD (0.00 + 53.74 + 0.00) = 53.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.99	0.00	-11.25	0.00	0.00	0.00	0.00	53.74

Segment Leq : 53.74 dBA

Results segment # 4: LS_WB

Source height = 1.42 m

ROAD (0.00 + 53.53 + 0.00) = 53.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.99	0.00	-11.46	0.00	0.00	0.00	0.00	53.53

Segment Leq : 53.53 dBA

Total Leq All Segments: 69.21 dBA

TOTAL Leq FROM ALL SOURCES: 69.21

Filename: r10_6482.te Time Period: 24 hours
Description: R10_64_82

Road data, segment # 1: GE_EB

Car traffic volume : 56352 veh/TimePeriod
Medium truck volume : 1733 veh/TimePeriod
Heavy truck volume : 1645 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: GE_EB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 186.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: GE_WB

Car traffic volume : 56352 veh/TimePeriod
Medium truck volume : 1734 veh/TimePeriod
Heavy truck volume : 1646 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: GE_WB

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 215.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: LS_EB

Car traffic volume : 5686 veh/TimePeriod
Medium truck volume : 206 veh/TimePeriod
Heavy truck volume : 247 veh/TimePeriod

```
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: LS_EB
---------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 200.00 m
Receiver height           :   1.50 m
Topography                :      3       (Elevated; no barrier)
Elevation                 :  10.00 m
Reference angle           :   0.00

Road data, segment # 4: LS_WB
-----------------------------
Car traffic volume  :  5686 veh/TimePeriod
Medium truck volume :   206 veh/TimePeriod
Heavy truck volume  :   247 veh/TimePeriod
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 4: LS_WB
---------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 210.00 m
Receiver height           :   1.50 m
Topography                :      3       (Elevated; no barrier)
Elevation                 :  10.00 m
Reference angle           :   0.00

Results segment # 1: GE_EB
--------------------------

Source height = 1.29 m

ROAD (0.00 + 66.46 + 0.00) = 66.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------------
-90     90   0.00  77.39   0.00 -10.93   0.00   0.00   0.00   0.00  66.46
-------------------------------------------------------------------------------

Segment Leq : 66.46 dBA
```

Results segment # 2: GE_WB

Source height = 1.29 m

ROAD (0.00 + 65.83 + 0.00) = 65.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	77.39	0.00	-11.56	0.00	0.00	0.00	0.00	65.83

Segment Leq : 65.83 dBA

Results segment # 3: LS_EB

Source height = 1.42 m

ROAD (0.00 + 53.74 + 0.00) = 53.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.99	0.00	-11.25	0.00	0.00	0.00	0.00	53.74

Segment Leq : 53.74 dBA

Results segment # 4: LS_WB

Source height = 1.42 m

ROAD (0.00 + 53.53 + 0.00) = 53.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.99	0.00	-11.46	0.00	0.00	0.00	0.00	53.53

Segment Leq : 53.53 dBA

Total Leq All Segments: 69.40 dBA

TOTAL Leq FROM ALL SOURCES: 69.40