

Appendix H – Air Quality Impact Assessment



PARSONS

Prepared for Metrolinx
by IBI Group & Parsons

METROLINX

Final

AIR QUALITY IMPACT ASSESSMENT

Durham-Scarborough Bus Rapid Transit between
Downtown Oshawa (in Durham Region) and
Scarborough Centre (in the City of Toronto)

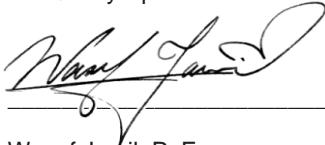
November 2021

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AIR QUALITY IMPACT ASSESSMENT

Durham Scarborough Bus Rapid Transit

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VERSION CONTROL

Issue	Revision No	Date Issued	Description	Reviewed by
1	0	25 March, 2021	Original	Fred Bernard
2	1	29 April, 2021	Revisions made per comments received from Metrolinx dated April 13, 2021	Fred Bernard
3	3	May 6, 2021	Revisions made per comments received from Metrolinx dated on April 30 and May 3, 2021	Wasef Jamil
4	4	May 19 2021	Revisions made per comments received from Metrolinx dated on May 10, 2021.	Wasef Jamil
5	5	May 28 2021	Revisions made per comments received from Metrolinx dated on May 25, 2021.	Wasef Jamil
6	6	June 7 2021	Revisions made per comments received from Metrolinx dated on June 4, 2021.	Wasef Jamil
7	7	June 15 2021	Revisions made per comments received from Metrolinx dated on June 14, 2021.	Wasef Jamil
8	8	July 6 2021	Revisions made per comments received from Metrolinx dated on June 30, 2021.	Wasef Jamil
9	9	November 8 2021	Final	Wasef Jamil
10	10	November 22 2021	Final	Wasef Jamil

EXECUTIVE SUMMARY

In 2018, Metrolinx completed the Durham-Scarborough Bus Rapid Transit (DSBRT) Initial Business Case. The study recommended a preferred Bus Rapid Transit (BRT) alignment between Downtown Oshawa (in Durham Region) and Scarborough Centre (in the City of Toronto). The project has now advanced to the Preliminary Design Business Case and Environmental Assessment/Transit Project Assessment Process (TPAP) phase in accordance with the Metrolinx Business Case Framework, for capital investment projects. IBI Group and Parsons are managing the project on behalf of Metrolinx and Durham Region, the co-proponents of the Project.

The DSBRT project proposes approximately 36 kilometres of dedicated transit infrastructure, connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. This project builds on the existing PULSE service and will provide more dedicated transit infrastructure along Highway 2 and Ellesmere Road to connect to Scarborough Centre. The corridor has varied traffic, land use conditions and constraints. With rapid growth in the past decade, and an expectation for this growth to continue into the future, travel demand along the corridor will continue to increase and higher capacity transit will be needed to link communities and employment on both sides of the Toronto-Durham boundary. Transit infrastructure will include a range of design solutions in different segments of the corridor. The preliminary design concept includes segments with buses operating with transit priority measures, and segments with dedicated curbside or centre-median transit lanes. The design concept varies by segment based on available space, travel demand, and land use context.

Arcadis Canada Inc. was retained by IBI Group (IBI) on behalf of Metrolinx, to complete an Air Quality Impact Assessment (AQIA) in support of the Transit Project Assessment Process (TPAP), as prescribed in Ontario Regulation 213/08 Transit Projects and Metrolinx Undertakings, for the DSBRT project (the "Project"). The design of the DSBRT developed by IBI and Parsons Corporation in partnership was used for this AQIA. This AQIA focuses on the potential BRT impacts.

An air quality and greenhouse gas (GHG) emissions inventory were completed for the future reference year 2041, with and without the proposed BRT Project. The air quality impacts of the Project were evaluated using detailed air dispersion modelling. Estimated concentrations of all pollutants of concern were shown to be below their corresponding ambient air quality criteria and standards for all scenarios, except NO₂, PM_{2.5}, benzo(a)pyrene and benzene, which have background concentrations already above their respective criteria and standards. However, due to future low emission engine technologies and fuels, air quality is predicted to improve over current conditions with or without the Project with respect to future benzo(a)pyrene and benzene concentrations.

Discussion of Existing Conditions

The results of the assessment show, through modelling and monitoring data, that the existing air quality in the proposed DSBRT corridor is typical of a suburban setting, which is characterized by

elevated pollution concentrations in relation to rural areas, with periodic exceedances of applicable air quality criteria. Available historical monitoring data near to the DSBRT corridor indicates that background concentrations of all contaminants assessed in this AQIA are within applicable criteria with the exception of NO₂, PM_{2.5}, benzene and benzo(a)pyrene concentrations which periodically exceed applicable criteria.

Discussion of Comparison of Existing Conditions with Future Scenarios

This air quality impact assessment identified that compared to Existing Conditions, concentrations of assessed contaminants are predicted to improve in Future scenarios despite increases in traffic resulting from population growth in the proposed DSBRT corridor. This improvement is a result of the assumptions such as future low emission engine technologies and fuels. The carbon dioxide equivalent (CO_{2e}) emissions are shown to also decrease in the future scenarios relative to Existing Conditions due to the fuel-efficient engines and newer technologies.

Discussion of Comparison for Future Scenarios

The assessment identified that, with the exception of NO₂ and PM₁₀ concentrations, the Future Build scenario will generally result in slight increase, no more than 6%, in pollutant concentrations at sensitive receptor locations compared to the Future No-Build scenario. As a result of the slight increase in gaseous and particulate levels, air pollutants attributable to the Project is deemed to be insignificant (i.e. <10%).

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ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Metre
AADT	Annual Average Daily Traffic
AAQC	Ambient Air Quality Criteria
Arcadis	Arcadis Canada Inc.
AQIA	Air Quality Impact Assessment
BaP	Benzo(a)pyrene
BRT	Bus Rapid Transit
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminants
CCME	Canadian Council of the Ministers of the Environment
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CH ₄	Methane
CWS	Canada-Wide Standard
ECCC	Environment and Climate Change Canada
EPR	Environmental Project Report
ETR	Express Toll Route
g/h	grams per hour
GHG	greenhouse gas
GTA	Greater Toronto Area
GWP	global warming potential
g/VKT	Grams per Vehicle Kilometre Travelled
km/hr	kilometers per hour
LRT	Light rail transit
MECP	Ontario Ministry of the Environment, Conservation and Parks
MNR	Ontario Ministry of Natural Resources
MOECC	Ontario Ministry of the Environment and Climate Change
MOVES	Motor Vehicle Emissions Simulator
MTO	Ontario Ministry of Transportation
POI	Point of impingement

NAPS	National Air Pollution Surveillance program
N ₂ O	Nitrous oxide
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
OLM	Ozone Limiting Method
PAH	Polycyclic aromatic hydrocarbons
PM ₁₀	Particulate matter less than 10 microns
PM _{2.5}	Particulate matter less than 2.5 microns
ppb	parts per billion
RVP	Reid Vapour Pressure
SO ₂	Sulphur dioxide
SCR	Selective Catalytic Reduction
TPAP	Transit Project Assessment Process
U.S. EPA	United States Environmental Protection Agency
VKT	Vehicle Kilometres Travelled
VMT	Vehicle Miles Travelled
VOCs	Volatile organic compounds

1 INTRODUCTION

1.1 Project Description

In 2018, Metrolinx completed the Durham-Scarborough Bus Rapid Transit (DSBRT) Initial Business Case. The study recommended a preferred Bus Rapid Transit (BRT) alignment between Downtown Oshawa (in Durham Region) and Scarborough Centre (in the City of Toronto). The project has now advanced to the Preliminary Design Business Case and Environmental Assessment/Transit Project Assessment Process (TPAP) phase in accordance with the Metrolinx Business Case Framework, for capital investment projects. IBI Group and Parsons are managing the project on behalf of Metrolinx.

The DSBRT project proposes approximately 36 kilometres of dedicated transit infrastructure, connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. This project builds on the existing PULSE service and will provide more dedicated transit infrastructure along Highway 2 and Ellesmere Road to connect to Scarborough Centre. The corridor has varied traffic, land use conditions and constraints. With rapid growth in the past decade, and an expectation for this growth to continue into the future, travel demand along the corridor will continue to increase and higher capacity transit will be needed to link communities and employment on both sides of the Toronto-Durham boundary. Transit infrastructure will include a range of design solutions in different segments of the corridor. The preliminary design concept includes segments with buses operating with transit priority measures, and segments with dedicated curbside or centre-median transit lanes. The design concept varies by segment based on available space, travel demand, and land use context.

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AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

Figure 1-1 Key Map of the Durham-Scarborough Bus Rapid Transit Corridor



Source: Metrolinx

2 STUDY AREA DESCRIPTION

The Highway 2 Bus Rapid Transit corridor is a crucial transportation corridor connecting people through the Region of Durham and Scarborough. The corridor has varied traffic, land use conditions and constraints. With rapid growth in the past decade and an expectation for this growth to continue into the future, demand for travel along the corridor will continue to increase and a higher capacity form of transit will be needed to link communities and employment on both sides of the Toronto-Durham boundary.

The Durham-Scarborough Bus Rapid Transit Project proposes approximately 36 kilometres of dedicated transit infrastructure, connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. This Project builds on the existing PULSE service and will provide more dedicated transit infrastructure along Highway 2 and Ellesmere Road to connect to Scarborough Centre. The corridor will improve connections between TTC, DRT and GO Transit services, allowing transit riders to get where they are going faster than before. The study area including the proposed BRT infrastructure alignment is presented in Figure 2-1.

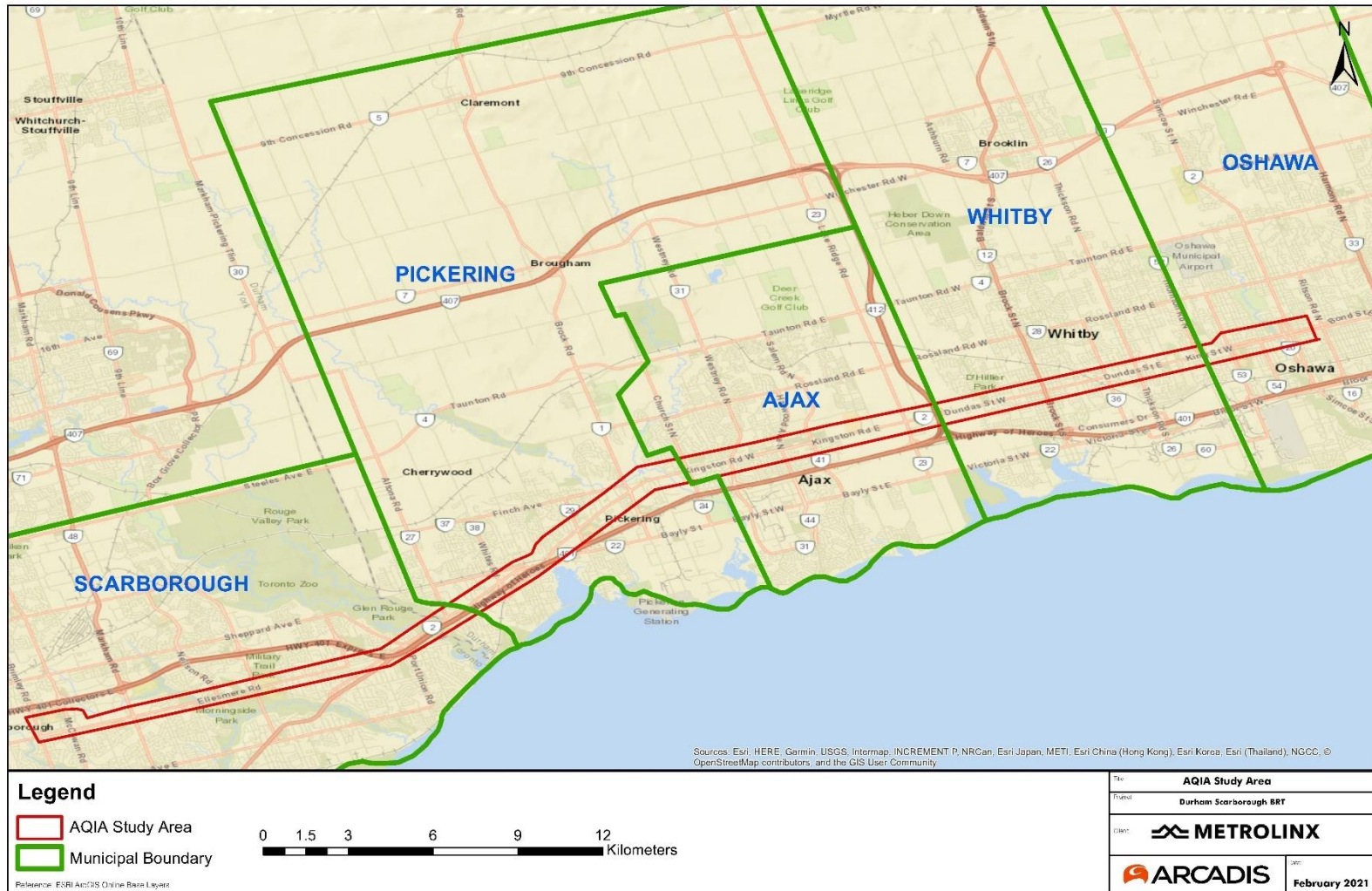
The study area for this AQIA is 300 metres (m) on either side of the corridor which runs east along Ellesmere Road and Highway 2 from Scarborough Center to Downtown Oshawa. This will ensure that the most significant project impacts are captured as the impact from roadway and bus corridors are local in nature and tend to decrease significantly at downwind greater than 300 m.

The Project does not currently include bus garages for the DSBRT, therefore such facilities were not considered in this AQIA.

The primary source of air contaminants within the study area are from the traffic throughout the arterial roadways within the Project corridor. Other insignificant minor sources of contaminants include sources of combustion from the residential and commercial properties within the study area.

AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

Figure 2- 1 Air Quality Impact Assessment Area along the Durham-Scarborough Bus Rapid Transit Corridor



3 AIR QUALITY IMPACT ASSESSMENT METHODOLOGY

3.1 AMBIENT AIR QUALITY CRITERIA

The Ontario Ministry of the Environment, Conservation and Parks (MECP) has developed Ambient Air Quality Criteria (AAQC) as a measure to protect outdoor air quality. An AAQC is a desirable concentration based on the protection against adverse effects on health and/or the environment and is meant to be used to assess general or “ambient” air quality conditions from all sources. As a result, the addition of a background contribution (i.e., sources other than project-related activities) is required before comparing to an AAQC.

The purpose of this assessment is to evaluate the potential effects of the Project on ambient air quality. Therefore, the model-predicted concentrations were added to local background concentrations and compared with the applicable AAQCs. Details about the selected criteria for each air contaminant of concern are provided in the sections below.

3.1.1 Fine Particulate Matter (PM_{2.5}) and Particulate Matter (PM₁₀)

Particulate matter less than 2.5 microns (PM_{2.5}) is known as “respirable” particulate since the particles are generally small enough to be drawn in and deposited into the deepest portions of the lungs. In particular, many studies have indicated that airborne PM_{2.5} is associated with various adverse health effects in people who have compromised respiratory systems from conditions such as asthma, chronic pneumonia and cardiovascular disease. Anthropogenic sources, such as combustion of fossil fuels like diesel, tend to be the largest contributor to PM_{2.5} levels in the environment.

Footnote 8 of *Ontario's Ambient Air Quality Criteria* (AAQC) document (MECP, 2020) presents an ambient air quality guide for decision making for PM_{2.5} of 30 µg/m³ (24-hour average), which is based on the Canadian Council of the Ministers of the Environment (CCME) Canada-Wide Standard (CWS) for fine particulate matter (CCME, 2000). However, the CCME has since replaced the CWS with a Canadian Ambient Air Quality Standards (CAAQS) which was officially enacted under the *Canadian Environmental Protection Act* on May 25, 2013 (CCME, 2012). The 24-hour PM_{2.5} CWS has been revised to a CAAQS of 28 µg/m³ (effective in 2015) and to 27 µg/m³ (effective in 2020). The CCME has also established an annual PM_{2.5} CAAQS for 2015 (10.0 µg/m³) and for 2020 (8.8 µg/m³).

The new standards are considered in this assessment in lieu of the current CWS for PM_{2.5} identified in the MECP AAQC document. Since the operational life of the Project will extend beyond 2020, the 2020 CAAQS were applied in this assessment.

Particulate matter less than 10 microns (PM₁₀) is considered the filterable size particulate; however, it has its own health effects and therefore was included in this assessment.

Table 3-1 below presents the PM_{2.5} and PM₁₀ ambient air quality criteria used in this assessment.

Table 3-1 Particulate Matter Ambient Air Quality Assessment Criteria/Standards

Pollutant	Averaging Period	Source	Air Quality
PM _{2.5}	24-hour	CAAQS	27 µg/m ³ [a]
	Annual	CAAQS	8.8 µg/m ³ [b]
PM ₁₀	24-hour	AAQC	50 µg/m ³

Notes:

[a] The 2020 CAAQS for 24-hour PM_{2.5} is based on the 98th percentile of 24-hour average concentrations, averaged over 3 consecutive years (CCME 2012).

[b] The 2020 CAAQS for annual PM_{2.5} is based on the 3 consecutive years average of the average annual concentrations (CCME 2012).

3.1.2 Criteria Air Contaminants

Criteria air contaminants (CACs) including nitrogen oxides (NO_x), sulphur dioxides (SO₂) and CO are considered common pollutants released into the air by activities such as the combustion of fossil fuels. Ozone is a CAC related to transportation; however, it is considered a secondary pollutant since it is formed through the photochemical reactions between NO_x and Volatile organic compounds (VOCs) directly emitted from transportation sources. Although ozone has not been included in this assessment, the primary pollutants, including the ozone precursors, have all been assessed as part of this study.

Nitrogen dioxide (NO₂) is a reddish brown, highly reactive gas that can be formed during high-temperature combustion in the presence of air. NO_x is the sum of NO, NO₂ and other oxides of nitrogen that play a major role in the formation of ozone. NO₂ has adverse health effects at much lower concentrations than NO. Consequently, the Ontario AAQC is based on the health effects of NO₂. The AAQC for NO₂ is 400 µg/m³ for a 1-hour averaging period and 200 µg/m³ for a 24-hour averaging period. There is currently no annual AAQC for NO₂. In November 2017, the CCME announced new 1-hour and annual average CAAQS for NO₂. The 1-hour standard is 60 ppb or 113 µg/m³ (effective in 2020) and 42 ppb or 79 µg/m³ (effective in 2025). The annual standard for 2020 is 17 ppb or 32 µg/m³ (effective in 2020) and 12 ppb or 22.6 µg/m³ (effective in 2025). The 1-hour CAAQS for NO₂ are more stringent than the AAQC. Since the operational life of the Project will extend beyond 2025, the 2025 CAAQS were applied in this assessment.

Sulphur dioxide (SO₂) is a colourless gas that smells like burnt matches. It can be oxidized to sulphur trioxide, which in the presence of water vapour, is readily transformed to sulphuric acid mist. SO₂ can be oxidized to form acid aerosols, and is a precursor of particulate sulphates, which are one of the main components of respirable particulates in the atmosphere. The AAQC for SO₂ 24-hour averaging period is 275 µg/m³, and 55 µg/m³ for an annual averaging period. In October 2016, the CCME officially enacted new 1-hour and annual average CAAQS for SO₂ which are

more stringent than the current AAQCs. The 1-hour SO₂ CAAQS is 70 ppb or 193 µg/m³ (effective in 2020) and 65 ppb or 179 µg/m³ (effective in 2025). The CCME has also established an annual SO₂ CAAQS for 2020 (5.0 ppb or 14 µg/m³) and for 2025 (4.0 ppb or 11 µg/m³). The 2025 CAAQS were applied in this assessment. In March 2018, the MECP updated AAQC for SO₂ that will take effect on July 1, 2023. The AAQC are 100 µg/m³ and 10 µg/m³ for the 1-hour and annual averaging periods, respectively. Since the 1-hour criteria is more stringent than the CAAQS, results of this assessment were also assessed against this standard.

Carbon monoxide (CO) is a colourless, odourless gas, formed when hydrocarbon-based fuels are not completely combusted. It is a component of motor vehicle exhaust, with high concentrations of CO generally occurring in areas with heavy traffic congestion. The AAQC for CO is 36,200 µg/m³ for a 1-hour averaging period and 15,700 µg/m³ for an 8-hour averaging period.

The ambient air quality criteria used in this assessment for criteria air contaminants are summarized in Table 3-2.

Table 3-2 Ambient Air Quality Assessment Criteria for NO₂, SO₂ and CO

Pollutant	Ambient Air Quality Assessment Criteria (µg/m ³)			
	Annual	24-hour	8-hour	1-hour
NO ₂	22.6 ^[b] (CAAQS)	200 (AAQC)	--	79 ^[a] (CAAQS)
SO ₂	10 ^[c,d] (AAQC, CAAQS)	275 (AAQC)	--	100 ^[c] (AAQC)
CO	--	--	15,700 (AAQC)	36,200 (AAQC)

Notes:

^[a] The 2025 CAAQS is based on the 3-year average of the annual 98th percentile of the NO₂ daily maximum 1-hour average concentrations (CCME 2017).

^[b] The 2025 CAAQS is based on the arithmetic average over a single calendar year of all 1-hour average NO₂ concentrations (CCME 2017).

^[c] The annual and 1-hour AAQC for SO₂ will take effect on July 1, 2023 (MECP 2018).

^[d] The 2025 CAAQS is based on the arithmetic average over a single calendar year of all 1-hour average SO₂ concentrations (CCME 2016).

3.1.3 Volatile Organic Compounds

Volatile organic compounds (VOCs) are defined technically as organic compounds having a saturation vapour pressure greater than 0.1 mm of mercury at 25 degrees Celsius (°C) and standard atmospheric pressure. Certain VOCs warrant special concern because they are capable of being transported very long distances in the atmosphere and play an important role in the

formation of ground-level ozone and fine particles. As part of this assessment, six (6) typical VOCs that are emitted from vehicles were included: acetaldehyde, acrolein, benzene, 1-3-butadiene, formaldehyde, and benzo(a)pyrene, which is a key representative of polycyclic aromatic hydrocarbons (PAHs).

The ambient air quality criteria used in this assessment for each of these VOCs are presented in Table 3-3.

Table 3-3 Ambient Air Quality Criteria for Selected VOCs

Pollutant	Ambient Air Quality Criteria ($\mu\text{g}/\text{m}^3$)		
	Annual	24-hour	1-hour
Acetaldehyde	--	500	--
Acrolein	--	0.4	4.5
Benzene	0.45	2.3	--
1-3 Butadiene	2	10	--
Formaldehyde	--	65	--
Benzo(a)pyrene	1.0E-05	5.0E-05	--

3.1.4 Greenhouse Gases

Fossil fuel combustion is the main source of GHG emissions related to this Project, which results in emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). For a given mixture of different GHGs, the carbon dioxide equivalent (CO_2e) is the unit of measure used to describe the amount of CO_2 that would have the same global warming potential as a mixture of GHGs when measured over a time period (typically a 100-year period). The CO_2e for a gas is calculated by multiplying the mass of the gas by its global warming potential (GWP). For example, the GWP for CH_4 over 100 years is 25 and for N_2O is 298 (IPCC, 2007). This means that the emission of 1 tonne of CH_4 is equivalent, in its warming potential, to the emission of 25 tonnes of CO_2 , and the emission of 1 tonne of N_2O is equivalent to the emission of 298 tonnes of CO_2 . There are no ambient air quality criteria for greenhouse gases.

3.2 Dispersion Modelling

In accordance with the detailed work plan developed in consultation with the Metrolinx and the MECP, an air quality assessment was conducted for the Project with and without the planned BRT for the future reference year 2041.

The assessment estimated the net change in pollutant emissions due to the BRT Project in the transportation corridor for each pollutant of concern: carbon monoxide (CO), nitrogen dioxide

(NO₂), sulphur dioxide (SO₂), volatile organic compounds (VOCs) (including 1,3-butadiene, acrolein, acetaldehyde, benzene, and formaldehyde), benzo(a)pyrene, which is a key representative of polycyclic aromatic hydrocarbons (PAHs), particulate matter less than 10 microns (PM₁₀), and particulate matter less than 2.5 microns (PM_{2.5}). To evaluate the potential impact of the Project on ambient air quality, the CAL3QHCR specialized transportation dispersion model was used to predict concentrations for those contaminants of concern. Model-predicted concentrations were added to local background concentrations and compared to applicable provincial and/or federal ambient air quality criteria. The air quality criteria used for this assessment are outlined in Section 3.1.

Where there are estimated increases in emissions due to the Project, their significance relative to emissions incurred on the corridor “now” and in the future reference year was estimated. As established by MTO, an increase of more than 10% is deemed significant.

In addition to modelling air contaminants of concern, the change in greenhouse gas (GHG) emissions was also evaluated following the assessment approach outlined in MTO’s “Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects” (MTO, 2020). The effects of the Project on climate change are considered and the assessment follows the draft guidance for the “Consideration of Climate Change in Environmental Assessment in Ontario” (MOECC, 2016). Details of the complete GHG and climate change assessment methodology are provided in Section 6.

3.3 Emission Inventory

To assess the impact on air quality from the presence of the proposed BRT, an emissions inventory for the Project including existing sources, along with an air dispersion modelling study, was completed.

This AQIA estimated the number of vehicle-kilometers travelled (VKT) within the study area incurred by private passenger vehicles (cars and light trucks), public vehicles (i.e., transit buses) as well as heavy vehicles such as transport trucks. Based on the VKT estimates, emissions for each pollutant of concern were estimated including: CO, NO₂, SO₂, VOCs, (including 1,3-butadiene, acrolein, acetaldehyde, benzene, and formaldehyde), benzo(a)pyrene, PM₁₀, and PM_{2.5}. Emissions were estimated for Existing Conditions (2019) as well as future conditions in 2041, with (Future Build) and without (Future No-Build) the proposed BRT.

3.4 Tailpipe Emissions

The vehicular exhaust emission rates were estimated for Existing Conditions, and for the Future No-Build and Future Build scenarios. Emission factors were obtained by running the U.S. EPA MOVES2014 model. The model output provided emission factors in grams per vehicle-kilometer travelled (g/VKT) for all contaminants of concern. All expected technological and regulatory

changes affecting future emissions are built into the model, in order to generate the most representative emission factors possible. Details about MOVES2014 inputs are provided in Appendix A.

All contaminants of concern considered in this study are emitted in vehicle exhaust. Additionally, particulate matter (PM₁₀ and PM_{2.5}) is emitted from the roadway surface as a result of tire/brake wear, and re-suspension of surface dust by: (1) the action of the tires on the surface; and (2) the wake created by the passing of the vehicle. Both tailpipe and mechanically generated fractions of PM₁₀ and PM_{2.5} were included in this study. Tailpipe emissions from vehicles are a function of many variables. Some of the more important parameters are listed below:

- age of the vehicle (newer vehicles emit less);
- number of kilometers which the vehicle has driven;
- emission control equipment;
- type of fuel (gasoline, diesel);
- Reid Vapour Pressure (RVP) of gasoline used (adjusted seasonally);
- ambient air temperature;
- vehicle speed;
- time spent idling; and,
- type of vehicle (car, light truck, heavy truck, bus, etc.).

Vehicular emissions are generally estimated by using emission factors in units of mass of contaminant emitted per vehicle, per distance travelled. To obtain a mass emission rate for a particular road section, the length of the road section is multiplied by the number of vehicles using that section to obtain the total VKT. The VKT are then multiplied by the appropriate emission factors.

As previously mentioned, it was assumed that the future bus fleet on the proposed BRT will be diesel fueled. Even though bus propulsion is expected to evolve away from diesel technology to more clean and sustainable systems such as natural gas or electric propulsion, the timing of this shift is uncertain. Therefore, by assuming that buses operating on the proposed BRT infrastructure will still be based on diesel technology, emissions from the proposed operating buses are thus conservative.

Table 3-4 summarizes the final vehicular exhaust emission factors used in the Existing Conditions and future reference year for idling conditions (based on the 4 km/h speed bin in MOVES), 25 km/h is the average operating speed of centre median BRT, 50 km/h, 60 km/h or 70 km/h which are the typical posted speed limits along the roadways. Emission factors are in g/VKT.

Table 3-4 Tailpipe Emission Factors for Cars, Medium and Heavy Trucks for 2019 and 2041

ear	Speed (km/h)	Passenger Cars (g/VKT)											CO _{2e} ***
		PM ₁₀ *	PM _{2.5} *	CO	NO _x	SO ₂	1,3-Butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Benzo(a)pyrene**	
2019	4	2.41E-01	5.90E-02	6.32E+00	3.55E-01	2.24E-02	8.98E-04	2.99E-03	2.59E-04	1.22E-02	4.65E-03	1.66E-05	1.15E+03
	50	4.41E-02	1.46E-02	1.70E+00	1.88E-01	4.28E-03	1.38E-04	4.90E-04	4.29E-05	2.10E-03	7.81E-04	5.37E-06	2.19E+02
	60	3.64E-02	1.30E-02	1.60E+00	1.88E-01	4.07E-03	1.24E-04	4.47E-04	3.93E-05	1.92E-03	7.16E-04	5.00E-06	2.08E+02
	70	2.56E-02	1.10E-02	1.45E+00	1.93E-01	3.84E-03	1.07E-04	3.91E-04	3.47E-05	1.70E-03	6.32E-04	4.57E-06	1.96E+02
2041	4	2.11E-01	3.24E-02	2.13E+00	4.69E-02	1.40E-02	1.46E-06	7.44E-04	9.35E-05	5.42E-03	1.77E-03	3.24E-06	7.22E+02
	50	3.44E-02	6.03E-03	5.96E-01	2.91E-02	2.69E-03	1.80E-07	1.16E-04	1.45E-05	8.21E-04	2.73E-04	9.32E-07	1.38E+02
	60	2.73E-02	5.06E-03	5.85E-01	3.26E-02	2.56E-03	1.65E-07	1.09E-04	1.36E-05	7.66E-04	2.55E-04	8.87E-07	1.32E+02
	70	1.75E-02	3.73E-03	5.75E-01	3.84E-02	2.43E-03	1.44E-07	9.92E-05	1.24E-05	6.97E-04	2.33E-04	8.44E-07	1.25E+02
Year	Speed (km/h)	Medium Trucks (g/VKT)											CO _{2e} ***
		PM ₁₀ *	PM _{2.5} *	CO	NO _x	SO ₂	1,3-Butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Benzo(a)pyrene**	
2019	4	8.89E-01	4.95E-01	1.10E+01	9.16E+00	3.82E-02	4.42E-03	4.63E-02	7.53E-03	3.65E-02	1.07E-01	5.78E-05	3.30E+03
	50	1.47E-01	6.86E-02	2.82E+00	1.41E+00	6.65E-03	5.74E-04	5.41E-03	8.65E-04	4.83E-03	1.23E-02	7.48E-06	5.58E+02
	60	1.24E-01	5.95E-02	2.33E+00	1.25E+00	5.73E-03	4.84E-04	4.78E-03	7.71E-04	3.84E-03	1.10E-02	6.88E-06	4.79E+02
	70	8.88E-02	5.01E-02	2.00E+00	1.13E+00	5.12E-03	3.81E-04	3.89E-03	6.35E-04	2.75E-03	9.00E-03	6.63E-06	4.23E+02
2041	4	4.44E-01	9.47E-02	3.33E+00	2.61E+00	3.50E-02	1.32E-04	1.28E-02	1.80E-03	1.22E-02	3.88E-02	3.08E-06	3.06E+03
	50	8.93E-02	1.70E-02	7.82E-01	4.15E-01	6.09E-03	1.42E-05	1.41E-03	1.97E-04	1.57E-03	4.24E-03	4.91E-07	5.16E+02
	60	7.31E-02	1.43E-02	6.68E-01	3.70E-01	5.25E-03	1.30E-05	1.26E-03	1.77E-04	1.23E-03	3.82E-03	5.45E-07	4.43E+02
	70	4.49E-02	1.06E-02	5.72E-01	3.39E-01	4.68E-03	1.07E-05	1.01E-03	1.43E-04	8.49E-04	3.09E-03	6.82E-07	3.91E+02
Year	Speed (km/h)	Heavy Trucks (g/VKT)											CO _{2e} ***
		PM ₁₀ *	PM _{2.5} *	CO	NO _x	SO ₂	1,3-Butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Benzo(a)pyrene**	
2019	4	4.09E-01	2.11E-01	1.09E+00	3.90E+00	8.74E-03	8.09E-04	1.33E-02	2.31E-03	2.92E-03	3.30E-02	1.75E-05	1.03E+03
	50	7.86E-02	4.25E-02	1.96E-01	8.07E-01	2.26E-03	9.16E-05	1.49E-03	2.59E-04	3.47E-04	3.68E-03	1.34E-06	2.67E+02
	60	6.15E-02	3.31E-02	1.74E-01	6.98E-01	1.90E-03	8.36E-05	1.35E-03	2.36E-04	3.13E-04	3.34E-03	1.20E-06	2.24E+02
	70	4.43E-02	2.72E-02	1.54E-01	6.57E-01	1.81E-03	7.16E-05	1.14E-03	1.99E-04	2.68E-04	2.80E-03	8.94E-07	2.14E+02
2041	4	2.44E-01	4.99E-02	3.49E-01	1.19E+00	8.68E-03	5.66E-05	4.90E-03	7.07E-04	1.04E-03	1.54E-02	3.17E-08	1.04E+03
	50	4.33E-02	1.01E-02	5.40E-02	2.21E-01	2.10E-03	5.80E-06	5.02E-04	7.24E-05	1.25E-04	1.57E-03	7.50E-09	2.53E+02
	60	3.41E-02	7.85E-03	4.93E-02	1.88E-01	1.75E-03	5.21E-06	4.52E-04	6.52E-05	1.10E-04	1.42E-03	5.73E-09	2.11E+02
	70	2.09E-02	5.71E-03	4.32E-02	1.70E-01	1.66E-03	4.18E-06	3.62E-04	5.23E-05	9.21E-05	1.14E-03	4.93E-09	1.99E+02
Year	Speed (km/h)	Diesel-Powered BRT (g/VKT)											CO _{2e} ***
		PM ₁₀ *	PM _{2.5} *	CO	NO _x	SO ₂	1,3-Butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Benzo(a)pyrene**	
2041	4	8.23E-01	1.83E-01	1.46E+00	5.58E+00	3.58E-02	2.26E-04	1.96E-02	2.83E-03	4.19E-03	6.15E-02	1.31E-07	4.30E+03
	25	2.20E-01	4.03E-02	2.17E-01	8.42E-01	5.08E-03	3.22E-05	8.75E-03	4.02E-04	5.96E-04	8.75E-03	2.04E-08	6.12E+02

Notes:
* Exhaust + tire wear + brake wear emission factors. Emission factors do not include road dust.
** B(a)P gas + B(a)P particle emission factors
*** Assumes the following global warming potentials: CH₄ = 25 and N₂O = 298

3.5 Mechanically Generated Dust Emissions

Emission factors for re-suspended particulate (PM₁₀ and PM_{2.5}) created by vehicles travelling along the major arterial roadways included in the assessment area were estimated using the methodology contained in Chapter 13.2.1 of the U.S. EPA's AP-42 document.

Equation 7.1 from Chapter 13.2.1 was used to estimate emissions:

$$E_i = k * (sL)^{0.91} * (W)^{1.02} \quad (1)$$

Where:

E_i = particulate emission factor (g/VKT)

k = particulate size multiplier (g/km)

sL = silt loading factor (g/m²)

W = average vehicle weight (tons)

The emission factors calculated for re-suspended PM_{2.5} and PM₁₀ and estimated the amount re-suspended particulate generated annually are summarized in Table 3-5 as shown below for different scenarios in the assessment.

Table 3-5 Summary of DSBRT Annual Suspended Particulate Emissions by Vehicle Types

Vehicle Types	Contaminant	Year	Particulate Size Multiplier (g/km) ²	Average Vehicle Weight (tons) ³	ADT Category	Silt loading (g/m ²)	Re-Suspended PM (g/VKT)	Re-Suspended PM (tonnes/year)
Cars	PM ₁₀	2019	0.62	2.8	>10000	0.03	0.0729	34.1
Cars	PM _{2.5}	2019	0.15	2.8	>10000	0.03	0.0176	8.3
Medium Trucks	PM ₁₀	2019	0.62	9.9	500 - 5,000	0.2	1.4855	8.8
Medium Trucks	PM _{2.5}	2019	0.15	9.9	500 - 5,000	0.2	0.3594	21.4
Heavy Trucks	PM ₁₀	2019	0.62	33	500 - 5,000	0.2	5.0724	45.0
Heavy Trucks	PM _{2.5}	2019	0.15	33	500 - 5,000	0.2	1.2272	10.9
Cars	PM ₁₀	2041 No Build	0.62	2.8	>10000	0.03	0.0729	37.5
Cars	PM _{2.5}	2041 No Build	0.15	2.8	>10000	0.03	0.0176	9.1
Medium Trucks	PM ₁₀	2041 No Build	0.62	9.9	500 - 5,000	0.2	1.4855	9.7
Medium Trucks	PM _{2.5}	2041 No Build	0.15	9.9	500 - 5,000	0.2	0.3594	2.3
Heavy Trucks	PM ₁₀	2041 No Build	0.62	33	500 - 5,000	0.2	5.0724	49.1
Heavy Trucks	PM _{2.5}	2041 No Build	0.15	33	500 - 5,000	0.2	1.2272	11.9
Cars	PM ₁₀	2041 Build	0.62	2.8	>10000	0.03	0.0729	37.0
Cars	PM _{2.5}	2041 Build	0.15	2.8	>10000	0.03	0.0176	8.9

Vehicle Types	Contaminant	Year	Particulate Size Multiplier (g/km) ²	Average Vehicle Weight (tons) ³	ADT Category	Silt loading (g/m ²)	Re-Suspended PM (g/VKT)	Re-Suspended PM (tonnes/year)
Medium Trucks	PM ₁₀	2041 Build	0.62	9.9	500 - 5,000	0.2	1.4855	6.6
Medium Trucks	PM _{2.5}	2041 Build	0.15	9.9	500 - 5,000	0.2	0.3594	1.6
Heavy Trucks	PM ₁₀	2041 Build	0.62	33	500 - 5,000	0.2	5.0724	45.04
Heavy Trucks	PM _{2.5}	2041 Build	0.15	33	500 - 5,000	0.2	1.2272	10.90
BRT	PM ₁₀	2041 Build	0.62	21	500 - 5,000	0.2	3.1988	41.47
BRT	PM _{2.5}	2041 Build	0.15	21	500 - 5,000	0.2	0.7739	10.03

Notes:

(1) Source: Equation 13.2.1 US EPA AP-42 Chapter 13

(2) Particle size multiplier etc. parameters are from AP-42 Chapter 13

(3) Vehicle weight information except BRT is made reference from the "Highway 407 Transitway: West of Brant Street to West of Hurontario Street Project". These figures were approved by MTO. BRT Bus weight data are provided by Parsons.

The road dust emission factor equation above also includes vehicle weight as a variable. For this assessment, the following vehicle weights were used:

- 2,500 kg gross vehicle weight for passenger vehicles
- 19,000 kg gross vehicle weight for buses within BRT (provided by Parsons);
- 9,000 kg gross vehicle weight for medium trucks;
- 30,000 kg gross vehicle weight for heavy trucks.

3.6 Air Dispersion Modelling

Local air quality impacts are characterized by concentrations of contaminants emitted from the sources within the study area. These concentrations will vary spatially and temporarily in response to changing atmospheric conditions (wind speed, wind direction, temperature, atmospheric stability and mixing height) and the amount of pollutant emitted. To calculate the concentration at a given location, an atmospheric dispersion model is used. The model takes the emissions from a source and disperses them into the surrounding atmosphere, typically using historical hourly meteorological data from a local weather station.

To assess the impact on air quality within the study area, air dispersion modelling was completed using the MTO recommended air dispersion model (MTO, 2020), CAL3QHCR which is described in further detail in the next section.

Local air quality impacts related to the Project emissions were assessed for eleven (11) pollutants and resulting concentrations were obtained for three different scenarios (see Sections 5.1.1 to 5.1.3 for a list of scenarios).

3.6.1 CAL3QHCR

CAL3QHCR is a model developed specifically to predict the changes in downwind air quality resulting from vehicle emissions from free-flowing traffic conditions and near roadway intersections (U.S. EPA, 1995). The model combines the CALINE-3 (Benson, 1979) line source dispersion model and a traffic algorithm for estimating vehicular queue lengths at signalized intersections. The CALINE-3 line source dispersion model predicts more realistic concentrations immediately around roads because of the initial mixing in the wake zone of the vehicle. This initial mixing, combined with the traffic algorithm for queuing (added emissions from idling vehicles), provides improved model predictions of the impact of vehicle tailpipe emissions adjacent to roadways. CAL3QHCR includes additional calculations for approximating emissions near roadway intersections.

CAL3QHCR requires the input of roadway geometries, receptor locations, vehicular emission factors, signal timing, intersection configuration, and meteorological data.

The CAL3QHCR model guidance documents recommend using a source release height of 0 m. All sources were assigned a release height of 0 m with the exception of bridges and complex overpasses which were all assigned a source release height of 10 m.

The CAL3QHCR model was originally designed to simulate dispersion of CO and PM_{2.5} from roadways. However, it is applicable to all gaseous pollutants, provided that minor alterations to the model source code are made. To model NO₂, SO₂ and VOC emissions, the model was modified to reflect the difference in the contaminant's molecular weight.

In CAL3QHCR, each road link that is modelled has an associated vehicle count and pollutant emission factor for each hour of the day. Since emission factors differ by vehicle class, the vehicle mix was used to calculate a weighted average emission factor for each pollutant for a given road link based on the fraction of cars and trucks that travel on it.

Typical hourly traffic profiles for weekdays were provided by Parsons and were used to develop emission factors for each pollutant for each hour of the day. This assessment considers both weekday and weekend hourly traffic patterns are the same.

3.7 Meteorological Data

The meteorological data requirements for the comprehensive analysis include hourly meteorological data on mixing height, temperature, cloud cover, cloud opacity, wind speed and wind direction, surface wind direction and velocity, stability class, and mixing height.

The meteorological dataset processed with upper air data from the U.S. National Weather Service's Buffalo station and surface data from the Environment and Climate Change Canada's Toronto international airport station, with missing data filled with those from the Buttonville airport station for the period from 1996 to 2000 was used in conjunction with the CAL3QHCR model. Surface data were processed as per the MECP-endorsed MTO "Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects" (MTO, 2020), and hourly mixing heights were estimated using the U.S. EPA's regulatory meteorological pre-processor PCRAMMET.

Typically, five years of hourly meteorological data are used in dispersion modelling calculations, as recommended by the U.S. EPA in order to include all of the possible combinations of meteorological conditions expected to occur in the area to be modelled. The CAL3QHCR model can process only one year of data per model run, therefore the results for each year of meteorological data were compared to determine the maximum concentration for each contaminant. The models were run for five years of meteorological data to determine maximum contaminant concentrations at all the sensitive receptor locations (see Section 1).

3.8 Air Quality Sensitive Receptors

A total of 108 sensitive receptors as described in Section 3.8, were placed from the roadway extending to 300 m running parallel to the road links defined within the AQIA study area.

3.9 NO_x to NO₂ Conversion

NO_x emissions are composed of nitric oxide (NO) and nitrogen dioxide (NO₂), with adverse health effects resulting from NO₂ at much lower concentrations than NO. Once NO is emitted to the atmosphere it reacts with other contaminants (primarily ground-level ozone – O₃) to produce NO₂. The portion of NO_x that will be converted to NO₂ is depended on the amount of ozone present. To calculate the amount of NO_x that will be converted to NO₂, the Ozone Limiting Method (OLM) is used. The Ozone Limiting Method (OLM) assumes:

if 90% of the modelled NO_x concentration (ppm) is less than the ambient O₃, then all of the NO will convert to NO₂:

$$[\text{NO}_2] = [\text{NO}_x]$$

if 90% of the modelled NO_x concentration (ppm) is greater than the ambient O₃, then the concentration of NO₂ will be equal to:

$$[\text{NO}_2] = [\text{O}_3] + 0.1 [\text{NO}_x]$$

The calculated NO₂ concentration at the maximum point of impingement (POI) using the OLM method in this study are shown in Table 3-6. POI is the point at which a contaminant contacts the ground or a building.

Table 3-6 NO₂ Calculation Using OLM Method

Year	Averaging Period (hr)	Modelled NO _x Concentration (ppb)	Background O ₃ Concentration (ppb)	OLM NO ₂ Concentration (ppb)	OLM NO ₂ Concentration (µg/m ³)
2019 Existing	1	65.10	42	48.2	90.6
	24	6.85	37	6.9	12.9
	Annual	1.88	28	1.9	3.5
2041 No-Build	1	13.50	42	13.5	25.4
	24	1.37	37	1.4	2.6
	Annual	0.36	28	0.4	0.7
2041 Build	1	18.8	42	18.8	35.4
	24	1.7	37	1.7	3.3
	Annual	0.4	28	0.4	0.8

The concentration of background ozone was taken as the maximum value of the maximum 90th percentile values (2015 to 2018) for measured ozone concentrations at the NAPS Toronto East Station (NAPS ID 60410) and Oshawa Station (NAPS ID 61703).

3.10 Sensitive Receptors

According to Metrolinx's "Environmental Programs and Assessment Draft Environmental Guide" (Metrolinx, 2015), "Sensitive Receptor" refers to a home, school, daycare building, hospital, retirement home and other "permanent" structure where humans spend a large portion of a day over extended periods of time (days to years). Among these, daycare buildings, hospitals and retirement homes are deemed to deserve greater attention, since they house larger numbers of individuals who may be more sensitive to air quality.

Sensitive receptors in this project were identified using recent aerial photography and by field reconnaissance. The sensitive receptors were identified to represent groups of receptors with similar exposure to the proposed BRT. Due to a large number of residences along the whole corridor, only the most representative residences to proposed BRT route are selected as sensitive receptor locations. The one hundred and eight (108) sensitive receptors are summarized in Table 3-7. Summary of sensitive receptors are illustrated from Figure 3-1 through Figure 3-2f.

Table 3-7 Summary of Sensitive Receptors

Receptor ID	UTM-X	UTM-Y	Receptor Locations
R 1	640267	4847870	Oasis Family Health Centre, Scarborough
R 2	640369	4848152	Town Care Walk-in Clinic, Scarborough
R 3	640641	4848264	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough
R 4	640665	4847935	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough
R 5	640720	4847954	Residential Receptor near Stanwell Drive, Scarborough
R 6	640775	4847971	Residential Receptor near Stoneton Drive, Scarborough
R 7	640814	4848054	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough
R 8	641482	4848241	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough
R 9	641573	4848301	Residential Receptor at 32 Pendle Hill Ct., Scarborough
R 10	641591	4848373	Maple Clinic- Virtual Care Clinic, Scarborough
R 11	642206	4848496	Salvation Army - Social services organization, Scarborough
R 12	642228	4848670	Residential apartment near Markham Road, Scarborough
R 13	642310	4848679	Residential apartment near Markham Road, Scarborough
R 14	642350	4848554	Residential apartment near Markham Road, Scarborough
R 15	643582	4848958	Residential Receptor near Orton Park Road, Scarborough
R 16	644380	4849347	Residential Receptor near Neilson Road, Scarborough
R 17	644490	4849283	Residential Receptor near Morningside Avenue, Scarborough
R 18	644520	4849197	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough
R 19	644584	4849103	The Shoniker Clinic, Scarborough
R 20	645390	4849669	Centennial College-Morningside Campus 1, Scarborough
R 21	645705	4849772	Receptor near Intersection of Military Trail & Ellesmere Road
R 22	645778	4849666	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road, Scarborough
R 23	645909	4849788	Residential Receptor near Military Trail and Military Trail & Ellesmere Road, Scarborough
R 24	647206	4850294	Residential Receptor at Scarbell Drive, Scarborough
R 25	647697	4850743	Meadowvale Public School, Primary School, Scarborough
R 26	647704	4850776	Meadowvale Day Care Centre, Scarborough
R 27	648410	4850294	Residential Receptor near Kingston Road, Scarborough
R 28	648728	4851213	Rouge Valley Public School, Scarborough
R 29	648733	4851236	Scarborough Rouge Valley YMCA Child Care Centre
R 30	649108	4851276	81 Nature Pathway, Residential Receptor near Intersection of Port Union Road/Sheppard Ave. & Kingston Road, Scarborough
R 31	649177	4851297	80 Nature Pathway, Residential Receptor near Intersection Port Union Rd./Sheppard Ave. & Kingston Road, Scarborough
R 32	649620	4851219	Altamont Care Community, Scarborough

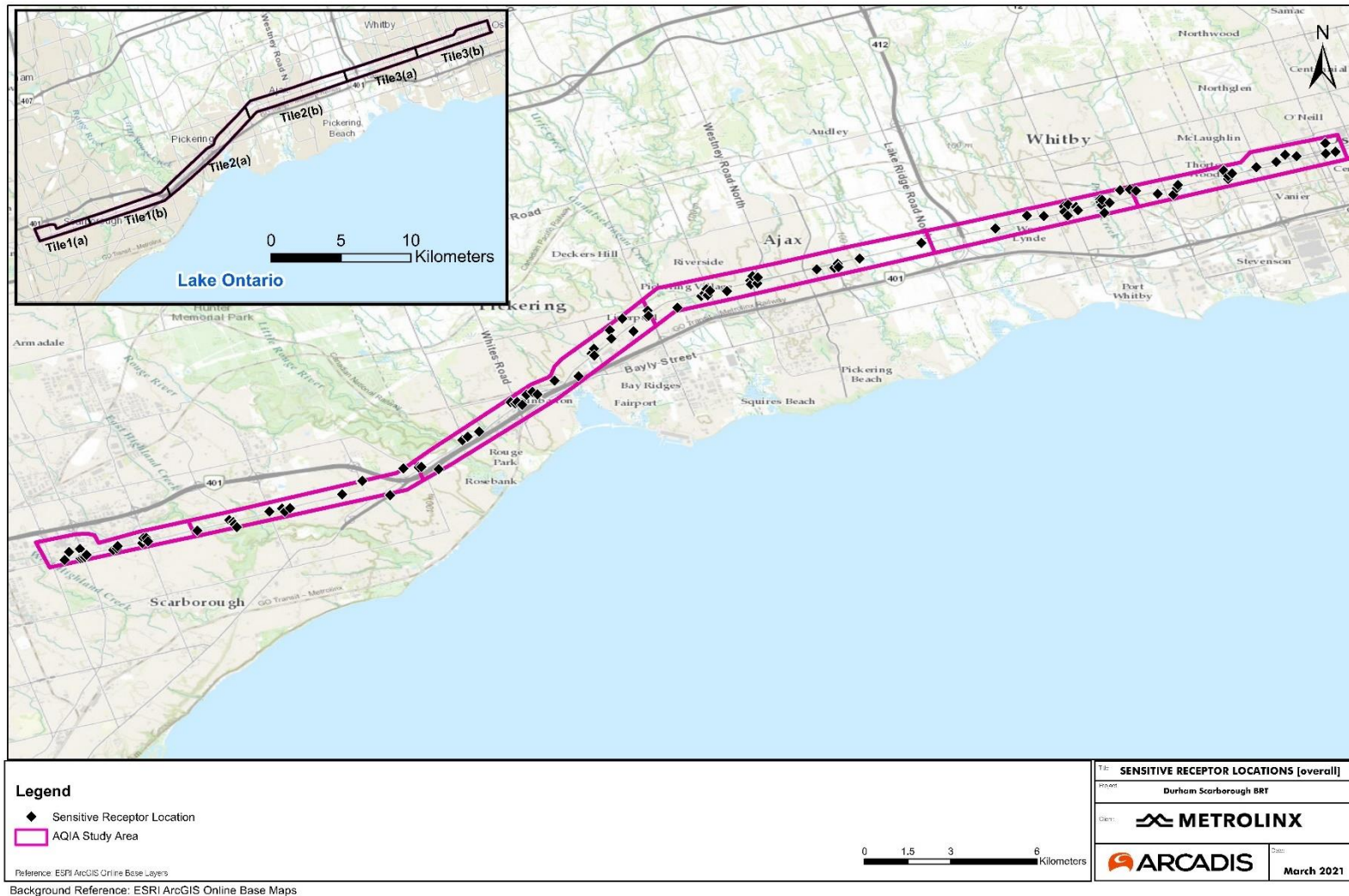
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R 33	650194	4852247	EDUKids Child Care Centres Altona Road, Pickering
R 34	650322	4852366	The Gates Medical Centre, Pickering
R 35	650611	4852559	Residential Receptor near Rougemount Drive, Pickering
R 36	651372	4853601	Dunbarton High School - Pickering
R 37	651495	4853556	Residential Receptor near Whites Road and RR 38 Kingston Road, Pickering
R 38	651540	4853601	Residential Receptor near Whites Road and RR 38 Kingston Road, Pickering
R 39	651666	4853506	Stripe Mall near Whites Road and RR 38 Kingston Road, Pickering
R 40	651772	4853866	Durham Drug Store Walk-In Clinic, Pickering
R 41	651915	4853965	Residential Receptor near Sheppard Ave, Pickering
R 42	652045	4853884	Bayfair Daycare, Pickering
R 43	652469	4854367	Muppets Children's Centre, Pickering
R 44	653064	4854539	Central Pickering Comprehensive Urgent Care Clinic, Pickering
R 45	653374	4855329	Residential Receptor near Kingston Road, Pickering
R 46	653429	4855263	Residential Receptor near RR29, Pickering
R 47	653432	4855504	EDUKids Child Care Centres Discovery Place Child Care, Pickering
R 48	653443	4855263	Residential Receptor near RR29 and Kingston Road, Pickering
R 49	653816	4856157	Glengrove School, Pickering
R 50	653858	4855861	VIVA Pickering Retirement Community, Pickering
R 51	654122	4856563	Community Lifecare At Home Inc - Retirement Home, Pickering
R 52	654412	4856135	Little Rose Home Daycare, Pickering
R 53	654736	4856659	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering
R 54	654750	4856855	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering
R 55	654774	4856678	Residential receptor near Brock Road, Pickering
R 56	655498	4856981	Alert Nursing & Home Care Service, Pickering
R 57	656089	4857391	EDUKids Child Care Centres St Georges Daycare, Ajax
R 58	656165	4857488	Receptor near Intersection of Kingston Road and Church Street, Ajax
R 59	656215	4857640	Residential Receptor near Church Street, Ajax
R 60	656248	4857427	Residential Receptor near Macey CT and Church Street, Ajax
R 61	656304	4857578	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax
R 62	656732	4857580	Lincoln Avenue Public School, Ajax
R 63	657312	4857964	Residential Receptor near Westney Road, Ajax
R 64	657327	4857835	Residential Receptor near Durham Street, Ajax
R 65	657363	4858112	Residential Receptor near Durham Street, Ajax
R 66	657490	4857869	Residential Receptor near Durham Street and Patterson CT., Ajax
R 67	657493	4858083	Westney Heights Medical Centre, Ajax
R 68	658968	4858390	Kingston Medical Clinic & Pharmacy, Ajax
R 69	659416	4858457	Residential Receptor near Lovegrove Lane, Ajax

AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

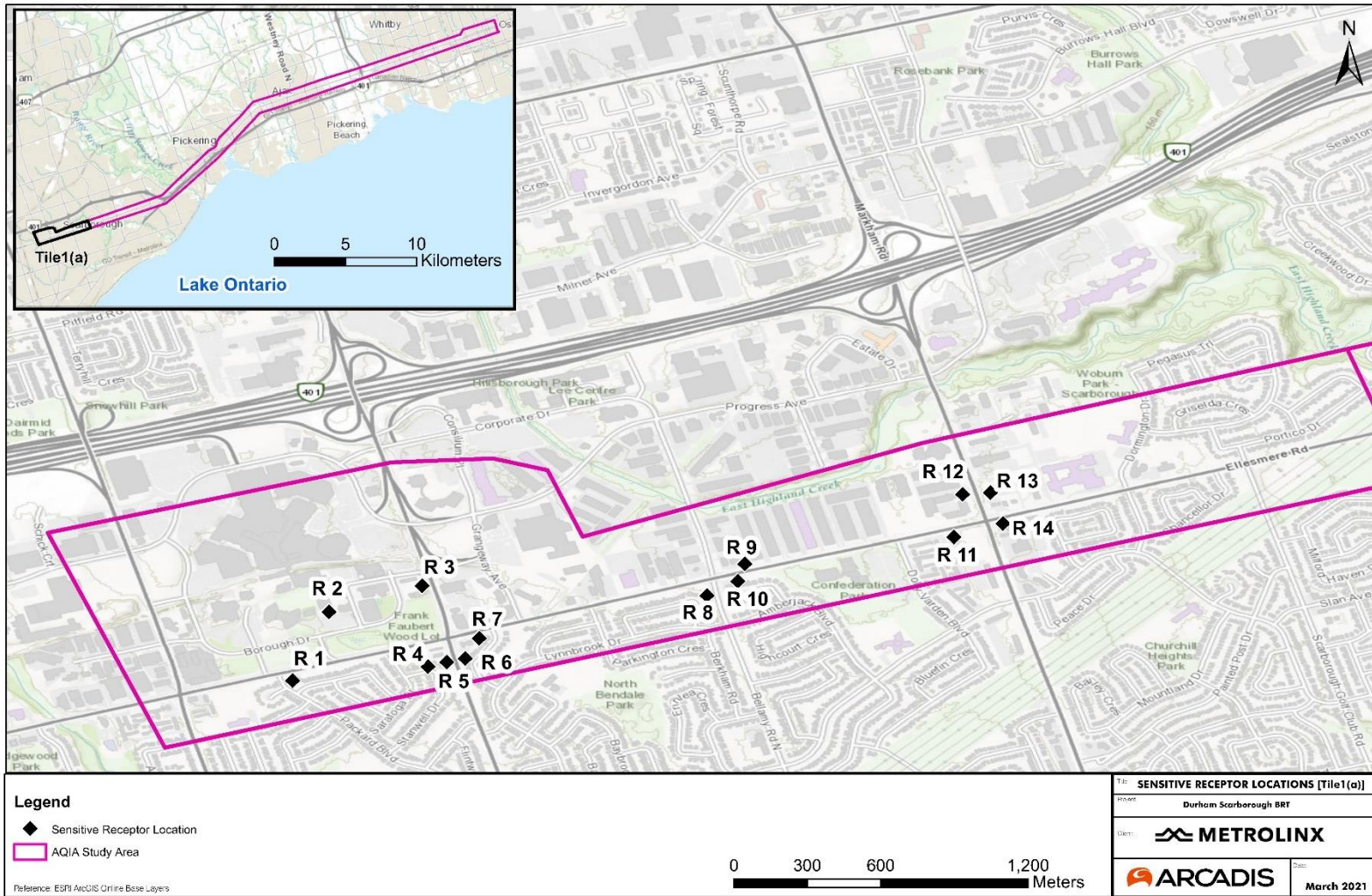
R 70	659493	4858595	Residential Receptor near Intersection of Salem Road and Highway 2
R 71	659518	4858480	Residential Receptor near Salem Road, Ajax
R 72	660044	4858794	Residential Receptor at Martinworth Lane, Ajax
R 73	661578	4859377	Residential Receptor near Lake Ridge Road, Whitby
R 74	663428	4859914	Residential Receptor Bluebell Crescent, Whitby
R 75	664218	4860387	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby
R 76	664638	4860381	Fairview Lodge Nursing home, Whitby
R 77	665139	4860729	Kids & Company, Whitby
R 78	665149	4860549	MyHealth Centre, Whitby
R 79	665241	4860800	East Whitby Clinic - Medical Clinic, Whitby
R 80	665244	4860416	Durham Montessori School & Daycare, Whitby
R 81	665440	4860723	Perry House Child Care Services, Whitby
R 82	665491	4860611	Blyth Academy Whitby - Private School, Whitby
R 83	666039	4860991	Residential Receptor near Garden Street, Whitby
R 84	666050	4860915	Residential Receptor near Garden Street, Whitby
R 85	666080	4860796	Residential Receptor near Garden Street, Whitby
R 86	666093	4860980	Residential Receptor near Garden Street, Whitby
R 87	666160	4860531	Trafalgar Castle School, Whitby
R 88	666280	4860886	Residential Receptor near Dundas Street, Whitby
R 89	666282	4860886	Residential Receptor near Lupin Drive, Whitby
R 90	666532	4861329	C.E. Broughton Public School - Public school, Whitby
R 91	666777	4861366	Anderson CVI highs School, Whitby
R 92	666934	4861315	St Theresa Catholic School, Whitby
R 93	666938	4861319	Fairy Glen Day Care Centre
R 94	667487	4861227	Learning Jungle Thickson, Whitby
R 95	667871	4861205	Whitby Medical Arts Urgent Care, Whitby
R 96	667957	4861439	Sunnycrest Nursing Homes Ltd., Whitby
R 97	667984	4861545	Residential Receptor near Kathleen Street, Whitby
R 98	669122	4862083	Residential Receptor near Thornton Road, Oshawa
R 99	669237	4861784	Residential Receptor near Thornton Road, Oshawa
R 100	669245	4861894	Residential Receptor near Thornton Road, Oshawa
R 101	669336	4861980	Residential Receptor near Stevenson Road, Oshawa
R 102	669941	4862222	Methadone Oshawa - New Direction Addiction Clinic, Oshawa
R 103	670434	4862412	Intrepid Medical Centre & Walk-in Clinic, Oshawa
R 104	670648	4862668	Extendicare Oshawa – Assisted Living Facility, Oshawa
R 105	670939	4862628	Residential Receptor near Fernhill Blvd., Oshawa
R 106	671648	4863099	Mary Street Community School, Oshawa
R 107	671673	4862730	Magic Pencils Learning Centre, Oshawa
R 108	671915	4862809	Oshawa Clinic - Medical Clinic, Oshawa

Figure 3-1 Sensitive Receptor Locations – Entire Durham-Scarborough Bus Rapid Transit Corridor



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Figure 3-2a Sensitive Receptor Locations Tile-1a



AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

Figure 3-2b Sensitive Receptor Locations Tile-1b

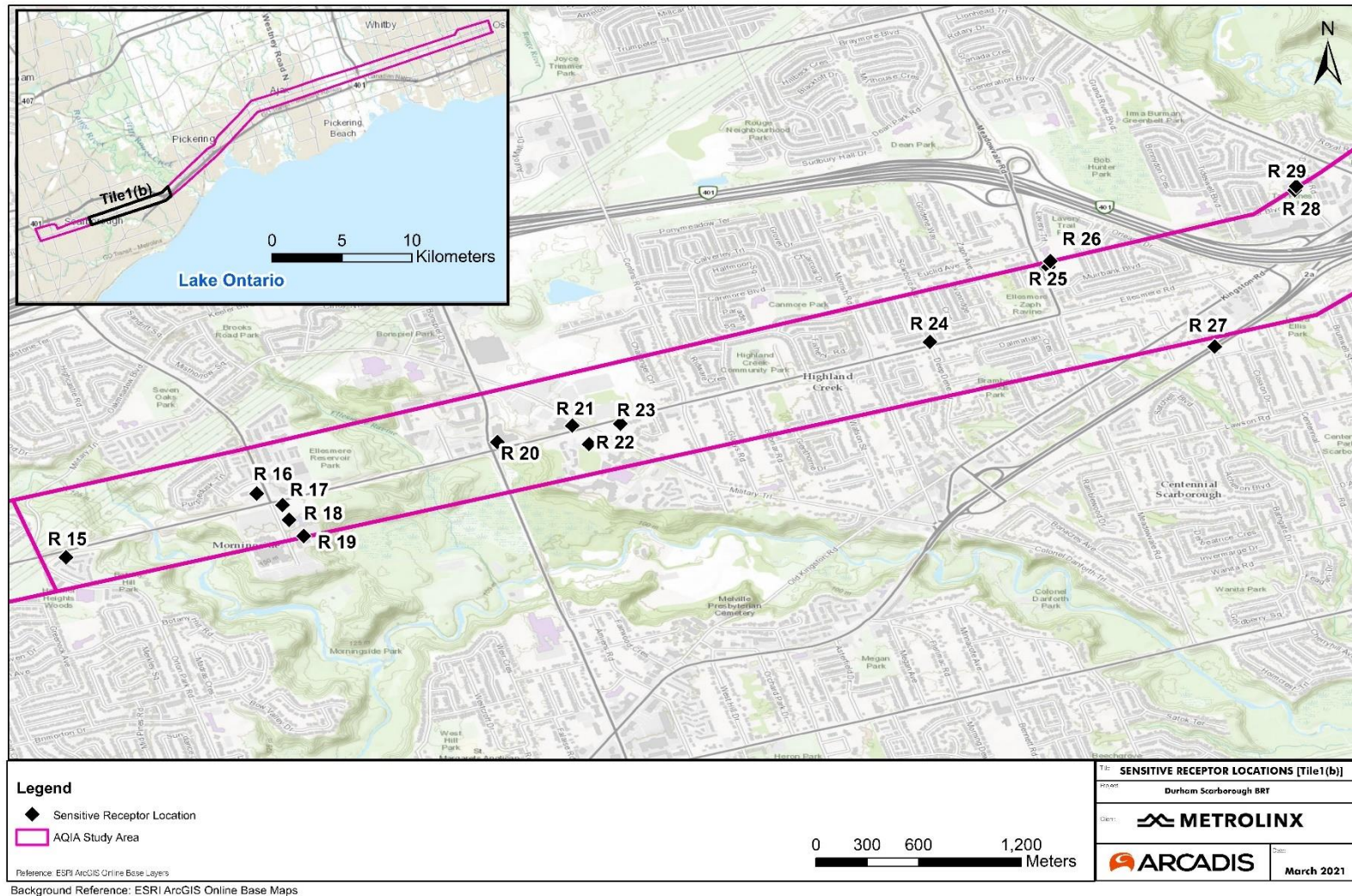
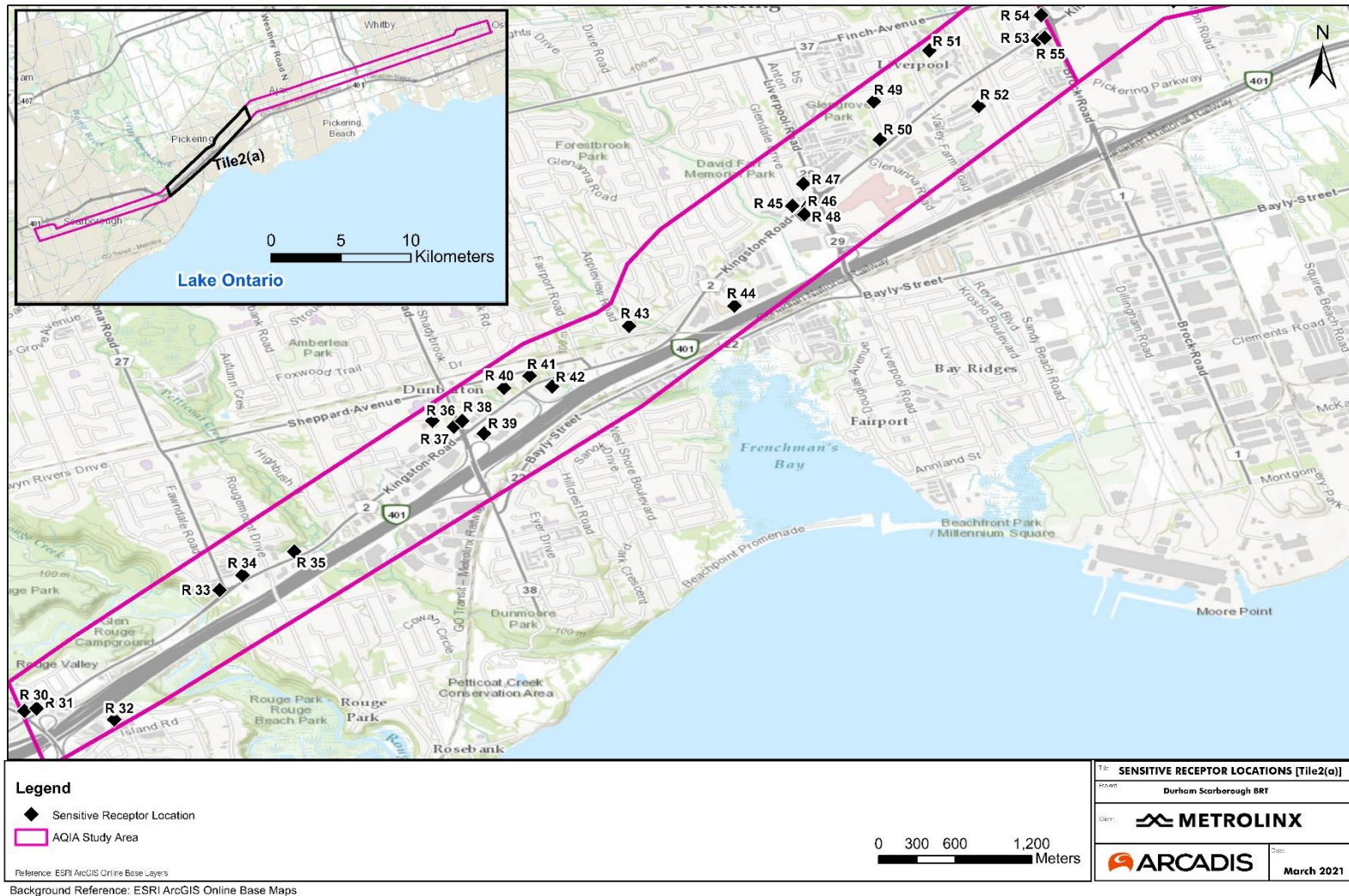
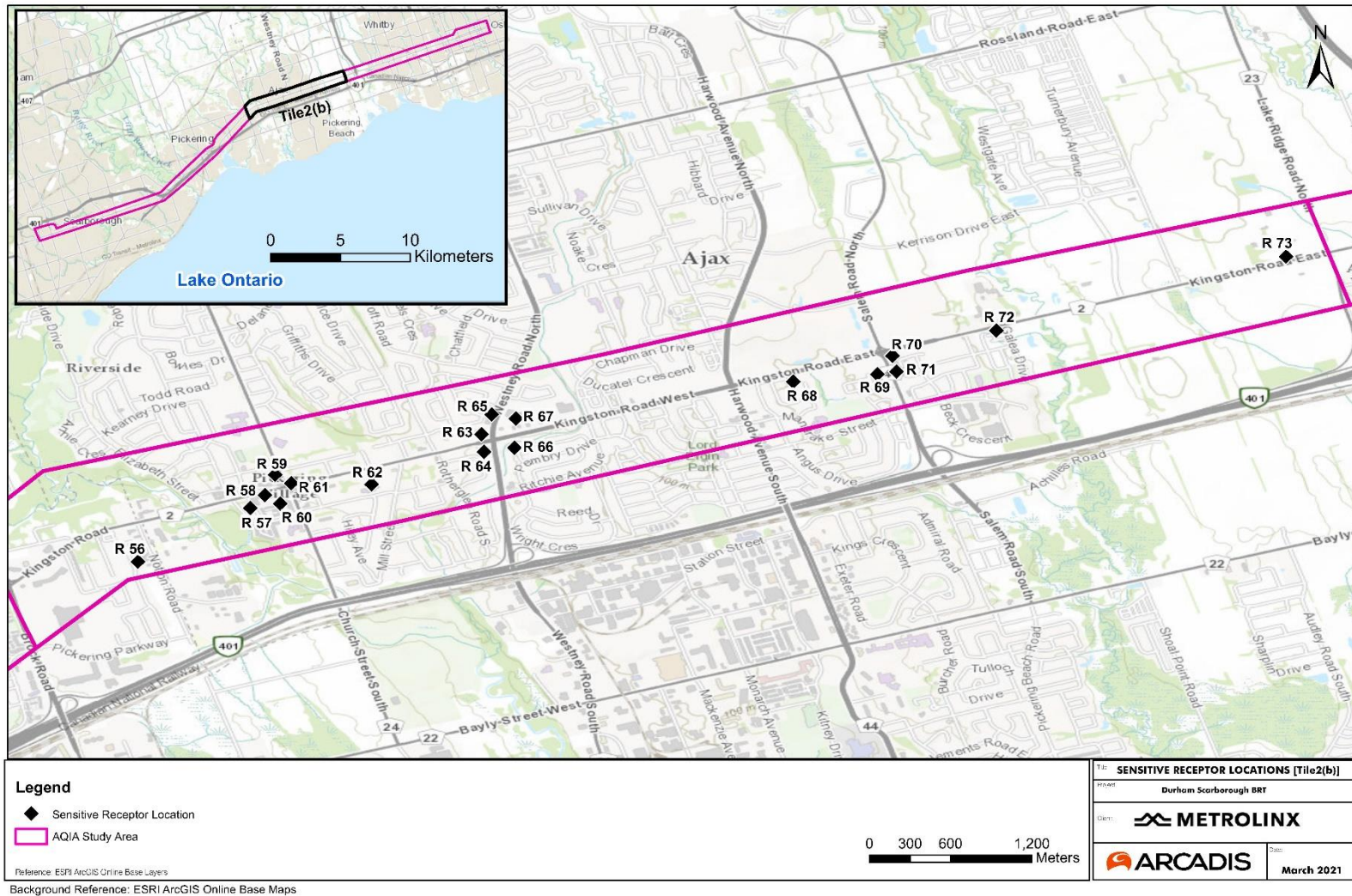


Figure 3-2c Sensitive Receptor Locations Tile-2a



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Figure 3-2d Sensitive Receptor Locations Tile 2b



AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

Figure 3-2e Sensitive Receptor Locations Tile 3a

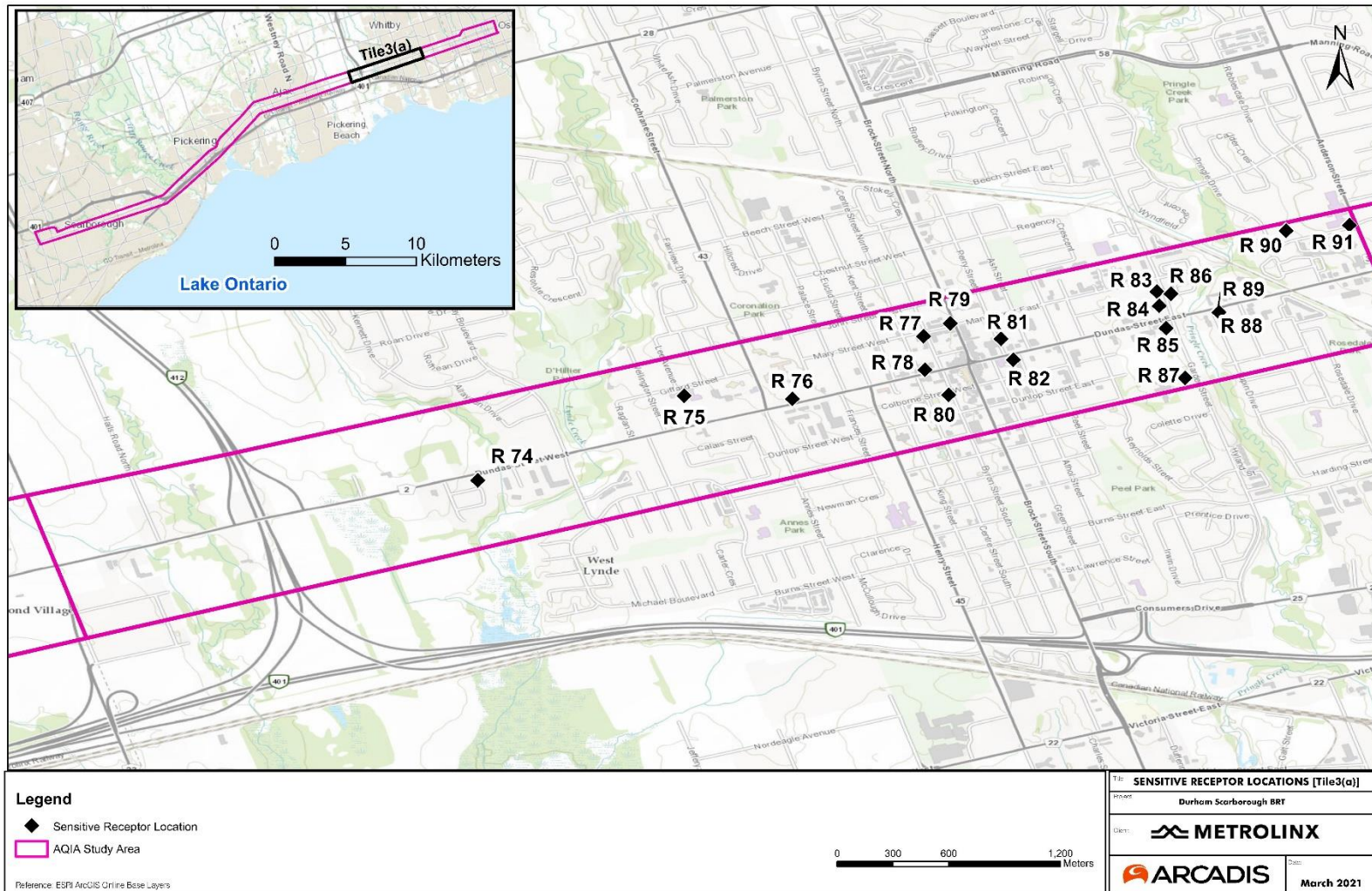
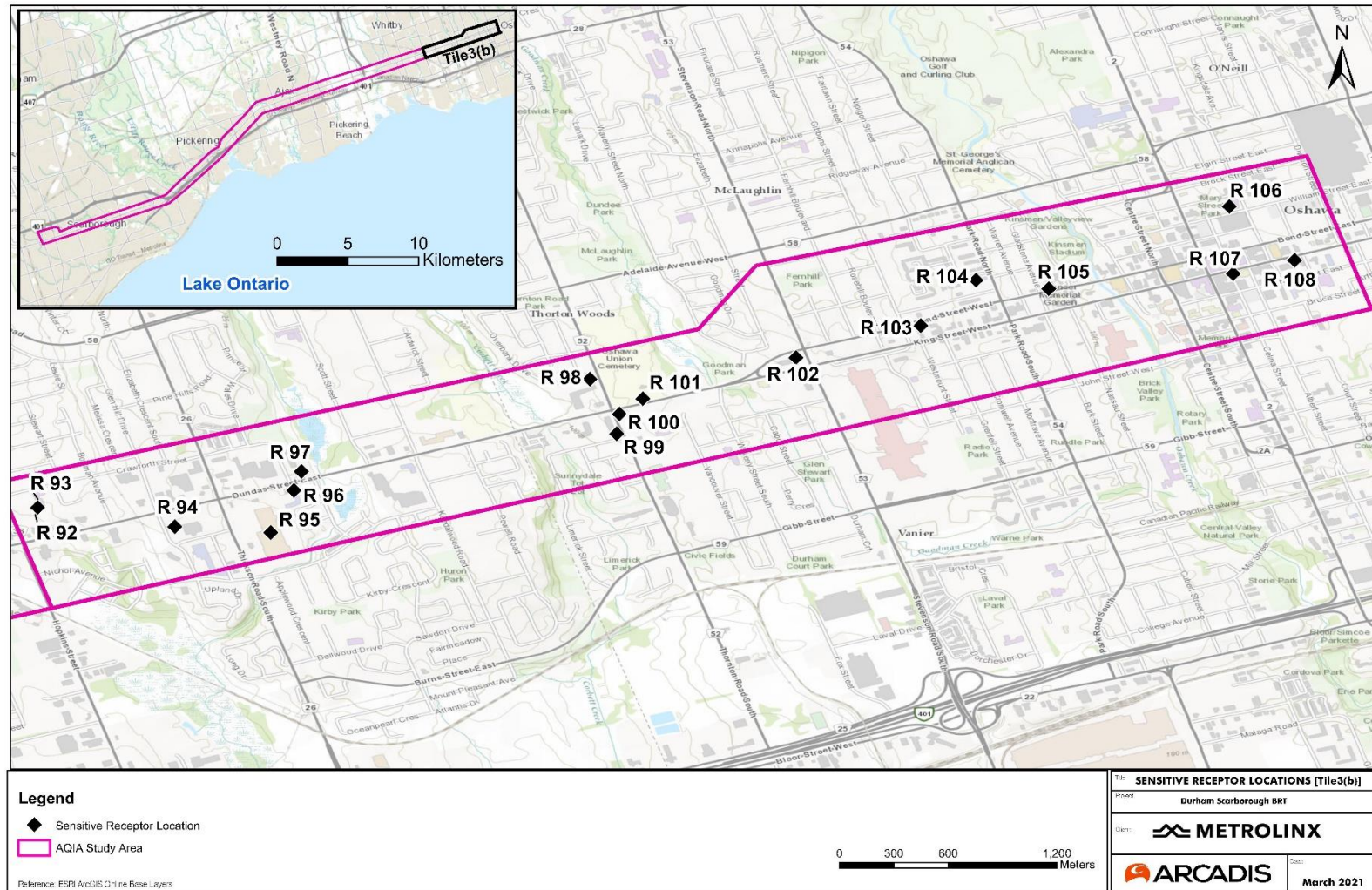


Figure 3-2f Sensitive Receptor Locations Tile 3b



4 EXISTING CONDITIONS

4.1 Existing Background Air Quality

Ambient background concentrations used in the air quality assessment represent the cumulative contribution of upwind sources such as industrial facilities, other roadways and transboundary pollution that are not included in the modelling. It is important to add background concentrations to modelled concentrations in order to assess the combined effect of all sources at a specific receptor location.

The MECP measures air contaminants at various locations throughout Ontario, and reports on the state of Ontario's air quality on an annual basis. A review of MECP monitoring stations in Ontario was undertaken to identify the monitoring stations that would be most representative of the DSBRT corridor and provide a conservative cumulative assessment. Data was obtained for the most recent consecutive five years available from the nearest representative monitoring stations to the DSBRT corridor. The 90th percentile values are considered conservative as they represent values that will only be exceeded 10% of the time under adverse meteorological conditions.

Environment and Climate Change Canada (ECCC) measures air contaminants at various locations throughout Canada, including Ontario, through its National Air Pollution Surveillance program (NAPS). There are currently four (4) NAPS stations located in the general vicinity of the DSBRT corridor. To assess the current air quality, with respect to VOCs, in the DSBRT corridor the most recently available monitoring data from the closest NAPS stations were considered. Not all contaminants are monitored at each NAPS and MECP monitoring location.

Table 4-1 outlines the monitoring stations considered for the study of Existing Conditions for the Project. Furthermore, Table 4-1 also summarizes the background data used, i.e. the 90th percentile concentrations of contaminants considered in this assessment.

AIR QUALITY IMPACT ASSESSMENT: DURHAM SCARBOROUGH BUS RAPID TRANSIT

Table 4-1 Summary of Monitoring Stations and Background Ambient Air Data Used

				Ambient Contaminants Concentrations (µg/m³) - 90th Percentile							
Contaminant	Averaging Period (hr)	NAPS Station ID	NAPS Station Name	2014	2015	2016	2017	2018	Maximum	AAQC/CAAQS (µg/m³)	% of AAQA/CAAQS
NO ₂	1	060430	Toronto West ¹	59	58	58	53	52	59	79	75%
	24	060430	Toronto West ¹	49	48	46	44	43	49	200	25%
	Annual	060430	Toronto West ¹	32	31	30	28	27	32	22.6	142%
CO	1	060430	Toronto West	458	458	458	458	389	458	36,200	1%
	8	060430	Toronto West	458	458	344	412	369	458	15,700	3%
PM ₁₀ ⁴	24	60410/060430	Toronto E/W ³	30	30	26	23	24	30	50	60%
PM _{2.5}	24	60410/060430	Toronto E/W ³	16	16	14	12	13	16	27	59%
	Annual	60410/060430	Toronto E/W ³	9.0	9.0	7.0	7.4	7.7	9.0	8.8	102%
SO ₂	1	060430	Toronto West	3.9	4.7	3.1	2.4	2.1	4.7	100	5%
	24	060430	Toronto West	3.7	4.7	2.9	2.3	2.2	4.7	275	2%
	Annual	060430	Toronto West	2.1	2.6	1.6	1.4	0.8	2.6	10	26%
Acetaldehyde	24	060439	Wallberg Building at U of Toronto	1.5	2.0	1.7	NA	NA	2.0	500	0%
Acrolein ⁵	1	060439	Wallberg Building at U of Toronto	0.072	0.070	0.065	NA	NA	0.072	4.5	2%
	24	060439	Wallberg Building at U of Toronto	0.072	0.070	0.065	NA	NA	0.072	0.4	18%
Benzene	24	065101	Newmarket	0.68	0.69	0.55	0.82	0.56	0.82	2.3	36%
	Annual	065101	Newmarket	0.45	0.46	0.35	0.47	0.47	0.47	0.45	104%
Benzo(a)pyrene ⁶	24	60430/60439	Toronto West/Welberg	NA	1.16E-04	8.89E-05	9.30E-05	NA	1.160E-04	0.00005	232%
	Annual	60430/60439	Toronto West/Welberg	NA	1.01E-04	5.29E-05	6.21E-05	NA	1.010E-04	0.00001	1010%

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Formaldehyde	24	060439	Wallberg Building at U of Toronto	2.8	1.6	2.6	NA	NA	2.8	65	4%
1,3-Butadiene	24	065101	Newmarket	0.034	0.062	0.039	0.039	0.033	0.062	10	1%
	Annual	065101	Newmarket	0.022	0.033	0.022	0.026	0.026	0.033	2	2%

Notes:

[1] Use the higher records at Toronto East or West

[2] CO is not monitored at Toronto East

[3] Toronto West recorded higher level of PM_{2.5} than in Toronto East during 2015

[4] PM₁₀ was not included in NAPS Station measurements, and therefore was estimated using PM_{2.5} measurements, assuming a ratio of 0.54 ug/m³ Source: "Estimation of historical annual PM_{2.5} exposures for health effects assessment", Atmospheric Environment Journal Issue 38, (2004)"

[5] Assume 1-hr concentration is same as 24-hr concentration.

[6] 2016 and 2017 data are from Toronto West

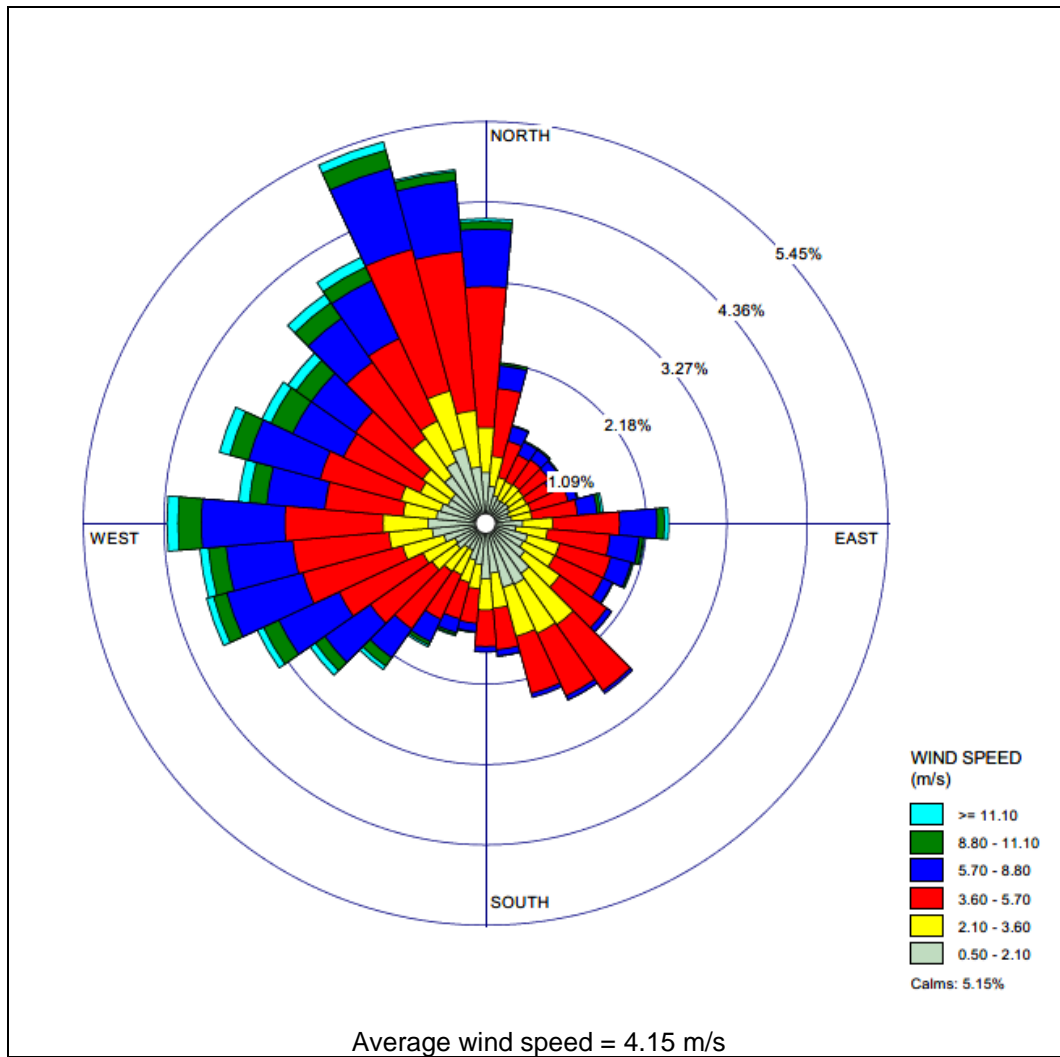
"NA" means no data or not enough data

The ambient concentrations of benzene (annual average) and benzo(a)pyrene currently exceed their respective AAQCs. The stations are considered representative of ambient air within the DSBRT corridor due to their proximity and similar urban intensity. Ambient air quality was estimated using 90th percentile ambient pollutant concentrations for appropriate time averaging periods. Gaps of six (6) days or more in raw background data measurements were filled using the 90th percentile of the existing data set for each station. For each contaminant, the selected background concentrations the maximum values measured from 2014 to 2018. It should be noted that historical monitoring data for PM_{10} are not available at any of these selected monitoring stations. As a result, PM_{10} background data were calculated using $PM_{2.5}$ monitoring data and a correlation factor of 0.54.

4.2 Meteorological Conditions

The frequency distribution of hourly surface wind speed and direction at the Toronto International Airport in the 5-year period from 1996 to 2000, in the form of a wind rose (i.e., a graphical representation of the frequency of winds from each direction) is presented on Figure 4-1. The average wind speed was 4.15 m/s.

Figure 4-1 **Wind Rose at Toronto International Airport for the Period 1996 to 2000 (wind blowing from)**



5 IMPACT ASSESSMENT

To assess the impact of the Project on air quality within the DSBRT corridor, the net change in pollutant concentrations due to the proposed BRT in the transportation corridor was calculated for the reference year 2041 and compared against the applicable criteria and standards. Where there are estimated increases in emissions, their significance relative to emissions incurred on proposed corridor “now” and in the future reference year without the Project was evaluated.

As identified in Section 3, one hundred eight (108) sensitive receptors were chosen to accurately represent the change in the DSBRT corridor for the Existing Conditions, Future No-Build, and Future Build scenarios.

5.1 Description of Assessment Scenarios

The potential air quality impacts associated with the Project were assessed by predicting air contaminant concentrations under three scenarios: Existing Conditions (2019), Future No-Build (without the proposed BRT in 2041), and Future Build (with the proposed BRT in 2041). Descriptions and assumptions used in each of the assessment scenarios are detailed in the following sections.

5.1.1 Existing Conditions (2019)

The proposed BRT infrastructure will be constructed in the major traffic corridor which runs east along Highway 2 and Ellesmere Road, approximately for 36 kilometres connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. Using the emissions estimating methods outlined in Section 3.3, an emissions inventory for Existing Conditions (2019) was developed. Dispersion modelling of the Existing Conditions was performed with CAL3QHCR as discussed in Section 3.2. Due to pandemic restrictions related to COVID-19, traffic conditions in 2020 and 2021 are not considered representative as it typically would for any given year at the corridor. Hence, the most recent period prior to the beginning of pandemic, i.e. traffic conditions in 2019 have been used as the Existing Conditions for this assessment.

5.1.2 Future No-Build (2041)

The expected year that the proposed BRT infrastructure will be in full operation is 2041. The Future No-Build (2041) scenario assumes that traffic volumes along the corridor will increase with population growth in the area. Projected traffic volumes were calculated based on annual growth rates provided by IBI Group. No changes to existing transportation infrastructure are assumed. However, improvements in vehicular combustion standards are expected. Therefore, an emissions inventory was developed using the methods outlined in Section 3.3 for this scenario with these considerations.

5.1.3 Future Build (2041)

The Future Build (2041) scenario is the same as the above future scenario except for the addition of the proposed BRT. The preferred alignment consists of a two-lane roadway (one lane in each direction) occupied solely by buses. In this scenario, buses are restricted to the corridor. It was assumed that the future bus fleet on the proposed BRT would be diesel fueled as a worst-case scenario. An emissions inventory was developed using the methods outlined in Section 3.3 for the Future Build scenario with the proposed BRT.

This scenario did not consider bus station locations where buses will briefly idle to allow passengers to board/depart buses. Idling bus emissions were not considered in this assessment. All stations will operate as regular bus street stops with passing lanes for express service; consequently, bus idling is not anticipated. Buses will only drop-off and pick-up passengers. In addition, during peak hours there will be approximately one bus per two minutes travelling through each of the stations; therefore, buses will stop for very short periods to allow passengers to board and exit. Therefore, the emissions from bus idling are expected to be insignificant.

5.1.4 Vehicle Emissions Estimation

The rate of contaminant emissions from a section of road is proportional to the number and types of vehicles travelling along that road as well as vehicle speed. Daily and hourly traffic flows for the 2019 horizon year were provided for the corridor and the proposed BRT infrastructure. IBI Group provided annual average daily traffic (AADT) volumes for the corridor and the proposed BRT for the following three scenarios:

- Existing Conditions (2019);
- Future No-Build (2041); and,
- Future Build (2041).

Note that according to Parsons, the number of buses will increase regardless of the implementation of the proposed BRT. However, the forecasted volume of buses if the proposed BRT is not implemented is uncertain at the time of preparing this report. As a result, the analysis followed a conservative approach which assumed that for the Future No-Build scenario, the traffic increment on the corridor does not include BRT buses. In other words, transit buses were not added to corridor in the absence of the proposed BRT infrastructure. However, average daily traffic volumes and daily VKT for the proposed BRT are presented in Table 5-1 for the Future Build scenario.

Table 5-1 Annual Average Daily Traffic Volumes (AADT) and Daily Vehicle Kilometres Travelled (VKT) for the Main Corridor and North-South Bound Roads (2041 Future Build Scenario)

Roadway	Vehicle Type	AADT*	Daily VKT
East-West Bound			
Ellesmere Road	Passenger Vehicle	246,474	2,386,794
(From McCowan Road to Altona Rd)	Medium Truck	3,944	38,193
	Heavy Truck	6,412	62,092
Kingston Road	Passenger Vehicle	410,653	6,181,554
(From Rougemount Dr to Regional Road 23)	Medium Truck	4,744	71,411
	Heavy Truck	7,233	108,884
Durham Regional Hwy 2 / Dundas Street W	Passenger Vehicle	247,953	2,584,171
(From Regional Road 23 to Stevenson Rd S/ Regional Rd 53)	Medium Truck	2,364	24,638
	Heavy Truck	3,602	37,536
Bond Street West	Passenger Vehicle	19,199	32,254
From Stevenson Rs S/ Regional Rd 53 to Simcoe Street N	Medium Truck	225	378
	Heavy Truck	325	546
King Street West	Passenger Vehicle	19,055	31,841
From Stevenson Rs S/ Regional Rd 53 to Simcoe Street N	Medium Truck	172	287
	Heavy Truck	272	454
From Grangeway Avenue (Scarborough) to Simco Streetreet North (Oshawa)	BRT	960	35,520
Roadway	Vehicle Type	AADT*	Daily VKT**
North-South Bound			
Ellesmere Road	Passenger Vehicle	151,285	90,771
Major North-South Bound Traffic from McCowan Road to Hwy 401 WB Off-ramp)	Medium and Heavy Truck	3,825	2,295
Kingston Road	Passenger Vehicle	264,531	158,718
Major North-South Bound Traffic from Rougemount Dr To Audley Road	Medium and Heavy Truck	7,357	4,414
Durham Regional Hwy 2 / Dundas St W	Passenger Vehicle	138,826	83,296
Major North-South Bound Traffic from Regional Road 23 to Thornton Road	Medium and Heavy Truck	4,260	2,556
Bond Street West	Passenger Vehicle	59,550	35,730

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Major North-South Bound Traffic from Stevenson Rs S/ Regional Rd 53 to Simcoe	Medium and Heavy Truck	1,261	757
King Street West	Passenger Vehicle	64,222	38,533
Major North-South Bound Traffic from Stevenson Rs S/ Regional Rd 53 to Simcoe	Medium and Heavy Truck	1,519	911

Notes:

* AADT and Daily VKT are based on two-way traffic volumes. The traffic data of each major segment above is the sum of traffic data from each sub-segment.

** The AQIA study area is 300 m from the BRT corridor.

6 RESULTS OF AIR QUALITY IMPACT ASSESSMENT

This section discusses both operational and construction phase air quality impacts for the Project. However, air quality impact from construction activity is expected to be temporary and unlikely to have long-lasting effects on the DSBRT corridor, and therefore discussed qualitatively in Section 6.1. Air quality mitigation measures during operational and construction phase are discussed in Section 7.1 and 7.2 respectively.

6.1 Construction Air Quality Impacts

This section discusses potential air quality impacts during construction phase of the Project qualitatively. The primary air quality concern from construction activities is dust generation due to material processing and combustion emissions from the operations of heavy construction equipment and vehicles.

The construction activities associated with the Project include the construction of bus stop, platforms, bus lanes and walkways. Major air emissions associated with construction include fugitive dust and construction vehicles and equipment tailpipe emissions. The sources are summarized below.

Sources of Construction Dust (PM₁₀ and PM_{2.5}) include:

- Road Surfaces: Dust from roads and access areas generated by haulage trucks and other mobile machinery movements during dry and windy conditions;
- Site Preparation: Bulk earthwork operations, such as excavation, rock breaking and clearing of vegetation i.e., disturbance of any dry material;
- Fabrication Processes: Emissions from dry work on concrete such as blasting, crushing, jackhammering, grinding, boring holes, sandblasting, polishing and sawing;
- Material Handling and Transfer Operations: Loading and unloading of construction materials to and from trucks;
- Storage Piles: Stockpiling of materials including material placement and removal;
- Windy Conditions and Exposed Surfaces: Wind erosion of stockpiles and dried mud tracking roads and other exposed and disturbed areas; and
- Demolition and Deconstruction: Demolition of concrete and masonry facilities.

Sources of air emissions from construction equipment/vehicle include:

- Diesel-powered construction equipment exhaust
- On-site diesel generators exhaust
- Construction vehicles exhaust.

Activities involving the mobilization and handling of soils, or materials with contaminant constituents require specific mitigation measures to ensure the impact to ambient air quality and human health is controlled.

Potential impacts can also be driven by atmospheric conditions as weather plays a significant role in dust generation during construction activities. Wind and dry conditions (i.e., low precipitation or low moisture content materials) contribute to the generation of dust during construction activities which can migrate off-site and affect overall air quality beyond the study area. In addition, during the warmer months of the year the heat and sunlight can react with gases and fine particles in the air around the Project which may contribute to the local air quality background concentrations.

Although wet weather conditions may serve to suppress dust generation during construction, the associated increased potential for erosion of soils during wet conditions create conditions that contribute to dust generating potential once dry conditions return. For example, increased transport of mud onto streets or, creation of ruts that increase the surface area of disturbed areas thus resulting in greater dust generation potential under dry conditions.

Air quality could also be potentially impacted by exhaust emissions from excavation equipment and haulage trucks; and exhaust emissions from stationary combustion equipment, including generators. Such exhaust emissions are typical CACs that are combustion by-products, i.e., diesel particulate matter (DPM), nitrogen oxides (NO_x), sulphur oxides (SO_x) and carbon monoxide (CO). Emissions resulting from combustions of diesel fuel can also include volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs) which are expected to be in relatively negligible amounts. It should be noted that these listed emissions are of temporary in nature and the sources are removed once construction is complete. Hence, the effects of these emissions are localized in nature and it is unlikely that such activities will add to the local air quality burden. Regardless, construction related impacts on air quality still need to be managed with mitigation measures and discussions are presented in Section 7.1 of this report.

6.2 Operational Air Quality Impacts

6.2.1 CAL3QHCR Modelling Results

The output from CAL3QHCR is the predicted 1-hour average concentration at each of the modelled receptor points for the gaseous pollutants and 24-hour average concentrations for particulate matter. Hourly data is post-processed to determine maximum predicted 1-hour, 8-hour and 24-hour average concentrations, as well as annual average concentrations.

Tables B-1 through B-21 in Appendix B present the model-predicted concentrations of criteria air contaminants (i.e., including background) for each applicable averaging period for the 108 sensitive receptor locations for each of three scenarios. The ambient background concentrations presented in Section 4.1 were added to the model-predicted concentrations to estimate worst-case ambient concentrations that could be realized as a result of the Project.

As presented in the following tables, Tables B-1 to B-21, with the exception of a few contaminants i.e. NO₂, Benzene and Benzo(a)pyrene, all model-predicted concentrations of PM₁₀, SO₂, PM_{2.5} and CO for all averaging periods for all three scenarios are well below applicable ambient air quality criteria even with the addition of background concentrations at the modelled receptors.

As presented in Table B-4 and B-6, the maximum 1-hour NO₂ concentrations and annual NO₂ concentrations, in the Existing scenario, exceed the 2025 CAAQS at several receptors. Similarly, the predicted NO₂ concentrations for 1-hour and annual averaging periods, in both Future Build and No-Build scenarios are in exceedance of the CAAQS. The maximum cumulative 24-hour NO₂ concentration predicted for Existing and Future Conditions are in compliance with air quality limits currently enforced in the province of Ontario.

Furthermore, the maximum cumulative concentrations of SO₂, as presented in Table B-7 to B-9, are well below the more stringent 1-hour and annual CAAQS and current and future AAQC.

VOC compounds of acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and benzo(a)pyrene were modelled and predicted results for the averaging periods with applicable air quality criteria are presented in Tables B-12 through B-21 in Appendix B. Model-predicted concentrations of VOCs for all averaging periods for all three scenarios are well below applicable ambient air quality criteria when combined with their respective 90th percentile ambient background concentrations. The only exceptions are the 24-hour and annual average benzo(a)pyrene and annual average benzene concentrations, where the background concentrations are already above their respective AAQC without any contribution from the Project.

Table B-22 through Table B-24 in Appendix B presents the highest concentrations and locations (i.e., UTM coordinates in km) where these highest concentrations occurred, for each modelled contaminant for the Existing Conditions, Future No-Build and Future Build scenarios.

6.3 Predicted Operational Air Quality Impacts at Different Scenarios

6.3.1 Comparison of Existing Conditions (2019) to Future Scenarios (2041)

Model-predicted concentrations for eleven (11) contaminants, under three (3) scenarios at sensitive receptors are presented in Tables B-1 to B-21 in Appendix B. The percent change in contaminant concentrations for the Future No-Build and Future Build scenarios relative to Existing Conditions is also presented in the tables. Tables B-1 through Table B-3 present predicted concentrations of PM₁₀ and PM_{2.5} which are shown to decrease under the Future scenarios relative to Existing Conditions.

Similarly, NO₂, CO, 1,3-butadiene and benzo(a)pyrene concentrations also decrease for the Future Build and Future No-Build scenarios relative to Existing Conditions (Tables B-4 through B-6, B-10 and B-11, B-17 and B-18, and B-20 and B-21). This is a result of the decrease in emission factors for every type of vehicle (passenger cars, light-duty trucks, medium duty trucks and heavy trucks). The decrease in emission factors in 2041 results in an overall decrease in contaminant concentrations at all sensitive receptor locations. The decrease in emission factors is due to the assumptions regarding the future improvements to vehicle combustion and exhaust control technology.

Table B-13 and Table B-14 show that there is a decrease in acrolein concentrations for the future scenarios relative to Existing Conditions which is also a direct result in an overall decrease in vehicle emission factors due to assumptions regarding the improvements in technology.

Tables B-7 through B-9, B-12, B-15 to B16, B-19 present the maximum predicted cumulative concentrations for SO₂, acetaldehyde, benzene and formaldehyde showing insignificant improvement i.e. less than 10% overall, for the Future Build and Future No-Build scenarios relative to Existing Conditions. The insignificant improvement in contaminant concentrations is due to the relatively high ambient contaminant concentrations in both Existing and Future scenarios. The modelled 24-hour contaminant contributions show an average reduction of more than 160% in Future Build scenario when compared to the Existing. See Table B-22 to B-24 for ambient contaminant levels and modelled contributions from the Project.

6.3.2 Comparison of Future No-Build and Future Build Scenarios

When assessing the merits of the proposed BRT Project compared to Future No-Build scenario, it is the incremental change in total model-predicted concentrations between the two future cases that is the true measure of the future impact of the Project. The same background concentrations are added to the modelled concentrations for both the Future Build and Future No-Build scenarios, therefore, when assessing the incremental change in the combined concentrations, the background concentration can essentially be taken out of consideration.

The percent change in predicted concentrations for Future Build relative to Future No-Build is presented in Tables B-1 through B-21 in Appendix B.

From this analysis, it appears that for most contaminants and most averaging periods, model-predicted concentrations are shown to stay relatively similar between the future scenarios at the receptor locations. The percentage change in the predicted concentration for the Future Build scenario relative to the Future No-Build scenario for all modelled contaminants is insignificant (less than 10% at sensitive receptors), except for 1-hour maximum NO₂ and 24-hour maximum PM₁₀ concentrations.

The increase in predicted 1-hour maximum NO₂ and 24-hour PM₁₀ concentrations from Future No-Build to Future Build show an increase of greater than 10% and higher as shown in Table 6.1. This increase is a result of the volume of bus traffic on the proposed BRT infrastructure which results in higher emissions of combustion of fuel and (resuspension) of road dust based on U.S. EPA emission factors. Table 6.1 below identifies that NO₂ and PM₁₀ have the highest increase in predicted concentrations from the No-Build to Build scenarios; the 1-hour NO₂ concentration increased by 10.6% at R58 (receptor near Intersection of Kingston Road and Church Street), while the 24-hour PM₁₀ concentration increased by 11.3 % from the No-Build to Build scenarios. The maximum 24-hour PM₁₀ concentration for the Build scenario is predicted at R58 (receptor near Intersection of Kingston Road and Church Street), and at R21 (receptor near Intersection of

Military Trail & Ellesmere Road) for the No-Build scenario. The increase in concentrations is due to the increase in traffic volume and traffic delay in the Build-Scenario.

Operational mitigation measures mentioned in Section 7.2 of this AQIA should be considered in order to reduce level of NO₂, PM₁₀ as well as other air contaminants associated with the Project. These measures include but not limited to introducing electric (zero emission) or diesel-electric hybrid (low emission) transit buses in the bus fleet as well as using advanced active emissions control technology system and clean diesel fuel.

In Table 6.1, exceedances to Air Quality Criteria/Standards are shown in red. The ambient contaminants levels of all exceedances, except 1-hour NO₂, exceeded the Air Quality Criteria/Standards already. In Table 4-1, the adopted 1-hour NO₂ ambient level is 59 µg/m³, which is about 75% of the criteria of 79 µg/m³. The predicted 1-hour NO₂ concentrations for the No-Build and Build scenarios are 25 and 35 µg/m³ respectively. Due to this high ambient level, the cumulative 1-hour NO₂ levels exceed the criteria.

In the 2041 Build Scenario, the predicted maximum 1-hour and annual NO₂ average is 119% and 146% of the Air Quality Criteria/Standards respectively. The maximum predicted annual PM_{2.5} level is 105% of the criteria. The predicted maximum annual benzene level is 108% of the criteria. The predicted maximum 24-hour and annual benzo(a)pyrene is level 356% and 1199% of the criteria respectively. However, the ambient contaminants levels of all exceedances, except 1-hour NO₂, exceeded the criteria already, even in the No-Build Scenario.

The maximum POIs of most contaminants are located near traffic intersections. It is because motor vehicles emit air contaminant at the highest rates when they are operating at low speeds or idling in queues. For this reason, the potential for adverse air quality impacts is greatest at intersections where traffic is most congested. A list of potential mitigations that can be implemented during operational phase is provided in Section 7.2 for the Project proponent and policy makers to consider when selecting strategies to minimize air quality impacts from the Project.

Table 6-1 Difference between Future No-Build and Future Build Scenarios

Contaminant	Averaging Period	% Difference between Future No-Build and Build	2041 No-Build (µg/m³)	2041 Build (µg/m³)	Max POI 2041 Build Scenario
NO ₂	1-hr	10.56%	84.4	94.4	R58
	24-hr	1.35%	51.1	51.8	R61
	Annual	0.31%	32.9	33.0	R54
CO	1-hr	2.11%	833.3	851.2	R58
	8-hr	1.96%	572.3	583.7	R54
SO ₂	1-hr	2.01%	6.5	6.6	R51
	24-hr	0.58%	4.9	4.9	R54
	Annual	0.66%	2.67	2.69	R54
PM ₁₀	24-hr	11.31%	32.5	36.7	R58
PM _{2.5}	24-hr	6.05%	16.5	17.6	R61
	Annual	1.46%	9.1	9.2	R58
Acetaldehyde	24-hr	0.12%	2.011	2.014	R54
Acrolein	1-hr	4.33%	0.084	0.0888	R51
	24-hr	0.00%	0.074	0.074	R21
Benzene	24-hr	1.91%	0.87	0.89	R54
	Annual	0.22%	0.49	0.49	R54
Benzo(a)pyrene	24-hr	2.04%	0.000174	0.000178	R54
	Annual	0.00%	0.000120	0.000120	R54
Formaldehyde	24-hr	0.23%	2.83	2.83	R21
1,3-Butadiene	24-hr	0.04%	0.0620	0.0621	R21
	Annual	0.01%	0.0330	0.0330	R70

Notes: Exceedances to Air Quality Criteria/Standards are shown in red.

The modeling results summarized in Table 6-1 show that exceedances are predicted in No-Build and Build scenarios for NO₂, PM_{2.5}, benzene and benzo(a)pyrene. Among these exceedances, the 1-hour NO₂ shows biggest increase from No-Build to Build scenario. To address the 1-hour NO₂ exceedance, specific operations mitigation measures are provided in Section 7.2.

The modelling results from the air dispersion modelling that indicated the exceedances of the AAQC/CAAQS have been presented in bar charts showing the maximum concentrations for each of the modelled contaminants. These bar charts are provided below.

Figure 6-1 Maximum 1-hour NO₂ Concentrations (µg/m³) Including 90th Percentile Background Concentration

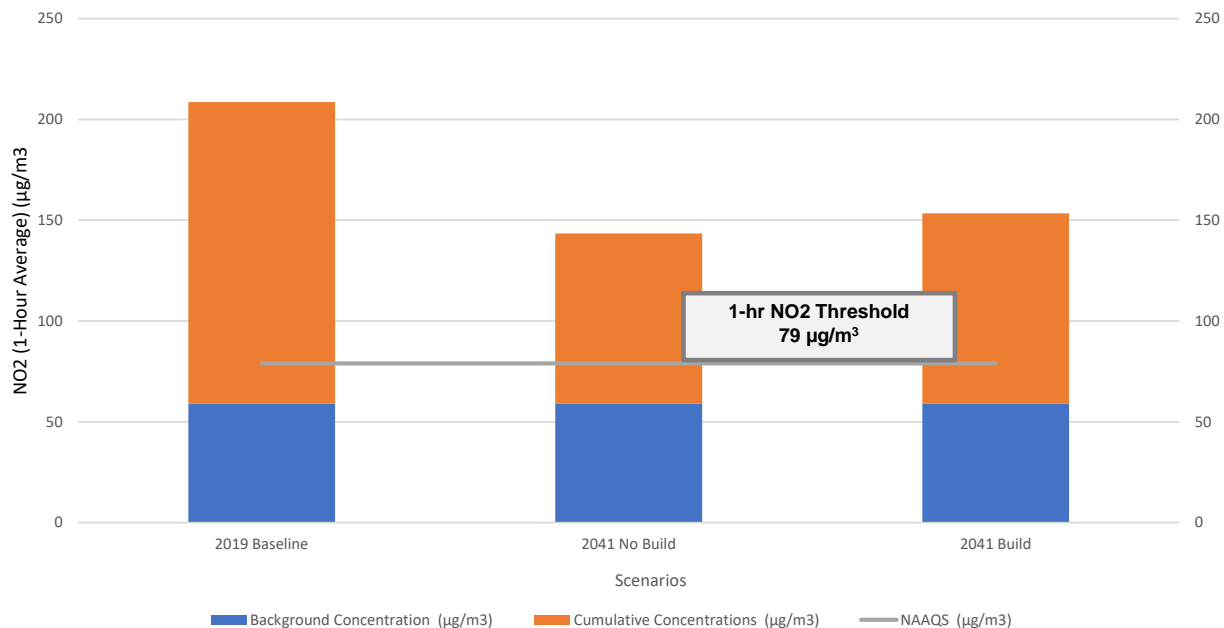


Figure 6-2 Maximum Annual Average NO₂ Concentrations (µg/m³) Including 90th Percentile Background Concentration

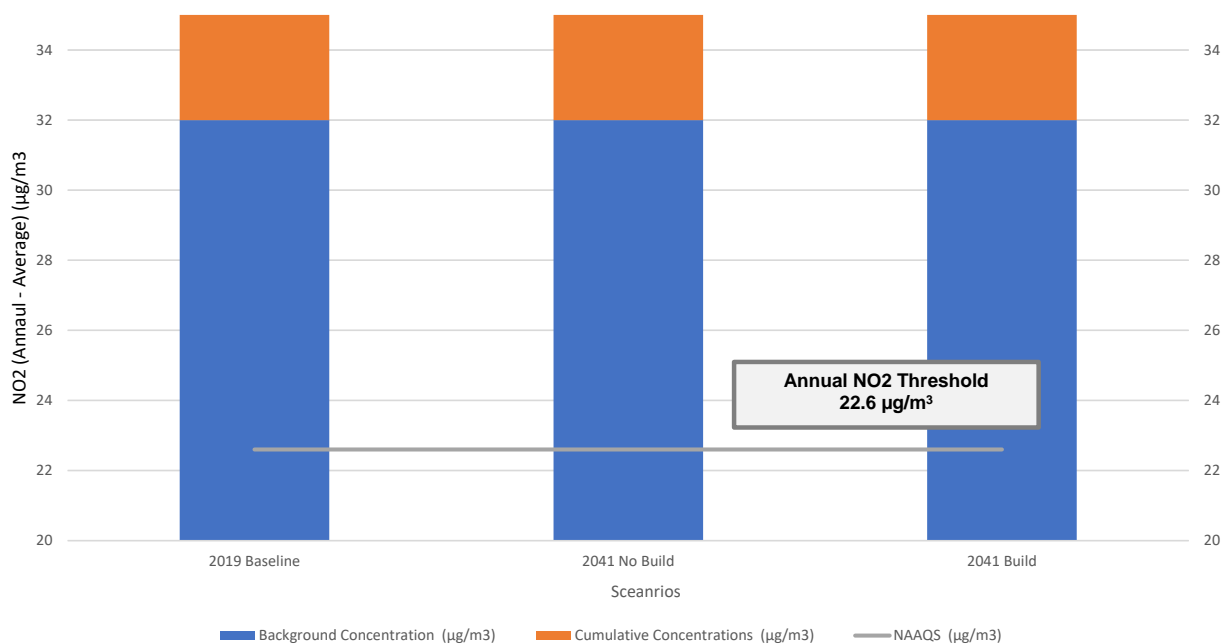


Figure 6-3 Maximum Annual Average PM_{2.5} Concentrations (µg/m³) Including 90th Percentile Background Concentration

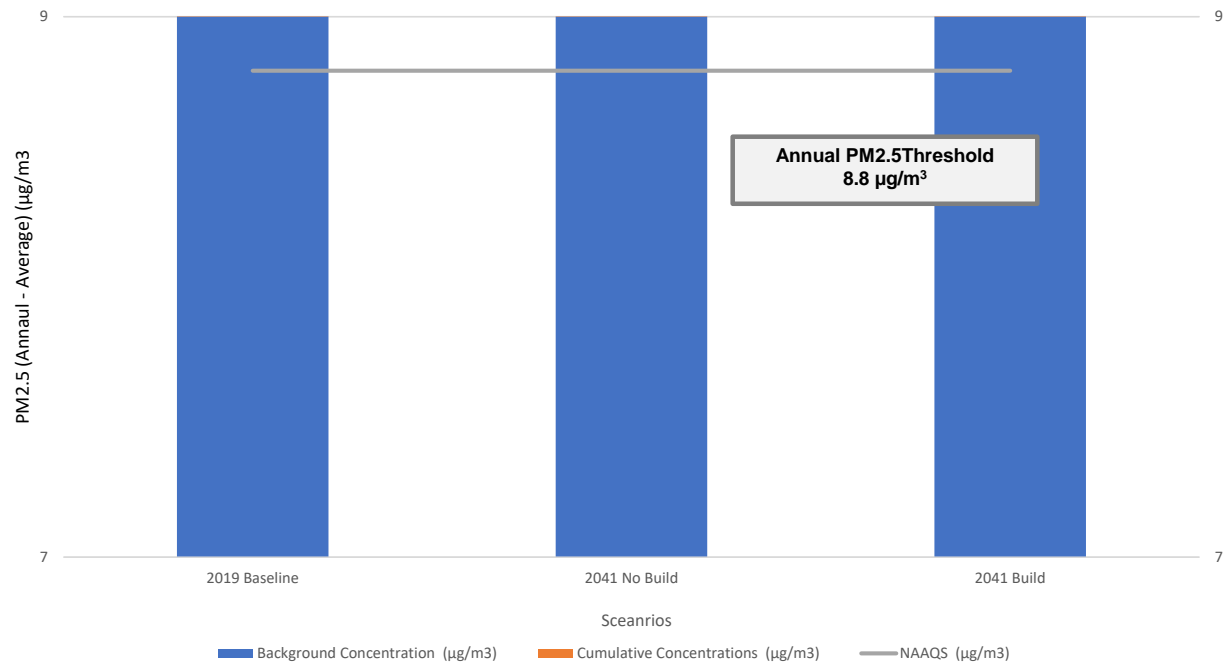


Figure 6- 4 Maximum Annual Average Benzene Concentrations (µg/m³) Including 90th Percentile Background Concentration

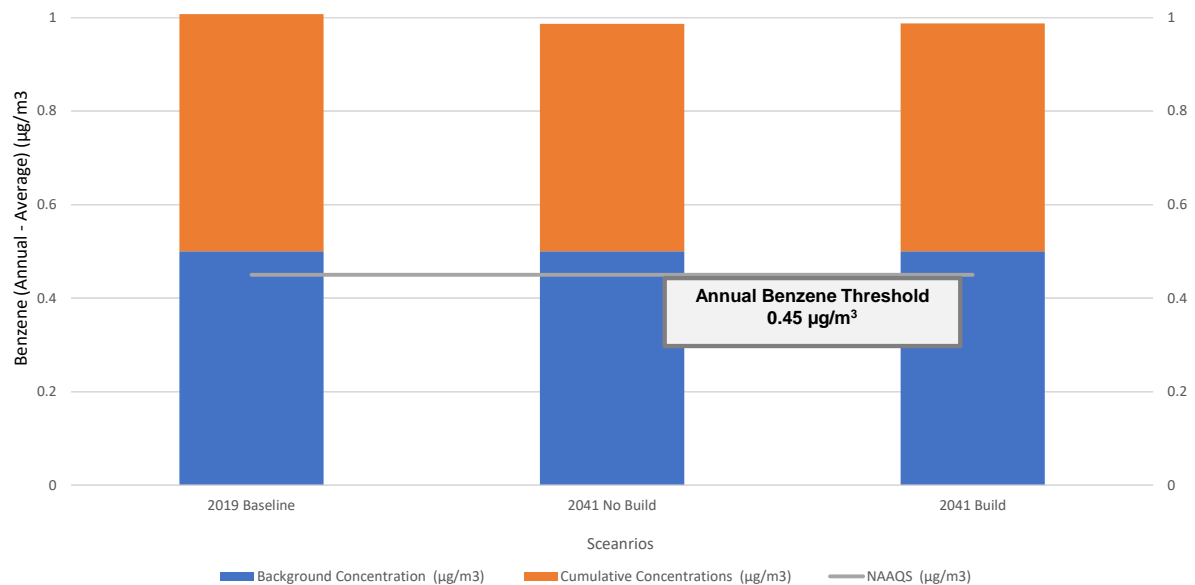


Figure 6-5 Maximum 24-Hour Average Benzo(a)pyrene Concentrations (µg/m³) Including 90th Percentile Background Concentration

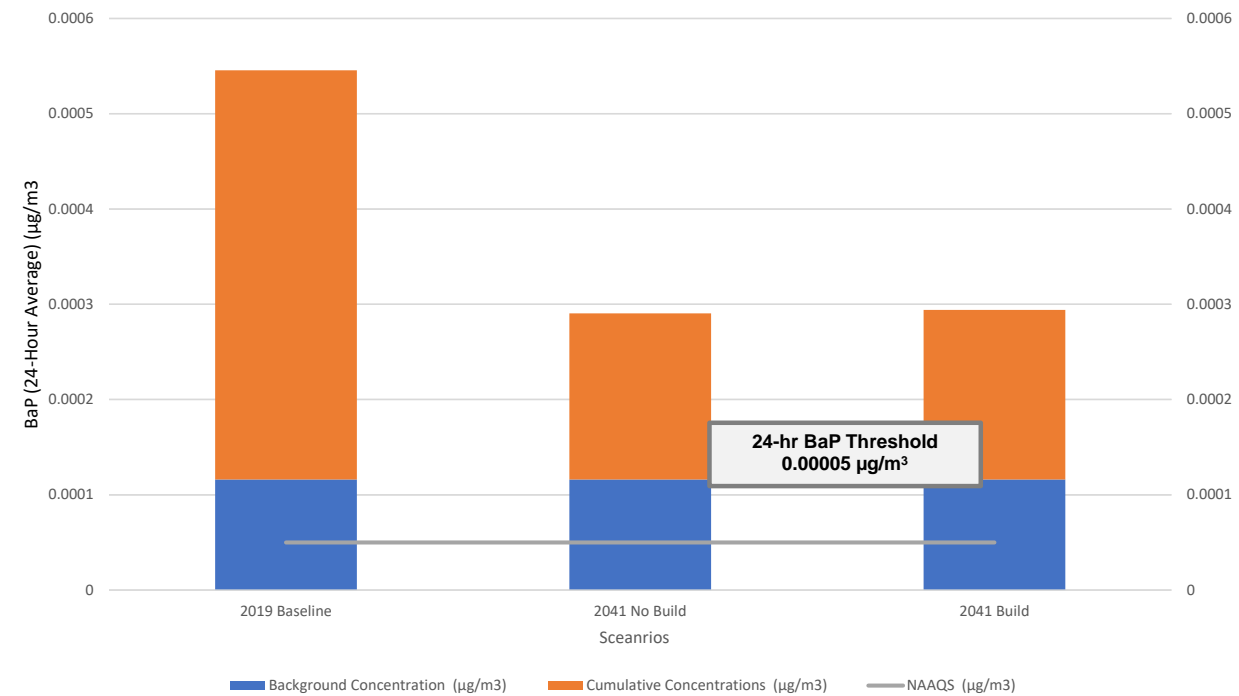
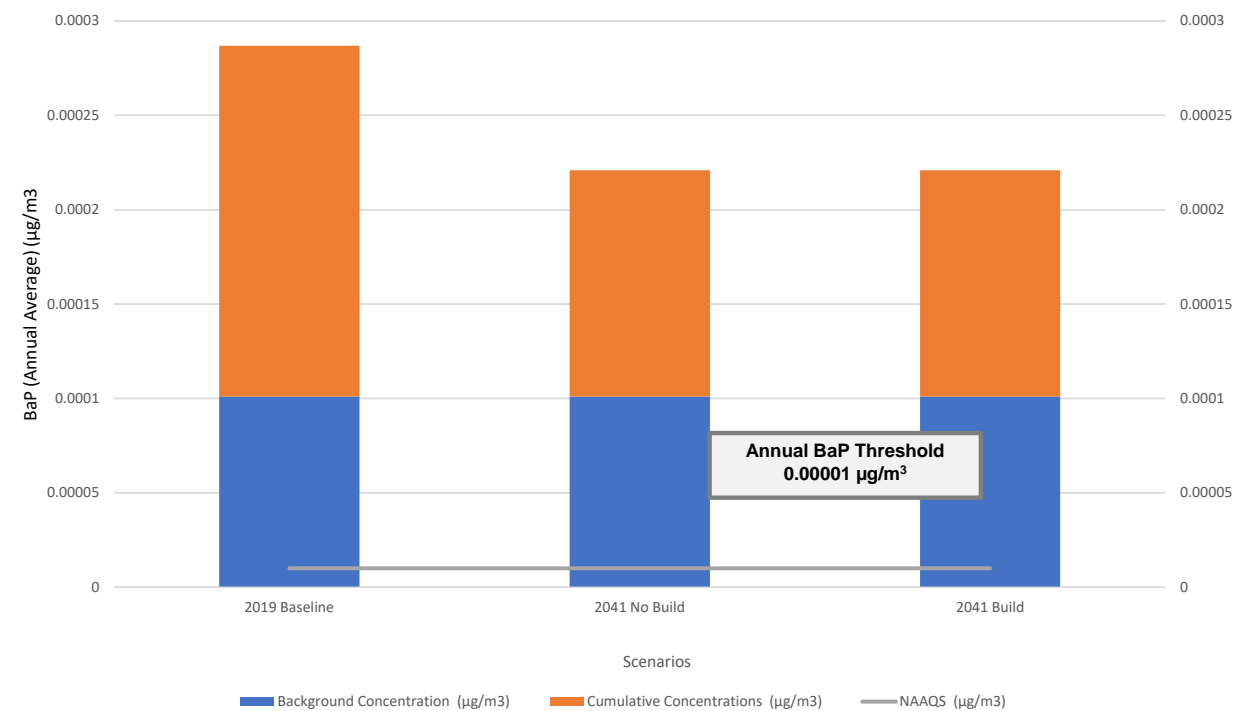


Figure 6-6 Maximum Annual Average Benzo(a)pyrene Concentrations (µg/m³) Including 90th Percentile Background Concentration



6.4 Emission Inventory for Different Scenarios

An emission inventory for criteria pollutants and GHG for different scenarios is compiled and presented Table 6-2.

Table 6-2 Air Quality Emission Inventory for All Scenarios (Tonnes Per Year)

Contaminant	2019 Existing	2041 No Build	2041 Build
PM ₁₀	107	112	151
PM _{2.5}	28	26	35
CO	773	306	306
NO _x	102	21	31
SO ₂	2.0	1.4	1.4
1,3-Butadiene	6.3E-02	2.2E-04	6.3E-04
Acetaldehyde	0.26	0.07	0.18
Acrolein	0.03	0.01	0.01
Benzene	0.95	0.41	0.41
Formaldehyde	0.44	0.17	0.28
Benzo(a)pyrene	2.4E-03	4.7E-04	4.6E-04
CH ₄	1.9	1.0	1.6
N ₂ O	0.6	0.4	0.5
Atmospheric CO ₂	103,183	73,367	80,394
CO _{2e}	103,409	73,523	80,576
CO _{2e} (Mega Tonnes)	0.1	0.07	0.08

6.5 Greenhouse Gases

Greenhouse gas emissions were calculated using the CO_{2e} emission factors, which were generated in MOVES (see Table 3-4), and annual VKT for each vehicle type and road segment. The total annual quantities of CO_{2e} released (in tonnes) for each assessment scenario and percent change between scenarios are summarized in Table 6-3.

Table 6-3 Annual CO₂e Emissions in Different Scenarios

Assessment Scenario	Total CO ₂ e Emissions	% Change from Existing Conditions	% Change from Future No-Build
	(tonnes/year)		
Existing Conditions	103,409	-	-
Future No-Build	73,523	-29%	-
Future Build	80,576	-22%	-10%

CO₂e is shown to decrease by 29% in the Future No-Build scenario relative to Existing Conditions and by a further 10% in the Future Build scenario relative to Future No-Build scenario. The decrease in GHG emissions relative to Existing Conditions is attributable to the better fuel-efficient vehicles with development of newer technologies and fuel-efficient vehicles with time in the future scenarios.

According to ECCC's 2020 National Inventory Report, Ontario's total GHG emissions were 165,000 kilotonnes (kt) in 2018 (ECCC, 2020) of which almost 37.8% was due to the transport sector. Although the Project is expected to slightly increase emissions of GHG in the specific study area when compared to No-Build scenario, the incremental CO₂e increase in the Future Build versus the No-Build scenarios is estimated to be about 0.004% of the 2018 Ontario total and is not discernable from the Future No-Build scenario at the provincial level (see Table 6-4).

Table 6-4 Comparing Annual CO₂e Emissions in Different Scenarios with Ontario's Inventory

Scenario	Year	Total CO ₂ e (kilotonnes)	% of Ontario Total
Ontario Total	2018	165,000	-
Ontario Transport Sector	2018	62,400	37.81%
Existing Conditions	2019	103.4	0.06%
Future No-Build	2041	73.5	0.04% ⁽¹⁾
Future Build	2041	80.6	0.05% ⁽¹⁾

⁽¹⁾ Assuming no change in Ontario's total emissions

7 MITIGATION OF AIR QUALITY IMPACTS

For the mitigation of air quality impacts resulting from the construction and operation phases of the Project, the sections below discuss the proposed mitigation measures.

7.1 Construction Phase Mitigation and Monitoring Activities

High temperatures and wind have the potential to cause the release and dispersion of particulate emissions more so than other meteorological conditions. Therefore, construction activities that are likely to cause the release of particulates will be avoided under such conditions. If elimination or avoidance is not possible, residents within the immediate vicinity will be notified of the potential for particulate emissions during construction activities or high wind and high temperature scenarios. There are several best management practices publication, including the renowned ECCC publication “Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities” (Cheminfo Services Inc., 2005) and the MECP’s “Management Approaches for Industrial Fugitive Dust Sources Technical Bulletin” (MECP, 2017) provide several practical mitigation measures for the reduction of fugitive emissions during construction activities. As per these best management practices, mitigation measures will be for the development of an Air Quality Management Plan (AQMP) and be implemented during construction activities to reduce any adverse air quality impact that may occur. Mitigation of road dust, as recommended in the ECCC document, includes the use of wind barriers (i.e., solid barriers, or trees and shrubs), water spraying and/or non-chloride dust suppressants, equipment washing, and limiting the exposed area which may be a source of dust.

The appendix of the AQMP will include an Air Quality Monitoring Plan. Details about monitoring procedures and requirements during construction phase will be provided in the plan. The planning and siting of the air quality monitoring stations and meteorological tower will be chosen in accordance with “The Operations Manual for Air Quality monitoring in Ontario” (MECP, 2019).

Prior to initiating ambient air quality monitoring activities, the Air Quality Management Plan and Air Quality Monitoring Plan will be submitted to Metrolinx and MECP for approval.

The monitoring program should measure, at a minimum, real-time data for particulate matter i.e. PM_{2.5} and PM₁₀, including meteorological parameters as per the guidance provided in the “Ontario Ministry of Transportation document, Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects” (MTO, 2020).

The air quality monitoring program will establish the baseline air quality condition at AQIA study area prior to the commencement of the construction activities, in consultation with Metrolinx, the number of air quality monitors and specific duration, which at a minimum, three (3) months of baseline monitoring program will be established at the AQIA study area.

Prior to construction, specific construction plans will be developed for certain work zones that involve sensitive receptors where AAQC/standard exceedances are expected. The construction plans will focus on emission mitigation strategies for minimizing the air quality impacts at these specific receptor locations.

Upon completion of baseline monitoring for the specified duration, the 24-hour averaged period data will be compared against the ambient air quality background data from the ECCC's National Air Pollution Surveillance (NAPS) Program monitoring stations in close proximity to the Project for the specified monitoring duration period. This evaluation will be done for verification of data quality and consistency with what is expected at the Project corridor, and to check if there is enough measured data to show weekly and daily variabilities in particulate concentrations.

During the demolition and construction phases, air quality monitoring will be performed by using a combination of daily handheld metering and autonomous air quality monitoring devices.

An air quality digital web-platform dashboard, specific to the Project, should also be developed specifically for the implementation of the monitoring component of the AQMP. The dashboard should at a minimum provide visual representation and assessment of monitoring data on a daily basis from multiple data points, including graphical trends using historical PM measurement data as the project progresses. Trigger, Action and Threshold Air Quality Level will be developed to alert site supervisor, environmental manager, air quality specialist and Metrolinx if the concentrations of any monitored contaminant exceed these levels. Reporting should follow the approved AQMP protocol and include the following information at a minimum:

- (1) daily air quality monitored results;
- (2) events in which there were elevated air quality concentrations of measured parameters that exceed the criteria, and
- (3) follow-up activities and mitigation measures implemented as a result of elevated air quality parameters.

The digital platform should be capable of generating these real-time alerts to specific stakeholders through e-mail notifications.

Potential construction air quality impacts, mitigation measures, and monitoring requirements are summarized in Table 7-1.

Table 7-1 Air Quality Impacts, Mitigation Measures, and Monitoring During Construction Phase

Potential Air Quality Impacts	Mitigation Measures	Monitoring Activities
Construction Dust	<p>A Construction Phase Air Quality Management Plan (AQMP) should be developed and provide site staff with air quality mitigation measures for the Project. The ECCC's "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (Cheminfo Services Inc., 2005) and the MECP's "Management Approaches for Industrial Fugitive Dust Sources Technical Bulletin" (MECP, 2017) should be used as the guides when developing the AQMP. The air quality mitigation measures outlined in the AQMP should include but not limited to:</p> <ul style="list-style-type: none"> • Seeding, paving, covering, wetting disturbed soil surfaces. • Using wind screens or fences. • Covering truckloads of dust-producing material. • Reducing traffic speeds especially on unpaved surfaces. • Using of vehicle wheel and body washing facilities at the exit points of the site. • Reducing aggregate/sand drop height. • Only allowing wet cutting of concrete block, concrete, and/or asphalt surfaces. • Stop work activities temporarily during high wind conditions. • Following mitigation measures provided in Environment Canada's "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" and the Ministry of Environment, Conservation and Parks' "Technical Bulletin Management Approaches for Industrial Fugitive Dust Sources" (MECP, 2017). • Following mitigation measures from Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005). 	<p>Construction air quality monitoring activities will be conducted in accordance with the AQMP and Air Quality Monitoring Plan requirements, which may include:</p> <ul style="list-style-type: none"> • Installing on-site meteorological and air quality (dust) monitoring station to monitor real-time conditions. • The siting of the air quality monitoring stations and meteorological tower should be chosen in accordance with "The Operations Manual for Air Quality monitoring in Ontario", published by the Ontario Ministry of Environment, Conservation and Parks in May 2019. • Define Trigger, Action and Threshold Dust Level and develop Actions Plan to respond to these elevated dust conditions. • Develop an Air Quality Incident,

		<p>Complaint and Response Protocol</p> <ul style="list-style-type: none"> • Report daily monitoring results, weather conditions, incidents, and mitigation activities
<p>Tailpipe Emissions from Construction Equipment and Vehicles</p>	<p>The AQMP will also provide construction equipment/vehicle emissions mitigation measures. These include:</p> <ul style="list-style-type: none"> • Construction equipment and vehicles must be complied with Canada most stringent emissions standards. • Construction equipment and vehicles should be regularly inspected, maintained and repaired to minimize exhaust emissions. • Excessive idling of vehicles and equipment (greater than five minutes) should be minimized and/or strictly adhering to municipal by-law on idling policies. • Using alternative-fuel or electric equipment where feasible, • Using solar panel, where appropriate, to supply electricity instead of on-site diesel generators. • Develop and implement a construction Traffic Management Plans (TMPs). Examples of traffic management techniques may include the following: <ul style="list-style-type: none"> - using traffic control officers and flaggers, - using temporary signage and variable message displays, - notifying the public of construction-related traffic congestion, - designating construction staging areas and worker parking areas; and - designating construction truck routes. 	<p>No monitoring activity is applicable to tailpipe emissions from construction equipment and vehicles.</p>

7.2 Operational Phase Mitigation

For the traffic phase, alternatively often also referred to as the operation phase, there are many fuel and technology pathways available to reduce tailpipe emissions of the proposed BRT buses. Switching from diesel to alternative fuels such as natural gas or dimethyl ether can reduce tailpipe

emissions. Furthermore, alternate option exists such as blending of biological-based fuels i.e. biodiesel or hydrogenation-derived renewable diesel with conventional petroleum-based diesel. Moreover, upgrading transit buses from conventional internal combustion engine technology to hybrid or electric technology can improve fuel economy or eliminate tailpipe emissions altogether. These pathways would simultaneously reduce air pollution as well as GHG emissions.

Operational phase best management practices should also include conducting regular engine maintenance and inspection as well as minimizing bus idling time. The MTO's "Environmental Standards and Practices for Provincial Transportation Facilities" and TTC's Green Bus Program provide more BRT operation phase mitigation measures.

In November 2017, the TTC Board approved the TTC's Green Bus Technology Plan. Some sub-programs in the plan that are relevant to this Project are:

1. Clean diesel bus procurement;
2. Hybrid Electric Vehicle (HEV) bus procurement;
3. Electric bus (eBus) procurements;
4. Electrification infrastructure; and
5. Associated business transformation program.

7.2.1 Specific Operations Mitigation to Address NO₂ Exceedance

Since the modelling results show that NO₂ level will exceed the 1-hour criteria in the Future Build scenario, mitigation measures are required to mitigate the impacts. Specific NO₂ operations mitigation measures recommended for the proposed BRT include:

- Introducing electric (zero emission) or diesel-electric hybrid (low emission) transit buses in the bus fleet.
- Using advanced active emissions control technology system such as Selective Catalytic Reduction (SCR) in diesel-powered buses. SCR can reduce NO_x emissions up to 90 percent while simultaneously reducing hydrocarbon (HC) and CO emissions by 50 to 90 percent, and PM emissions by 30 to 50 percent. (*Source: Diesel Technology Forum*)
- Using clean diesel fuel.

Specific NO₂ operations mitigation measures for other on-road vehicles include encouraging:

- Carpooling/ridesharing, remote work, using public transportation. These transportation planning strategies will reduce number of vehicles on the road and traffic congestion. Air contaminant emitted from motor vehicles at the highest rates when they are operating at low speeds or idling in queues, reducing traffic congestion is one of the effective strategies in air pollution control through transportation planning.
- Diesel Retrofit – Diesel trucks with older engine replace with a new diesel engine that meets the most current emissions criteria.
- Replacing older model vehicles with newer zero emission or low emission vehicles.

When comparing with the No-Build scenario level, the Build scenario PM₁₀ level increased by 11%. As a result, PM₁₀ mitigation measures are also recommended for this Project. Specific PM₁₀ mitigation measures for BRT and other on-road vehicles, especially diesel-powered vehicles include:

- Conducting routine preventive maintenance of diesel engines to minimize emissions.
- Installing engine exhaust filters.
- Installing diesel oxidation catalysts.
- Using clean diesel fuel.

Specific and general operational air quality mitigation measures are summarized in Table 7-2.

Table 7-2 Air Quality Impacts and Mitigation Measures During Operational Phase

Potential Air Quality Impacts	Mitigation Measures
Tailpipe NO ₂ Emissions from BRT and Other Vehicles	<p>Specific Operations NO₂ Mitigation Measures include:</p> <p>For BRT Vehicles</p> <ul style="list-style-type: none"> • Introducing electric (zero emission) or diesel-electric hybrid (low emission) transit buses in the bus fleet. • Using advanced active emissions control technology system such as Selective Catalytic Reduction (SCR) in diesel-powered buses. • Using clean diesel fuel. <p>For Other On-road Vehicles</p> <ul style="list-style-type: none"> • Encourage carpooling/ridesharing, remote work and using public transportation. • Diesel Retrofit – Diesel trucks with older engine replace with a new diesel engine that meets the most current emissions criteria. • Replacing older model vehicles with newer zero emission or low emission vehicles.
Tailpipe PM ₁₀ and PM _{2.5} Emissions from BRT and Other Vehicles	<p>Specific Operations Particulate Matter (PM₁₀ and PM_{2.5}) Mitigation Measures include:</p> <p>For BRT and Other Diesel-Powered Vehicles.</p> <ul style="list-style-type: none"> • Conducting routine preventive maintenance of diesel engines to minimize emissions.

	<ul style="list-style-type: none"> • Installing engine exhaust filters. • Installing diesel oxidation catalysts. • Using clean diesel fuel.
Tailpipe Emissions from BRT and Other Vehicles	<p>General BRT Tailpipe Emissions Mitigation Measures:</p> <p>The tailpipe emissions may be reduced by best management practices, which include:</p> <ul style="list-style-type: none"> • Switching from diesel to alternative fuels such as natural gas or dimethyl ether; • Blending of biological-based fuels i.e. biodiesel or hydrogenation-derived renewable diesel with conventional petroleum-based diesel; • Upgrading transit buses from conventional internal combustion engine technology to hybrid or electric technology can improve fuel economy or eliminate tailpipe emissions altogether; and • Conducting regular engine maintenance and inspection as well as minimizing bus idling time. <p>TTC Board approved the TTC's Green Bus Technology Plan in 2017. Some sub-programs in the plan that are relevant to this Project include:</p> <ul style="list-style-type: none"> • Clean diesel bus procurement; • HEV bus procurement; • eBus procurements; • Electrification infrastructure; and • Associated business transformation program.
	<p>General Tailpipe Emissions Mitigation Measures for Other On-road Vehicles include:</p> <ul style="list-style-type: none"> • Encouraging carpooling/ridesharing, remote work and using public transportation. • Using electric, hybrid and alternative-fuel vehicles. • Replacing older model vehicles with newer zero emission or low emission vehicles. • Minimizing vehicle idling time. • Conducting regular engine maintenance and inspection.

8 REFERENCES

- Canadian Council of the Ministers of the Environment (CCME). June 2000. *Canada-Wide Standards for Fine Particulate Matter and Ozone*.
- Canadian Council of the Ministers of the Environment (CCME). October 2012. *Canadian Ambient Air Quality Standards (CAAQS) for Fine Particulate Matter (PM_{2.5}) and Ozone*.
- Canadian Council of the Ministers of the Environment (CCME). October 2016. *Canadian Ambient Air Quality Standards (CAAQS) for Sulphur Dioxide*.
- Canadian Council of the Ministers of the Environment (CCME). November 2017. *Canadian Ambient Air Quality Standards (CAAQS) for Nitrogen Dioxide*.
- ChemInfo Services Inc. (ChemInfo). March 2005. *Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities*.
- Countess Environmental. September 2006. *Western Regional Air Partnership (WRAP) Fugitive Dust Handbook*. Prepared for the Western Governors' Association.
- Diesel Technology Forum Website (<https://www.dieselforum.org/about-clean-diesel/what-is-scr>)
- Environment and Climate Change Canada (ECCC). November 2016. *National Inventory Report 1990-2014: Greenhouse Gas Sources and Sinks in Canada*.
- Environment and Climate Change Canada (ECCC). 2017. *National Air Pollution Surveillance Network (NAPS) Annual Raw Data*, <http://maps-cartes.ec.gc.ca/rnsps-naps/data.aspx>.
- Environment and Climate Change Canada, 2020 National Inventory Report 1990-2018: Greenhouse Gas Sources and Sinks in Canada, Part 3, 2020.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change, November 2007 – The Physical Science Basis*.
- Metrolinx. August 2015 Environmental Programs and Assessment Draft Environmental Guide: Recommended Approach for Assessing and Mitigating Air Quality Impacts and Greenhouse Gas Emissions of Metrolinx Public Transit Projects
- Ontario Ministry of Natural Resources (MNR). November 2007. *Climate Change Projections for Ontario: Practical information for Policymakers and Planners*.
- Ontario Ministry of the Environment and Climate Change (MOECC). 2016. *Air Quality Ontario Annual Raw Data*, <http://airqualityontario.com/history/index.php>.

Ontario Ministry of Environment and Climate Change (MOECC). August 2016. *Consideration of Climate Change in Environmental Assessments in Ontario, Draft*.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2017, *Management Approaches for Industrial Fugitive Dust Sources Technical Bulletin*

Ontario Ministry of the Environment, Conservation and Parks (MECP). Updated May 2019, *Operations Manual for Air Quality Monitoring in Ontario*.

Ontario Ministry of Transportation (MTO). October 2019, *Air Quality Impact Assessment, Highway 407 Transitway: West of Brant Street to West of Hurontario Street*

Ontario Ministry of the Environment, Conservation and Parks (MECP). May 2020. *Ontario's Ambient Air Quality Criteria*. <https://www.ontario.ca/page/ontarios-ambient-air-quality-criteria-sorted-contaminant-name>. Standards Development Branch.

Ontario Ministry of Energy. November 2017. *Ontario's Electricity System- Frequently Asked Questions*.

Ontario Ministry of Transportation (MTO). July 2020. *Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects*.

United States Environmental Protection Agency (U.S. EPA). November 2011. *Compilation of Air Pollutant Emission Factors. AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Draft Section 13.2.1 Paved Roads*.

APPENDIX A
MOVES2014 Input Parameters



Summary of MOVES2014 Model Inputs

As noted in Section 4.3.4, vehicle emission factors developed for the purposes of this air quality assessment were based on the U.S. EPA's Motor Vehicle Emission Simulator (MOVES) model. The U.S. EPA introduced MOVES in 2010 as a replacement emission inventory tool to the MOBILE6.2 model.

For this assessment, emission factors were developed for cars, medium trucks, heavy trucks and buses using MOVES2014b and Niagara County, New York (NY) State as the geographic surrogate for exhaust emissions.

The base year 2019, and the future horizon year 2041 were based on county-level MOVES runs using the "emission rates" calculation mode. In general, Chapter 5 of the MOVES2014 User Guide "Generate Emission Rates for County Scale Analyses" was followed. When running MOVES in the "emission rates" mode, many of the same inputs needed to run MOVES in "inventory" mode are required in order for the model to run in "emission rates" mode. However, not all inputs are actually used by the model in the calculation of emission rates. As a result, much of the default data available for Niagara County, NY could be used as input to MOVES without impacting the results.

Of this list, fuel supply information is the only data input that can directly affect the emission rates calculations. However, recent fuel supply data is not readily available for Ontario and as a result, default fuel information for Niagara County, NY was used as a surrogate. Since Canada's on-road vehicle and engine emissions regulations¹ are closely aligned with U.S. emissions regulations, the differences in fuel and engine characteristics are considered minor enough so as not to affect emission estimates to a level that would materially impact results and conclusions of this report. However, it should be noted that it was conservatively assumed that BRT the buses were powered by diesel fuel. E85 fuel were reassigned to gasoline as E85 flex-fuel cars and fueling stations are not readily available in the Ontario as they are in the United States. Vehicle Emissions Inspection and Maintenance (I/M) program information was not used in this assessment. A summary of the primary MOVES input parameters is provided in Table A-1.

Rate per distance tables were generated by MOVES, which provide hourly emission factors for each pollutant by month, vehicle type, speed and road type. For each horizon year, the maximum emission factors for each vehicle type and speed bin were calculated.

Idling emissions from all vehicles were derived from the output using the emission rate at the lowest possible speed bin (0 to 2.5 mph = 4.02 km/hr) and multiplied by (4.02 km/hour). In summary, the vehicle idling emission rate is:

¹ Government of Canada. On-Road Vehicle and Engine Emission Regulations SOR/2003-2.

Idling emission rate = Emissions Factor at Speed Bin 1 * Average speed (4.02 km/hour).

Vehicle types in MOVES2014b are Motorcycle, Passenger Car, Passenger Truck, Light Commercial Truck, Intercity Bus, Transit Bus, School Bus, Refuse Truck, Single Unit Short-haul Truck, Single Unit Long-haul Truck, Motor Home, Combination Short-haul Truck, Combination Long-haul Truck. These vehicle types were assigned as Car, Medium Truck and Medium Truck and Bus when calculating the composited emission rates. Table A-2 illustrates which MOVES source types were used to obtain the composite emission factors for use in the CAL3QHCR Model.

Table A-1 MOVES Input Parameters

MOVES Source Type ID	MOVES Source Type Name
Scale	County Domain
Calculation Mode	Emission Rates
Years	2019, 2041
Months	January and July
Geographical Bounds	Niagara County, NY
Meteorology	Environment Canada Weather Data (Oshawa, Ontario)
Fuel	Default fuel mix (E85 reassigned to Gasoline)
Source Use Types	21, 31, 32, 41, 42, 43, 51, 52, 53, 54, 61, 62
Contaminants	NO _x , CO, SO ₂ , PM _{2.5} , PM ₁₀ , Acetaldehyde, Acrolein, Benzene, 1,3-butadiene, Formaldehyde, Benzo(a)pyrene
Speed Distribution	MOVES Default
Vehicle Age Distribution	MOVES2014b Default

Table A-2 MOVES Vehicle Types Used

OVES Source Type ID	MOVES Source Type Name	Assessment Source Type Classification
11	Motorcycle	Cars
21	Passenger Car	Cars
31	Passenger Truck	Cars
32	Light Commercial Truck	Cars
41	Intercity Bus	Medium Trucks
42	Transit Bus	Medium Trucks
43	School Bus	Medium Trucks
51	Refuse Truck	Medium Trucks
52	Single Unit Short-haul Truck	Medium Trucks
53	Single Unit Short-haul Truck	Medium Trucks
54	Motor Home	Medium Trucks
61	Combination Short-haul Truck	Heavy Trucks
62	Combination Long-haul Truck	Heavy Trucks

APPENDIX B
Modelling Results Tables



Table B-1 24-hour Maximum PM10 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios													
Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			AAQC (µg/m ³)	% of the AAQC			
ID	Name	(µg/m ³)	(µg/m ³)	(µg/m ³)	% change from Existing Conditions	24-hr Max Concentration µg/m ³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)	
R 1	Oasis Family Health Centre, Scarborough	30	35.4	31.7	-11%	33.6	-5%	6%	50	71%	63%	67%	
R 2	Town Care Walk-in Clinic, Scarborough	30	36.2	31.7	-12%	34.2	-6%	8%	50	72%	63%	68%	
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarb	30	36.1	32.0	-12%	34.5	-5%	8%	50	72%	64%	69%	
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	30	34.9	32.0	-8%	33.3	-5%	4%	50	70%	64%	67%	
R 5	Residential Receptor near Stanwell Drive, Scarborough	30	30.0	30.0	0%	33.5	12%	12%	50	60%	60%	67%	
R 6	Residential Receptor near Stoneton Drive, Scarborough	30	30.0	30.0	0%	32.9	9%	9%	50	60%	60%	66%	
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	30	35.0	31.7	-9%	33.9	-3%	7%	50	70%	63%	68%	
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	30	33.8	32.2	-5%	33.3	-2%	3%	50	68%	64%	67%	
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	30	31.9	31.5	-1%	34.0	7%	8%	50	64%	63%	68%	
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	30	36.8	31.7	-14%	35.7	-3%	13%	50	74%	63%	71%	
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	30	34.4	31.3	-9%	33.9	-1%	8%	50	69%	63%	68%	
R 12	Residential apartment near Markham Road, Scarborough	30	34.9	31.4	-10%	34.6	-1%	10%	50	70%	63%	69%	
R 13	Residential apartment near Markham Road, Scarborough	30	32.5	31.4	-3%	34.0	5%	8%	50	65%	63%	68%	
R 14	Residential apartment near Markham Road, Scarborough	30	32.1	32.7	2%	33.8	5%	3%	50	64%	65%	68%	
R 15	Residential Receptor near Orton Park Road, Scarborough	30	32.4	31.7	-2%	33.1	2%	4%	50	65%	63%	66%	
R 16	Residential Receptor near Neilson Road, Scarborough	30	33.0	31.2	-6%	34.3	4%	10%	50	66%	62%	69%	
R 17	Residential Receptor near Morningside Avenue, Scarborough	30	36.9	32.1	-13%	33.3	-10%	3%	50	74%	64%	67%	
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	30	32.1	31.4	-2%	32.0	0%	2%	50	64%	63%	64%	
R 19	The Shoniker Clinic., The Shoniker Clinic	30	32.4	30.8	-5%	31.4	-3%	2%	50	65%	62%	63%	
R 20	Centennial College-Morningside Campus 1	30	32.4	32.0	-1%	35.0	8%	9%	50	65%	64%	70%	
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	30	35.6	31.6	-11%	36.5	3%	16%	50	71%	63%	73%	
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	30	37.1	32.7	-12%	31.9	-14%	-2%	50	74%	65%	64%	
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	30	34.8	31.2	-10%	32.9	-6%	5%	50	70%	62%	66%	
R 24	Residential Receptor at Scarbell Drive, Scarborough	30	34.3	32.0	-7%	34.5	1%	8%	50	69%	64%	69%	
R 25	Meadowvale Public School, Primary School, Scarborough	30	33.9	30.8	-9%	31.9	-6%	4%	50	68%	62%	64%	
R 26	Meadowvale Day Care Centre, Scarborough	30	34.1	31.4	-8%	31.9	-6%	2%	50	68%	63%	64%	
R 27	Residential Receptor near Kingston Road, Scarborough	30	33.3	30.5	-9%	33.0	-1%	8%	50	67%	61%	66%	
R 28	Rouge Valley Public School, Primary school	30	33.8	31.0	-8%	32.5	-4%	5%	50	68%	62%	65%	
R 29	Scarborough Rouge Valley YMCA Child Care Centre	30	33.7	30.9	-8%	32.4	-4%	5%	50	67%	62%	65%	
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	30	32.1	32.9	2%	33.2	4%	1%	50	64%	66%	66%	
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	30	31.6	32.6	3%	33.4	6%	3%	50	63%	65%	67%	
R 32	Altamont Care Community, Scarborough	30	35.8	31.8	-11%	31.1	-13%	-2%	50	72%	64%	62%	
R 33	EDUKids Child Care Centres Allona Road, Pickering	30	31.5	30.4	-4%	32.9	4%	8%	50	63%	61%	66%	
R 34	The Gates Medical Centre, Pickering	30	33.2	30.8	-7%	32.7	-1%	6%	50	66%	62%	65%	
R 35	Residential Receptor near Rougemount Drive, Pickering	30	33.2	30.3	-9%	32.7	-2%	8%	50	66%	61%	65%	
R 36	Dunbarton High School - Pickering	30	33.8	31.0	-8%	32.7	-3%	6%	50	68%	62%	65%	
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	30	35.0	31.4	-10%	33.7	-4%	7%	50	70%	63%	67%	
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	30	34.7	31.7	-9%	33.5	-3%	6%	50	69%	63%	67%	
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	30	35.5	32.2	-9%	32.0	-10%	-1%	50	71%	64%	64%	
R 40	Durham Drug Store Walk-In Clinic, Pickering	30	32.3	30.6	-5%	32.6	1%	6%	50	65%	61%	65%	
R 41	Residential Receptor near Sheppard Ave, Pickering	30	35.3	31.7	-10%	32.4	-8%	2%	50	71%	63%	65%	
R 42	Bayfair Daycare, Pickering	30	31.5	30.6	-3%	31.6	0%	3%	50	63%	61%	63%	
R 43	Muppets Children's Centre, Pickering	30	35.0	31.4	-10%	31.5	-10%	1%	50	70%	63%	63%	
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	30	30.8	30.3	-1%	31.2	1%	3%	50	62%	61%	62%	
R 45	Residential Receptor near Kingston Road, Pickering	30	36.2	31.9	-12%	32.7	-10%	3%	50	72%	64%	65%	
R 46	Residential Receptor near RR29, Pickering	30	37.0	32.0	-14%	32.7	-12%	2%	50	74%	64%	65%	
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	30	31.3	31.1	-1%	32.7	4%	5%	50	63%	62%	65%	
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	30	39.5	32.2	-18%	32.4	-18%	0%	50	79%	64%	65%	
R 49	Glengrove School, Pickering	30	33.5	31.4	-6%	32.9	-2%	5%	50	67%	63%	66%	
R 50	VIVA Pickering Retirement Community, Pickering	30	32.4	32.0	-1%	32.9	1%	3%	50	65%	64%	66%	
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	30	35.8	31.7	-11%	34.1	-5%	8%	50	72%	63%	68%	
R 52	Little Rose Home Daycare., Pickering	30	34.1	31.1	-9%	31.2	-9%	0%	50	68%	62%	62%	
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	30	34.2	30.9	-10%	32.9	-4%	7%	50	68%	62%	66%	
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	30	38.4	31.6	-18%	35.7	-7%	13%	50	77%	63%	71%	
R 55	Residential receptor near Brock Road, Pickering	30	30.1	30.1	0%	33.4	11%	11%	50	60%	60%	67%	
R 56	Alert Nursing & Home Care Svc, Pickering	30	31.8	31.4	-2%	32.0	0%	2%	50	64%	63%	64%	
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	30	31.8	30.7	-4%	33.2	4%	8%	50	64%	61%	66%	
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	30	36.1	31.3	-13%	34.9	-3%	12%	50	72%	63%	70%	
R 59	Residential Receptor near Church Street, Ajax	30	35.9	31.7	-12%	35.1	-2%	11%	50	72%	63%	70%	
R 60	Residential Receptor near Macey CT and Church Street, Ajax	30	38.3	31.4	-18%	33.1	-14%	5%	50	77%	63%	66%	
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	30	33.5	31.2	-7%	37.0	10%	19%	50	67%	62%	74%	
R 62	Lincoln Avenue Public School, Ajax	30	33.4	32.0	-4%	32.8	-2%	3%	50	67%	64%	66%	
R 63	Residential Receptor near Westney Road, Ajax	30	36.1	31.7	-12%	35.6	-1%	12%	50	72%	63%	71%	
R 64	Residential Receptor near Durham Street, Ajax	30	34.3	30.9	-10%	33.7	-2%	9%	50	69%	62%	67%	
R 65	Residential Receptor near Durham street, Ajax	30	36.8	31.7	-14%	34.7	-6%	9%	50	74%	63%	69%	
R 66	Residential Receptor near Durham Street and Patterson CT., Ajax	30	33.7	32.0	-5%	32.9	-2%	3%	50	67%	64%	66%	
R 67	Westney Heights Medical Centre, Ajax	30	35.2	31.3	-11%	34.5	-2%	10%	50	70%	63%	69%	
R 68	Kingston Medical Clinic & Pharmacy, Ajax	30	33.8	31.1	-8%	33.3	-2%	7%	50	68%	62%	67%	
R 69	Residential Receptor near Lovgrove Lane, Ajax	30	35.1	31.1	-11%	32.7	-7%	5%	50	70%	62%	65%	
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	30	34.9	31.9	-9%	33.2	-5%	4%	50	70%	64%	66%	
R 71	Residential Receptor near Salem Road, Ajax	30	33.5	31.8	-5%	32.6	-3%	2%	50	67%	64%	65%	
R 72	Residential Receptor Martinworth Lane, Ajax	30	31.3	31.6	1%	33.6	7%	6%	50	63%	63%	67%	
R 73	Residential Receptor near Lake Ridge Road, Whitby	30	37.2	31.1	-16%	35.0	-6%	13%	50	74%	62%	70%	
R 74	Residential Receptor Bluebell Crescent, Whitby	30	36.5	31.5	-14%	33.3	-9%	6%	50	73%	63%	67%	
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	30	31.8	31.7	0%	33.4	5%	5%	50	64%	63%	67%	
R 76	Fairview Lodge, Nursing home, Whitby	30	30.5	31.7	4%	35.5	16%	12%					

Table B-2 24-hour Maximum PM2.5 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			AAQC (µg/m ³)	% of the AAQC		
ID	Name	Concentration	24-hr Max Concentration	24-hr Max Concentration	% change from Existing Conditions	24-hr Max Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m ³)	(µg/m ³)	(µg/m ³)		µg/m ³						
R 1	Oasis Family Health Centre, Scarborough	16	22.2	17.7	-20%	16.9	-24%	-4%	27	82%	65%	63%
R 2	Town Care Walk-in Clinic, Scarborough	16	21.4	17.7	-17%	16.8	-22%	-6%	27	79%	66%	62%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarb	16	22.8	18.0	-21%	17.3	-24%	-4%	27	84%	67%	64%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	16	19.2	18.0	-6%	16.6	-13%	-8%	27	71%	67%	61%
R 5	Residential Receptor near Stanwell Drive, Scarborough	16	18.3	16.0	-12%	16.6	-9%	3%	27	68%	59%	61%
R 6	Residential Receptor near Stoneton Drive, Scarborough	16	16.8	16.0	-5%	16.1	-4%	1%	27	62%	59%	60%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	16	21.2	17.7	-16%	17.0	-20%	-4%	27	78%	66%	63%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	16	19.8	18.2	-8%	16.7	-16%	-8%	27	73%	68%	62%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	16	22.0	17.5	-20%	17.3	-21%	-1%	27	81%	65%	64%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	16	19.1	17.7	-7%	16.6	-13%	-6%	27	71%	66%	62%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	16	16.7	17.3	3%	16.2	-3%	-6%	27	62%	64%	60%
R 12	Residential apartment near Markham Road, Scarborough	16	16.9	17.4	3%	16.4	-3%	-6%	27	63%	65%	61%
R 13	Residential apartment near Markham Road, Scarborough	16	17.3	17.4	1%	16.4	-5%	-6%	27	64%	65%	61%
R 14	Residential apartment near Markham Road, Scarborough	16	16.5	18.7	13%	16.1	-2%	-14%	27	61%	69%	60%
R 15	Residential Receptor near Orton Park Road, Scarborough	16	18.4	17.7	-4%	16.3	-11%	-8%	27	68%	66%	60%
R 16	Residential Receptor near Neilson Road, Scarborough	16	20.1	17.2	-14%	16.4	-18%	-5%	27	75%	64%	61%
R 17	Residential Receptor near Morningside Avenue, Scarborough	16	19.7	18.1	-8%	16.5	-16%	-9%	27	73%	67%	61%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	16	17.5	17.4	0%	16.6	-5%	-4%	27	65%	65%	62%
R 19	The Shoniker Clinic., The Shoniker Clinic	16	17.5	16.8	-4%	16.4	-7%	-2%	27	65%	62%	61%
R 20	Centennial College-Morningside Campus 1	16	21.0	18.0	-14%	16.3	-22%	-9%	27	78%	67%	61%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	16	17.3	17.6	2%	16.6	-4%	-6%	27	64%	65%	61%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	16	20.1	18.7	-7%	16.2	-19%	-13%	27	75%	69%	60%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	16	17.8	17.2	-4%	16.7	-6%	-3%	27	66%	64%	62%
R 24	Residential Receptor at Scarbell Drive, Scarborough	16	20.2	18.0	-11%	16.7	-17%	-7%	27	75%	67%	62%
R 25	Meadowvale Public School, Primary School, Scarborough	16	18.2	16.8	-8%	16.4	-10%	-2%	27	68%	62%	61%
R 26	Meadowvale Day Care Centre, Scarborough	16	17.3	17.4	0%	16.9	-3%	-3%	27	64%	64%	63%
R 27	Residential Receptor near Kingston Road, Scarborough	16	16.5	16.5	0%	16.6	1%	1%	27	61%	61%	61%
R 28	Rouge Valley Public School, Primary school	16	17.4	17.0	-2%	16.3	-6%	-4%	27	65%	63%	61%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	16	19.4	16.9	-13%	16.3	-16%	-4%	27	72%	63%	60%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	16	21.8	18.9	-14%	16.1	-26%	-15%	27	81%	70%	60%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	16	18.4	18.6	1%	16.6	-10%	-10%	27	68%	69%	62%
R 32	Altamont Care Community, Scarborough	16	21.8	17.8	-18%	16.9	-23%	-5%	27	81%	66%	62%
R 33	EDUKids Child Care Centres Altona Road, Pickering	16	17.8	16.4	-8%	16.4	-8%	0%	27	66%	61%	61%
R 34	The Gates Medical Centre, Pickering	16	16.5	16.8	2%	17.2	4%	3%	27	61%	62%	64%
R 35	Residential Receptor near Rougemount Drive, Pickering	16	20.1	16.3	-19%	16.5	-18%	1%	27	75%	60%	61%
R 36	Dunbarton High School - Pickering	16	20.9	17.0	-19%	16.2	-23%	-5%	27	78%	63%	60%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	16	18.4	17.4	-5%	17.1	-7%	-2%	27	68%	64%	63%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	16	19.9	17.7	-11%	16.4	-18%	-7%	27	74%	66%	61%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	16	19.8	18.2	-8%	16.5	-17%	-9%	27	73%	68%	61%
R 40	Durham Drug Store Walk-In Clinic, Pickering	16	19.8	16.6	-16%	16.6	-16%	0%	27	73%	62%	61%
R 41	Residential Receptor near Sheppard Ave, Pickering	16	19.5	17.7	-9%	16.6	-15%	-6%	27	72%	66%	62%
R 42	Bayfair Daycare, Pickering	16	19.4	16.6	-14%	16.6	-14%	0%	27	72%	61%	62%
R 43	Muppets Children's Centre, Pickering	16	17.8	17.4	-2%	16.7	-6%	-4%	27	66%	64%	62%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	16	18.3	16.3	-10%	16.7	-8%	2%	27	68%	61%	62%
R 45	Residential Receptor near Kingston Road, Pickering	16	16.5	17.9	8%	16.5	0%	-8%	27	61%	66%	61%
R 46	Residential Receptor near RR29, Pickering	16	18.2	18.0	-1%	16.6	-9%	-8%	27	67%	67%	61%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	16	17.9	17.1	-5%	16.1	-10%	-5%	27	66%	63%	60%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	16	21.3	18.2	-14%	16.2	-24%	-11%	27	79%	68%	60%
R 49	Glengrove School, Pickering	16	24.2	17.4	-28%	16.5	-32%	-5%	27	90%	64%	61%
R 50	VIVA Pickering Retirement Community, Pickering	16	20.9	18.0	-14%	16.7	-20%	-7%	27	78%	67%	62%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	16	22.1	17.7	-20%	17.0	-23%	-4%	27	82%	65%	63%
R 52	Little Rose Home Daycare., Pickering	16	21.0	17.1	-19%	16.9	-20%	-2%	27	78%	63%	62%
R 53	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	16	18.1	16.9	-7%	16.6	-9%	-2%	27	67%	62%	61%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	16	17.6	17.6	0%	16.7	-5%	-5%	27	65%	65%	62%
R 55	Residential receptor near Brock Road, Pickering	16	21.3	16.1	-25%	16.5	-22%	3%	27	79%	59%	61%
R 56	Alert Nursing & Home Care Svc, Pickering	16	20.4	17.4	-15%	16.8	-17%	-3%	27	75%	64%	62%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	16	20.9	16.7	-20%	17.0	-19%	2%	27	77%	62%	63%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	16	18.5	17.3	-7%	16.9	-9%	-2%	27	69%	64%	63%
R 59	Residential Receptor near Church Street, Ajax	16	18.1	17.7	-2%	16.8	-7%	-5%	27	67%	66%	62%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	16	21.6	17.4	-19%	17.3	-20%	0%	27	80%	64%	64%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	16	20.8	17.2	-17%	16.7	-20%	-3%	27	77%	64%	62%
R 62	Lincoln Avenue Public School, Ajax	16	19.8	18.0	-9%	16.7	-16%	-7%	27	74%	67%	62%
R 63	Residential Receptor near Westney Road, Ajax	16	17.9	17.7	-1%	16.9	-6%	-4%	27	66%	65%	63%
R 64	Residential Receptor near Durham Street, Ajax	16	19.0	16.9	-11%	16.9	-11%	0%	27	70%	63%	63%
R 65	Residential Receptor near Durham street, Ajax	16	18.1	17.7	-2%	16.4	-9%	-7%	27	67%	66%	61%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	16	22.9	18.0	-21%	16.7	-27%	-7%	27	85%	67%	62%
R 67	Westney Heights Medical Centre, Ajax	16	23.1	17.3	-25%	16.4	-29%	-5%	27	86%	64%	61%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	16	21.0	17.1	-19%	16.7	-20%	-2%	27	78%	63%	62%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	16	20.7	17.1	-17%	16.6	-20%	-3%	27	77%	63%	62%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	16	21.5	17.9	-17%	16.3	-24%	-9%	27	79%	66%	61%
R 71	Residential Receptor near Salem Road, Ajax	16	25.5	17.8	-30%	16.5	-35%	-7%	27	95%	66%	61%
R 72	Residential Receptor Martinworth Lane, Ajax	16	23.0	17.6	-24%	16.6	-28%	-6%	27	85%	65%	61%
R 73	Residential Receptor near Lake Ridge Road, Whitby	16	22.2	17.1	-23%	16.6	-25%	-3%	27	82%	63%	61%
R 74	Residential Receptor Bluebell Crescent, Whitby	16	20.2	17.5	-14%	16.6	-18%	-5%	27	75%	65%	61%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	16	24.4	17.7	-27%	17.2	-30%	-3%	27	90%	65%	64%
R 76	Fairview Lodge, Nursing home, Whitby	16	21.9	17.7	-19%	17.1	-22%	-3%	27	81%	65%	63%
R 77	Kids & Company, Whitby	16	22.1	17.4	-22%	17.1	-23%	-2%	27	82%	64%	63%
R 78	MyHealth Centre, Whitby	16	24.3	17.7	-27%	16.7	-31%	-6%	27	90%	66%	62%
R 79	East Whitby Clinic - Medical Clinic, Whitby	16	19.5	16.9	-13%	17.6	-10%	4%	27	72%	63%	65%
R 80	Durham Montessori School & Daycare, Whitby	16	20.3	16.6	-18%	16.8	-17%	1%	27	75%	62%	62%
R 81	Perry House Child Care Services, Whitby	16	22.1	16.6	-26%	17.2	-22%	4%	27	82%	61%	64%
R 82	Blyth Academy Whitby - Private school, Whitby	16	22.8	18.1	-21%	17.0	-25%	-6%	27	84%	67%	63%
R 83	Residential Receptor near Garden Street, Whitby	16	19.7	16.7	-15%	16.6	-15%	0%	27	73%	62%	62%
R 84	Residential Receptor near Garden Street, Whitby	16	21.1	17.4	-17%	16.6	-21%	-5%	27	78%	65%	61%
R 85	Residential Receptor near Garden Street, Whitby	16	20.9	17.7	-15%	16.7	-20%	-6%	27	77%	66%	62%
R 86	Residential Receptor near Garden Street, Whitby	16	19.5	16.7	-15%	16.5	-16%	-1%	27	72%	62%	61%
R 87	Trafalgar Castle School, Whitby	16	18.9	17.4	-8%	16.7	-12%	-4%	27	70%	64%	62%
R 88	Residential Receptor near Dundas Street, Whitby	16	17.5	16.6	-5%	16.9	-3%	2%	27	65%	62%	63%
R 89	Residential Receptor near Lupin Drive, Whitby	16	19.5	17.1	-12%	16.7	-14%	-2%	27	72%	63%	62%
R 90	C.E. Broughton Public School - Public school, Whitby	16	19.0	18.2	-4%	16.7	-12%	-8%	27	70%	67%	62%
R 91	Anderson CVI highs School, Whitby	16	18.5	18.1	-2%	16.6	-10%	-8%	27	68%	67%	62%
R 92	St Theresa Catholic School, Whitby	16	20.6	16.6	-20%	16.2	-21%	-2%	27	76%	61%	60%
R 93	Fairy Glen Day Care Centre	16	18.9	16.5	-13%	16.2	-14%	-1%	27	70%	61%	60%
R 94	Learning Jungle Thickson, Whitby	16	19.3	17.0	-12%	16.5	-14%	-3%	27	71%	63%	61%
R 95	Whitby Medical Arts Urgent Care, Whitby	16	18.5	16.2	-12%	16.9	-9%	4%	27	68%	60%	63%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	16	18.8	18.5	-2%	16.6	-12%	-10%	27	70%	68%	61%
R 97	Residential Receptor near Kathleen Street, Whitby	16	18.4	17.6	-5%	16.7	-9%	-5%	27	68%	65%	62%
R 98	Residential Receptor near Thornton Road, Oshawa	16	20.3	16.9	-17%	17.0	-16%	1%	27	75%	63%	63%
R 99	Residential Receptor near Thornton Road, Oshawa	16	19.3	17.0	-12%	19.0	-2%	12%	27	72%	63%	70%
R 100	Residential Receptor near Thornton Road, Oshawa	16	19.2	18.0	-6%	18.7	-3%	4%	27	71%	67%	69%
R 101	Residential Receptor near Stevenson Road, Oshawa	16	17.3	16.7	-4%	19.6	13%	17%	27	64%	62%	72%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	16	23.2	16.6	-28%	21.0	-10%	26%	27	86%	62%	78%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	16	22.5	16.5	-26%	19.3	-14%	17%	27	83%	61%	71%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	16	22.2	18.2	-18%	19.7	-11%	8%	27	82%	67%	73%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	16	16.0	16.0	0%	18.4	15%	15%	27	59%	59%	68%
R 106	Mary Street Community School, Oshawa	16	16.0	16.8	4%	18.9	18%	13%	27	59%	62%	70%
R 107	Magic Pencils Learning Centre, Oshawa	16	16.0	17.3	8%	19.5	22%	13%	27	59%	64%	72%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	16	16.1	16.5	3%	18.9	18%	15%	27	59%	61%	

Table B-3 Maximum Annual PM2.5 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)	2041 Future Build (2041)			AAQC (µg/m ³)	% of the AAQC			
ID	Name	Concentration	24-hr Max Concentration	24-hr Max Concentration	% change from Existing Conditions	24-hr Max Concentration	% change from Existing Conditions		% change from No-Build	Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	9	9.0	9.0	0%	9.0	0%	0%	8.8	102%	102%	102%
R 2	Town Care Walk-in Clinic, Scarborough	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	102%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarboro	9	9.5	9.1	-4%	9.1	-4%	0%	8.8	108%	103%	103%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	9	9.2	9.0	-2%	9.0	-2%	0%	8.8	104%	103%	103%
R 5	Residential Receptor near Stanwell Drive, Scarborough	9	9.5	9.1	-4%	9.1	-4%	0%	8.8	108%	103%	103%
R 6	Residential Receptor near Stoneton Drive, Scarborough	9	9.9	9.1	-8%	9.1	-8%	0%	8.8	112%	103%	103%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	9	9.6	9.1	-5%	9.1	-5%	0%	8.8	109%	103%	103%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	102%	103%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	104%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	104%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	9	9.3	9.0	-3%	9.1	-2%	1%	8.8	106%	103%	104%
R 12	Residential apartment near Markham Road, Scarborough	9	9.4	9.1	-4%	9.1	-4%	0%	8.8	107%	103%	103%
R 13	Residential apartment near Markham Road, Scarborough	9	9.6	9.0	-6%	9.1	-5%	0%	8.8	109%	103%	103%
R 14	Residential apartment near Markham Road, Scarborough	9	9.7	9.1	-7%	9.2	-5%	2%	8.8	111%	103%	105%
R 15	Residential Receptor near Orton Park Road, Scarborough	9	9.2	9.0	-2%	9.1	0%	1%	8.8	104%	102%	104%
R 16	Residential Receptor near Nelson Road, Scarborough	9	9.1	9.0	-1%	9.1	0%	1%	8.8	103%	102%	103%
R 17	Residential Receptor near Morningside Avenue, Scarborough	9	9.2	9.0	-2%	9.2	-1%	1%	8.8	105%	103%	104%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	9	9.1	9.0	-1%	9.1	0%	1%	8.8	103%	102%	103%
R 19	The Shoniker Clinic., The Shoniker Clinic	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 20	Centennial College-Morningside Campus 1	9	9.1	9.0	-1%	9.1	0%	1%	8.8	104%	102%	103%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	9	9.3	9.1	-3%	9.2	-2%	1%	8.8	106%	103%	104%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	9	9.1	9.0	-1%	9.1	-1%	1%	8.8	104%	103%	103%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	9	9.2	9.0	-2%	9.2	0%	2%	8.8	105%	103%	104%
R 24	Residential Receptor at Scarbell Drive, Scarborough	9	9.2	9.0	-1%	9.1	0%	1%	8.8	104%	103%	104%
R 25	Meadowvale Public School, Primary School, Scarborough	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 26	Meadowvale Day Care Centre, Scarborough	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 27	Residential Receptor near Kingston Road, Scarborough	9	9.1	9.0	-1%	9.1	0%	1%	8.8	103%	102%	104%
R 28	Rouge Valley Public School, Primary school	9	9.1	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	9	9.1	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	9	9.7	9.1	-6%	9.1	-6%	1%	8.8	111%	103%	104%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	9	9.5	9.1	-4%	9.2	-3%	1%	8.8	108%	103%	104%
R 32	Altamont Care Community, Scarborough	9	9.1	9.0	-1%	9.0	-1%	0%	8.8	103%	102%	103%
R 33	EDUKids Child Care Centres Altona Road, Pickering	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	103%
R 34	The Gates Medical Centre, Pickering	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	103%	103%
R 35	Residential Receptor near Rougemount Drive, Pickering	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	104%
R 36	Dunbarton High School - Pickering	9	9.1	9.0	-1%	9.0	-1%	0%	8.8	104%	103%	103%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	9	9.6	9.1	-5%	9.1	-5%	0%	8.8	109%	103%	104%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	9	9.9	9.1	-8%	9.1	-7%	1%	8.8	112%	103%	104%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	9	9.4	9.0	-4%	9.1	-3%	1%	8.8	107%	103%	104%
R 40	Durham Drug Store Walk-In Clinic, Pickering	9	9.1	9.0	-1%	9.0	-1%	0%	8.8	103%	102%	103%
R 41	Residential Receptor near Sheppard Ave, Pickering	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 42	Bayfair Daycare, Pickering	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	102%	104%
R 43	Muppets Children's Centre, Pickering	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 45	Residential Receptor near Kingston Road, Pickering	9	9.2	9.0	-2%	9.1	-1%	0%	8.8	104%	103%	103%
R 46	Residential Receptor near RR29, Pickering	9	9.3	9.0	-3%	9.1	-3%	0%	8.8	106%	103%	103%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	9	9.3	9.0	-3%	9.1	-3%	0%	8.8	106%	103%	103%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	9	9.4	9.0	-4%	9.2	-3%	2%	8.8	107%	103%	104%
R 49	Glengrove School, Pickering	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 50	VIVA Pickering Retirement Community, Pickering	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	103%	103%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	9	9.0	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 52	Little Rose Home Daycare., Pickering	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	9	9.4	9.1	-4%	9.2	-3%	1%	8.8	107%	103%	104%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	9	9.7	9.1	-6%	9.1	-6%	0%	8.8	110%	103%	104%
R 55	Residential receptor near Brock Road, Pickering	9	9.5	9.1	-5%	9.2	-4%	1%	8.8	108%	103%	104%
R 56	Alert Nursing & Home Care Svc, Pickering	9	9.1	9.0	-1%	9.0	-1%	0%	8.8	103%	102%	103%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	102%	103%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	9	9.6	9.1	-6%	9.2	-4%	2%	8.8	109%	103%	105%
R 59	Residential Receptor near Church Street, Ajax	9	9.3	9.0	-3%	9.1	-3%	0%	8.8	106%	103%	103%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	103%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	9	9.7	9.1	-6%	9.2	-4%	2%	8.8	110%	103%	105%
R 62	Lincoln Avenue Public School, Ajax	9	9.1	9.0	-1%	9.1	0%	1%	8.8	103%	102%	103%
R 63	Residential Receptor near Westney Road, Ajax	9	9.3	9.0	-3%	9.1	-3%	1%	8.8	106%	103%	103%
R 64	Residential Receptor near Durham Street, Ajax	9	9.4	9.0	-3%	9.1	-3%	1%	8.8	106%	103%	104%
R 65	Residential Receptor near Durham street, Ajax	9	9.4	9.1	-4%	9.1	-4%	0%	8.8	107%	103%	103%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	9	9.4	9.0	-4%	9.1	-3%	1%	8.8	107%	103%	103%
R 67	Westney Heights Medical Centre, Ajax	9	9.4	9.0	-4%	9.1	-3%	0%	8.8	106%	103%	103%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	104%	102%	103%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	9	9.3	9.0	-3%	9.1	-2%	0%	8.8	106%	103%	103%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	9	9.7	9.1	-6%	9.2	-5%	1%	8.8	110%	103%	104%
R 71	Residential Receptor near Salem Road, Ajax	9	9.8	9.1	-8%	9.1	-7%	1%	8.8	111%	103%	104%
R 72	Residential Receptor Martinworth Lane, Ajax	9	9.1	9.0	-1%	9.2	0%	2%	8.8	104%	102%	104%
R 73	Residential Receptor near Lake Ridge Road, Whitby	9	9.1	9.0	-1%	9.1	0%	1%	8.8	103%	102%	103%
R 74	Residential Receptor Bluebell Crescent, Whitby	9	9.2	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	104%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 76	Fairview Lodge, Nursing home, Whitby	9	9.3	9.0	-2%	9.1	-1%	1%	8.8	105%	103%	104%
R 77	Kids & Company, Whitby	9	9.1	9.0	-1%	9.0	0%	0%	8.8	103%	102%	103%
R 78	MyHealth Centre, Whitby	9	9.3	9.0	-3%	9.2	-1%	1%	8.8	106%	103%	104%
R 79	East Whitby Clinic - Medical Clinic, Whitby	9	9.1	9.0	0%	9.0	0%	0%	8.8	103%	102%	103%
R 80	Durham Montessori School & Daycare, Whitby	9	9.1	9.0								

Table B-4 Maximum 1-hour NO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)	2041 Future Build (2041)			CAAQS (µg/m³)	% of the CAAQS			
ID	Name	Concentration			% change from Existing Conditions	98th Percentile 1-hr Concentration	% change from Existing Conditions		% change from No-Build	Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m³)	(µg/m³)	(µg/m³)		µg/m³						
R 1	Oasis Family Health Centre, Scarborough	59.0	149.4	78.5	-47%	84.2	-44%	7%	79	189%	99%	107%
R 2	Town Care Walk-in Clinic, Scarborough	59.0	147.4	82.5	-44%	88.3	-40%	7%	79	187%	104%	112%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	59.0	147.2	81.4	-45%	89.3	-39%	10%	79	186%	103%	113%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	59.0	148.1	69.1	-53%	73.2	-51%	6%	79	188%	87%	93%
R 5	Residential Receptor near Stanwell Drive, Scarborough	59.0	148.0	68.4	-54%	73.1	-51%	7%	79	187%	87%	93%
R 6	Residential Receptor near Stoneton Drive, Scarborough	59.0	144.6	62.0	-57%	63.6	-56%	3%	79	183%	78%	81%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	59.0	148.8	74.5	-50%	82.8	-44%	11%	79	188%	94%	105%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	59.0	147.3	74.8	-49%	84.9	-42%	14%	79	186%	95%	107%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	59.0	148.4	73.7	-50%	80.7	-46%	9%	79	188%	93%	102%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	59.0	148.7	66.6	-55%	70.4	-53%	6%	79	188%	84%	89%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	59.0	147.9	62.3	-58%	64.4	-56%	3%	79	187%	79%	82%
R 12	Residential apartment near Markham Road, Scarborough	59.0	146.8	61.4	-59%	64.7	-56%	5%	79	186%	78%	82%
R 13	Residential apartment near Markham Road, Scarborough	59.0	131.0	61.9	-53%	64.4	-51%	4%	79	166%	78%	82%
R 14	Residential apartment near Markham Road, Scarborough	59.0	146.8	60.8	-59%	61.5	-58%	1%	79	186%	77%	78%
R 15	Residential Receptor near Orton Park Road, Scarborough	59.0	130.6	67.8	-48%	71.5	-45%	6%	79	165%	86%	91%
R 16	Residential Receptor near Nelson Road, Scarborough	59.0	126.1	69.1	-45%	72.2	-43%	5%	79	160%	87%	91%
R 17	Residential Receptor near Morningside Avenue, Scarborough	59.0	130.0	72.3	-44%	75.5	-42%	4%	79	165%	92%	96%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	59.0	110.0	70.5	-36%	74.7	-32%	6%	79	139%	89%	95%
R 19	The Shoniker Clinic., The Shoniker Clinic	59.0	98.9	65.6	-34%	68.9	-30%	5%	79	125%	83%	87%
R 20	Centennial College-Morningside Campus 1	59.0	128.0	66.1	-48%	69.4	-46%	5%	79	162%	84%	88%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	59.0	125.7	73.0	-42%	77.9	-38%	7%	79	159%	92%	99%
R 22	N'sheemaethn daycare Center near Intersection of Military Trail & Ellesmere Road	59.0	111.0	66.8	-40%	70.5	-37%	6%	79	141%	85%	89%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	59.0	111.6	77.9	-30%	85.7	-23%	10%	79	141%	99%	108%
R 24	Residential Receptor at Scarbell Drive, Scarborough	59.0	113.9	67.3	-41%	71.5	-37%	6%	79	144%	85%	90%
R 25	Meadowdale Public School, Primary School, Scarborough	59.0	108.5	67.3	-38%	71.5	-34%	6%	79	137%	85%	91%
R 26	Meadowdale Day Care Centre, Scarborough	59.0	109.1	70.0	-36%	75.3	-31%	8%	79	138%	89%	95%
R 27	Residential Receptor near Kingston Road, Scarborough	59.0	100.7	64.5	-36%	68.1	-32%	6%	79	127%	82%	86%
R 28	Rouge Valley Public School, Primary school	59.0	126.9	64.9	-49%	68.7	-46%	6%	79	161%	82%	87%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	59.0	125.9	60.8	-52%	62.2	-51%	2%	79	159%	77%	79%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	59.0	108.9	60.5	-45%	60.8	-44%	1%	79	138%	77%	77%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	59.0	111.6	72.3	-35%	78.0	-30%	8%	79	141%	92%	99%
R 32	Altamont Care Community, Scarborough	59.0	65.8	81.5	24%	89.4	36%	10%	79	83%	103%	113%
R 33	EDUKids Child Care Centres Altona Road, Pickering	59.0	115.7	71.8	-38%	77.4	-33%	8%	79	146%	91%	98%
R 34	The Gates Medical Centre, Pickering	59.0	108.7	73.3	-33%	80.2	-26%	9%	79	138%	93%	102%
R 35	Residential Receptor near Rougemount Drive, Pickering	59.0	99.9	66.4	-34%	71.0	-29%	7%	79	126%	84%	90%
R 36	Dunbarton High School - Pickering	59.0	113.7	60.2	-47%	61.0	-46%	1%	79	144%	76%	77%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	59.0	116.6	75.4	-35%	82.2	-29%	9%	79	148%	95%	104%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	59.0	147.5	69.0	-53%	72.1	-51%	5%	79	187%	87%	91%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	59.0	91.9	72.5	-21%	75.7	-18%	4%	79	116%	92%	96%
R 40	Durham Drug Store Walk-In Clinic, Pickering	59.0	101.9	70.4	-31%	74.8	-27%	6%	79	129%	89%	95%
R 41	Residential Receptor near Sheppard Ave, Pickering	59.0	98.3	76.4	-22%	83.0	-16%	9%	79	124%	97%	105%
R 42	Bayfair Daycare, Pickering	59.0	89.6	75.9	-15%	83.3	-7%	10%	79	113%	96%	105%
R 43	Muppets Children's Centre, Pickering	59.0	92.6	68.2	-26%	72.7	-22%	7%	79	117%	86%	92%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	59.0	74.2	72.0	-3%	78.3	6%	9%	79	94%	91%	99%
R 45	Residential Receptor near Kingston Road, Pickering	59.0	128.8	63.2	-51%	65.9	-49%	4%	79	163%	80%	83%
R 46	Residential Receptor near RR29, Pickering	59.0	129.6	64.6	-50%	68.2	-47%	6%	79	164%	82%	86%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	59.0	129.2	60.1	-53%	60.8	-53%	1%	79	164%	76%	77%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	59.0	105.0	62.5	-41%	64.7	-38%	4%	79	133%	79%	82%
R 49	Glengrove School, Pickering	59.0	145.8	63.5	-56%	66.4	-54%	5%	79	185%	80%	84%
R 50	VIVA Pickering Retirement Community, Pickering	59.0	124.9	79.9	-36%	86.2	-31%	8%	79	158%	101%	109%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	59.0	149.4	78.0	-48%	83.7	-44%	7%	79	189%	99%	106%
R 52	Little Rose Home Daycare., Pickering	59.0	97.9	81.5	-17%	88.9	-9%	9%	79	124%	103%	112%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	59.0	147.8	68.9	-53%	72.3	-51%	5%	79	187%	87%	92%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	59.0	150.2	69.3	-54%	73.0	-51%	5%	79	190%	88%	92%
R 55	Residential receptor near Brook Road, Pickering	59.0	147.8	67.6	-54%	71.8	-51%	6%	79	187%	86%	91%
R 56	Alert Nursing & Home Care Svc, Pickering	59.0	121.4	79.8	-34%	86.6	-29%	9%	79	154%	101%	110%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	59.0	146.9	77.5	-47%	83.5	-43%	8%	79	186%	98%	106%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	59.0	149.7	74.6	-50%	80.7	-46%	8%	79	190%	94%	102%
R 59	Residential Receptor near Church Street, Ajax	59.0	147.4	77.9	-47%	84.9	-42%	9%	79	187%	99%	107%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	59.0	145.4	77.4	-47%	84.5	-42%	9%	79	184%	98%	107%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	59.0	147.8	70.3	-52%	77.3	-48%	10%	79	187%	89%	98%
R 62	Lincoln Avenue Public School, Ajax	59.0	144.2	78.4	-46%	85.3	-41%	9%	79	182%	99%	108%
R 63	Residential Receptor near Westney Road, Ajax	59.0	148.8	80.7	-46%	88.4	-41%	10%	79	188%	102%	112%
R 64	Residential Receptor near Durham Street, Ajax	59.0	148.1	74.2	-50%	80.4	-46%	8%	79	187%	94%	102%
R 65	Residential Receptor near Durham street, Ajax	59.0	146.8	70.5	-52%	75.2	-49%	7%	79	186%	89%	95%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	59.0	137.5	75.3	-45%	81.6	-41%	8%	79	174%	95%	103%
R 67	Westney Heights Medical Centre, Ajax	59.0	137.5	69.9	-49%	74.3	-46%	6%	79	174%	89%	94%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	59.0	139.9	70.8	-49%	75.9	-46%	7%	79	177%	90%	96%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	59.0	117.8	77.1	-35%	79.3	-33%	3%	79	149%	98%	100%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	59.0	106.8	65.2	-39%	65.2	-39%	0%	79	135%	83%	83%
R 71	Residential Receptor near Salem Road, Ajax	59.0	98.7	68.0	-31%	70.2	-29%	3%	79	125%	86%	89%
R 72	Residential Receptor Martinworth Lane, Ajax	59.0	111.2	73.1	-34%	78.0	-30%	7%	79	141%	93%	99%
R 73	Residential Receptor near Lake Ridge Road, Whitby	59.0	130.1	73.0	-44%	77.4	-41%	6%	79	165%	92%	98%
R 74	Residential Receptor Bluebell Crescent, Whitby	59.0	129.2	77.0	-40%	92.1	-29%	20%	79	164%	97	

Table B-5 Maximum 24-hour NO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			CAAQS (µg/m ³)	% of the CAAQS		
ID	Name	Concentration			% change from Existing Conditions	98th Percentile 1-hr Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m ³)	(µg/m ³)	(µg/m ³)		µg/m ³						
R 1	Oasis Family Health Centre, Scarborough	49.0	61.8	50.5	-18%	50.9	-18%	1%	200	31%	25%	25%
R 2	Town Care Walk-in Clinic, Scarborough	49.0	56.4	50.7	-10%	51.2	-9%	1%	200	28%	25%	26%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	49.0	58.1	51.2	-12%	51.6	-11%	1%	200	29%	26%	26%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	49.0	53.3	50.4	-5%	50.8	-5%	1%	200	27%	25%	25%
R 5	Residential Receptor near Stanwell Drive, Scarborough	49.0	52.1	50.7	-3%	50.7	-3%	0%	200	26%	25%	25%
R 6	Residential Receptor near Stoneton Drive, Scarborough	49.0	50.0	50.8	2%	50.9	2%	0%	200	25%	25%	25%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	49.0	56.0	50.4	-10%	50.8	-9%	1%	200	28%	25%	25%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	49.0	54.3	50.1	-8%	50.5	-7%	1%	200	27%	25%	25%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	49.0	56.8	50.3	-11%	50.8	-10%	1%	200	28%	25%	25%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	49.0	53.1	50.9	-4%	51.6	-3%	1%	200	27%	25%	26%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	49.0	49.8	50.5	1%	50.9	2%	1%	200	25%	25%	25%
R 12	Residential apartment near Markham Road, Scarborough	49.0	50.3	51.0	1%	51.5	2%	1%	200	25%	25%	26%
R 13	Residential apartment near Markham Road, Scarborough	49.0	50.7	50.2	-1%	50.7	0%	1%	200	25%	25%	25%
R 14	Residential apartment near Markham Road, Scarborough	49.0	49.7	50.3	1%	50.6	2%	1%	200	25%	25%	25%
R 15	Residential Receptor near Orton Park Road, Scarborough	49.0	50.8	49.9	-2%	50.1	-1%	0%	200	25%	25%	25%
R 16	Residential Receptor near Nelson Road, Scarborough	49.0	52.3	50.2	-4%	50.7	-3%	1%	200	26%	25%	25%
R 17	Residential Receptor near Morningside Avenue, Scarborough	49.0	54.6	49.9	-9%	50.3	-8%	1%	200	27%	25%	25%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	49.0	53.9	49.6	-8%	49.8	-8%	0%	200	27%	25%	25%
R 19	The Shoniker Clinic., The Shoniker Clinic	49.0	51.1	49.4	-3%	49.6	-3%	0%	200	26%	25%	25%
R 20	Centennial College-Morningside Campus 1	49.0	51.0	50.4	-1%	51.0	0%	1%	200	26%	25%	25%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	49.0	55.7	51.0	-9%	51.7	-7%	1%	200	28%	25%	26%
R 22	N'sheemaethn daycare Center near Intersection of Military Trail & Ellesmere Road	49.0	50.8	49.7	-2%	49.9	-2%	0%	200	25%	25%	25%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	49.0	54.5	49.7	-9%	50.1	-8%	1%	200	27%	25%	25%
R 24	Residential Receptor at Scarbell Drive, Scarborough	49.0	53.4	49.9	-6%	50.2	-6%	1%	200	27%	25%	25%
R 25	Meadowvale Public School, Primary School, Scarborough	49.0	51.4	49.6	-3%	49.9	-3%	0%	200	26%	25%	25%
R 26	Meadowvale Day Care Centre, Scarborough	49.0	54.6	49.7	-9%	49.9	-9%	0%	200	27%	25%	25%
R 27	Residential Receptor near Kingston Road, Scarborough	49.0	51.9	49.7	-4%	50.6	-3%	2%	200	26%	25%	25%
R 28	Rouge Valley Public School, Primary school	49.0	50.7	50.1	-1%	50.4	-1%	0%	200	25%	25%	25%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	49.0	49.8	50.1	1%	50.3	1%	0%	200	25%	25%	25%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	49.0	50.0	50.8	2%	51.0	2%	0%	200	25%	25%	25%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	49.0	53.6	50.7	-5%	51.0	-5%	1%	200	27%	25%	25%
R 32	Altamont Care Community, Scarborough	49.0	57.0	49.2	-14%	49.3	-14%	0%	200	29%	25%	25%
R 33	EDUKids Child Care Centres Altona Road, Pickering	49.0	52.2	50.0	-4%	50.4	-3%	1%	200	26%	25%	25%
R 34	The Gates Medical Centre, Pickering	49.0	56.5	49.9	-12%	50.3	-11%	1%	200	28%	25%	25%
R 35	Residential Receptor near Rougemount Drive, Pickering	49.0	51.4	49.8	-3%	51.2	0%	3%	200	26%	25%	26%
R 36	Dunbarton High School - Pickering	49.0	49.8	50.1	1%	50.4	1%	1%	200	25%	25%	25%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	49.0	54.5	51.2	-6%	51.4	-6%	0%	200	27%	26%	26%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	49.0	52.2	51.0	-2%	51.2	-2%	0%	200	26%	25%	26%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	49.0	54.6	49.9	-9%	50.0	-8%	0%	200	27%	25%	25%
R 40	Durham Drug Store Walk-In Clinic, Pickering	49.0	54.4	49.7	-9%	50.1	-8%	1%	200	27%	25%	25%
R 41	Residential Receptor near Sheppard Ave, Pickering	49.0	54.1	49.6	-8%	50.0	-8%	1%	200	27%	25%	25%
R 42	Bayfair Daycare, Pickering	49.0	54.1	49.5	-8%	49.7	-8%	0%	200	27%	25%	25%
R 43	Muppets Children's Centre, Pickering	49.0	53.6	49.4	-8%	49.7	-7%	0%	200	27%	25%	25%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	49.0	53.5	49.2	-8%	49.3	-8%	0%	200	27%	25%	25%
R 45	Residential Receptor near Kingston Road, Pickering	49.0	51.3	50.3	-2%	50.5	-2%	1%	200	26%	25%	25%
R 46	Residential Receptor near RR29, Pickering	49.0	51.9	50.3	-3%	50.6	-3%	1%	200	26%	25%	25%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	49.0	49.7	50.3	1%	50.6	2%	1%	200	25%	25%	25%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	49.0	51.7	50.1	-3%	50.2	-3%	0%	200	26%	25%	25%
R 49	Glengrove School, Pickering	49.0	51.5	50.0	-3%	50.4	-2%	1%	200	26%	25%	25%
R 50	VIVA Pickering Retirement Community, Pickering	49.0	56.1	49.9	-11%	50.4	-10%	1%	200	28%	25%	25%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	49.0	60.0	50.6	-16%	51.1	-15%	1%	200	30%	25%	26%
R 52	Little Rose Home Daycare., Pickering	49.0	55.8	49.4	-12%	49.5	-11%	0%	200	28%	25%	25%
R 53	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	49.0	57.7	50.4	-13%	52.2	-10%	4%	200	29%	25%	26%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	49.0	57.2	51.6	-10%	51.7	-10%	0%	200	29%	26%	26%
R 55	Residential receptor near Brook Road, Pickering	49.0	51.8	50.7	-2%	50.7	-2%	0%	200	26%	25%	25%
R 56	Alert Nursing & Home Care Svc, Pickering	49.0	56.1	49.6	-11%	49.9	-11%	1%	200	28%	25%	25%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	49.0	58.8	50.2	-15%	50.6	-14%	1%	200	29%	25%	25%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	49.0	55.0	50.8	-8%	50.6	-8%	0%	200	28%	25%	25%
R 59	Residential Receptor near Church Street, Ajax	49.0	55.7	51.1	-8%	51.4	-8%	1%	200	28%	26%	26%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	49.0	55.6	50.2	-10%	52.3	-6%	4%	200	28%	25%	26%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	49.0	51.8	51.2	-1%	52.0	0%	1%	200	26%	26%	26%
R 62	Lincoln Avenue Public School, Ajax	49.0	54.4	50.0	-8%	50.4	-7%	1%	200	27%	25%	25%
R 63	Residential Receptor near Westney Road, Ajax	49.0	55.4	51.2	-8%	50.4	-9%	-2%	200	28%	26%	25%
R 64	Residential Receptor near Durham Street, Ajax	49.0	54.1	50.6	-6%	51.7	-4%	2%	200	27%	25%	26%
R 65	Residential Receptor near Durham street, Ajax	49.0	51.5	51.0	-1%	50.5	-2%	-1%	200	26%	26%	25%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	49.0	53.0	49.9	-6%	50.9	-4%	2%	200	26%	25%	25%
R 67	Westney Heights Medical Centre, Ajax	49.0	52.4	50.4	-4%	51.1	-2%	1%	200	26%	25%	26%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	49.0	60.2	50.0	-17%	50.6	-16%	1%	200	30%	25%	25%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	49.0	58.9	50.1	-15%	50.5	-14%	1%	200	29%	25%	25%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	49.0	53.3	50.8	-5%	50.5	-5%	-1%	200	27%	25%	25%
R 71	Residential Receptor near Salem Road, Ajax	49.0	54.3	50.5	-7%	50.9	-6%	1%	200	27%	25%	25%
R 72	Residential Receptor Martinworth Lane, Ajax	49.0	55.7	49.7	-11%	50.3	-10%	1%	200	28%	25%	25%
R 73	Residential Receptor near Lake Rdge Road, Whitby	49.0	55.3	50.2	-9%	50.3	-9%	0%	200	28%	25%	25%
R 74	Residential Receptor Bluebell Crescent, Whitby	49.0	56.5	49.8	-12%	49.7	-12%	0%	200	28%	25%	25%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	49.0	61.9	49.9	-19%	50.3	-19%	1%	200	31%	25%	25%
R 76	Fairview Lodge, Nursing home, Whitby	49.0	58.4	50.4	-14%	51.1	-12%	1%	200	29%	25%	26%
R 77	Kids & Company, Whitby	49.0	57.3	49.8	-13%	50.2	-12%	1%	200	29%	25%	25%
R 78	MyHealth Centre, Whitby	49.0	54.7	50.5	-8%	51.2	-6%	2%	200	27%	25%	26%
R 79	East Whitby Clinic - Medical Clinic, Whitby	49.0	57.0	49.8	-13%	50.2	-12%	1%	200	28%	25%	25%
R 80	Durham Montessori School & Daycare, Whitby	49.0	57.3	49.5	-14%	49.7	-13%	0%	200	29%	25%	25%
R 81	Perry House Child Care Services, Whitby	49.0	60.2	50.1	-17%	50.6	-16%	1%	200	30%	25%	25%
R 82	Blyth Academy Whitby - Private school, Whitby	49.0	59.4	49.8	-16%	50.3	-15%	1%	200	30%	25%	25%
R 83	Residential Receptor near Garden Street, Whitby	49.0	53.5	50.4	-6%	50.1	-6%	-1%	200	27%	25%	25%
R 84	Residential Receptor near Garden Street, Whitby	49.0	54.8	50.3	-8%	50.1	-9%	0%	200	27%	25%	25%
R 85	Residential Receptor near Garden Street, Whitby	49.0	58.6	50.0	-15%	50.6	-14%	1%	200	29%	25%	25%
R 86	Residential Receptor near Garden Street, Whitby	49.0	56.8	50.0	-12%	49.5	-13%	-1%	200	28%	25%	25%
R 87	Trafalgar Castle School, Whitby	49.0	54.3	49.5	-9%	49.6	-9%	0%	200	27%	25%	25%
R 88	Residential Receptor near Dundas Street, Whitby	49.0	55.8	49.7	-11%	49.8	-11%	0%	200	28%	25%	25%
R 89	Residential Receptor near Lupin Drive, Whitby	49.0	56.2	49.3	-12%	50.0	-11%	1%	200	28%	25%	25%
R 90	C.E. Broughton Public School - Public school, Whitby	49.0	54.3	49.4	-9%	49.7	-8%	1%	200	27%	25%	25%
R 91	Anderson CVI highs School, Whitby	49.0	52.5	49.5	-6%	49.8	-5%	1%	200	26%	25%	25%
R 92	St Theresa Catholic School, Whitby	49.0	50.6	49.5	-2%	49.9	-1%	1%	200	25%	25%	25%
R 93	Fairy Glen Day Care Centre	49.0	52.9	49.5	-6%	49.9	-6%	1%	200	26%	25%	25%
R 94	Learning Jungle Thickson, Whitby	49.0	53.0	49.3	-7%	49.5	-7%	0%	200	27%	25%	25%
R 95	Whitby Medical Arts Urgent Care, Whitby	49.0	52.2	49.2	-6%	49.3	-6%	0%	200	26%	25%	25%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	49.0	54.6	49.4	-9%	49.7	-9%	1%	200	27%	25%	25%
R 97	Residential Receptor near Kathleen Street, Whitby	49.0	52.9	49.8	-6%	50.8	-4%	2%	200	26%	25%	25%
R 98	Residential Receptor near Thornton Road, Oshawa	49.0	53.3	49.8	-7%	50.4	-5%	1%	200	27%	25%	25%
R 99	Residential Receptor near Thornton Road, Oshawa	49.0	52.3	49.7	-5%	50.2	-4%	1%	200	26%	25%	25%
R 100	Residential Receptor near Thornton Road, Oshawa	49.0	52.8	50.1	-5%	50.6	-4%	1%	200	26%	25%	25%
R 101	Residential Receptor near Stevenson Road, Oshawa	49.0	52.3	49.6	-5%	50.3	-4%	1%	200	26%	25%	25%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	49.0	54.9	49.3	-10%	49.5	-10%	0%	200	27%	25%	25%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	49.0	53.3	49.3	-8%	49.5	-7%	0%	200	27%	25%	25%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	49.0	53.2	49.2	-8%	49.3	-7%	0%	200	27%	25%	25%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	49.0	50.7	49.3	-3%	51.1	1%	4%	200	25%	25%	26%
R 106	Mary Street Community School, Oshawa	49.0	58.2	49.1	-16%	49.2	-15%	0%	200	29%	25%	

Table B-6 Maximum Annual Average NO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			CAAQS (µg/m ³)	% of the CAAQS		
ID	Name	Concentration			% change from Existing Conditions	98th Percentile 1-hr Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m ³)	(µg/m ³)	(µg/m ³)		µg/m ³						
R 1	Oasis Family Health Centre, Scarborough	32.0	32.1	32.0	0%	32.0	0%	0%	23	140%	139%	139%
R 2	Town Care Walk-in Clinic, Scarborough	32.0	32.3	32.0	-1%	32.0	-1%	0%	23	140%	139%	139%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	32.0	34.6	32.4	-6%	32.3	-7%	-1%	23	150%	141%	140%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	32.0	33.0	32.2	-3%	32.2	-2%	0%	23	144%	140%	140%
R 5	Residential Receptor near Stanwell Drive, Scarborough	32.0	34.5	32.5	-6%	32.1	-7%	-1%	23	150%	141%	140%
R 6	Residential Receptor near Stoneton Drive, Scarborough	32.0	34.7	32.6	-6%	32.1	-7%	-2%	23	151%	142%	139%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	32.0	33.9	32.5	-4%	32.3	-5%	-1%	23	147%	141%	140%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	32.0	32.5	32.1	-1%	32.2	-1%	0%	23	141%	140%	140%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	32.0	32.8	32.2	-2%	32.3	-1%	0%	23	143%	140%	141%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	32.0	32.9	32.2	-2%	32.1	-3%	0%	23	143%	140%	139%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	32.0	33.2	32.2	-3%	32.0	-3%	-1%	23	144%	140%	139%
R 12	Residential apartment near Markham Road, Scarborough	32.0	34.2	32.4	-5%	32.1	-6%	-1%	23	149%	141%	140%
R 13	Residential apartment near Markham Road, Scarborough	32.0	34.0	32.4	-5%	32.2	-5%	-1%	23	148%	141%	140%
R 14	Residential apartment near Markham Road, Scarborough	32.0	34.2	32.5	-5%	32.0	-7%	-2%	23	149%	141%	139%
R 15	Residential Receptor near Orton Park Road, Scarborough	32.0	32.5	32.1	-1%	32.1	-1%	0%	23	141%	140%	139%
R 16	Residential Receptor near Nelson Road, Scarborough	32.0	32.4	32.1	-1%	32.0	-1%	0%	23	141%	140%	139%
R 17	Residential Receptor near Morningside Avenue, Scarborough	32.0	32.7	32.2	-1%	32.1	-2%	0%	23	142%	140%	139%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	32.0	32.2	32.1	0%	32.3	0%	1%	23	140%	139%	140%
R 19	The Shoniker Clinic., The Shoniker Clinic	32.0	32.1	32.0	0%	32.2	0%	1%	23	140%	139%	140%
R 20	Centennial College-Morningside Campus 1	32.0	32.6	32.1	-1%	32.1	-2%	0%	23	142%	140%	139%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	32.0	33.4	32.3	-3%	32.3	-3%	0%	23	145%	141%	140%
R 22	N'sheemaeh'n daycare Center near Intersection of Military Trail & Ellesmere Road	32.0	32.6	32.2	-1%	32.1	-1%	0%	23	142%	140%	140%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	32.0	32.7	32.2	-2%	32.2	-2%	0%	23	142%	140%	140%
R 24	Residential Receptor at Scarbell Drive, Scarborough	32.0	32.6	32.1	-2%	32.1	-2%	0%	23	142%	140%	139%
R 25	Meadowdale Public School, Primary School, Scarborough	32.0	32.1	32.0	0%	32.1	0%	0%	23	140%	139%	139%
R 26	Meadowdale Day Care Centre, Scarborough	32.0	32.1	32.0	0%	32.1	0%	0%	23	140%	139%	140%
R 27	Residential Receptor near Kingston Road, Scarborough	32.0	32.5	32.1	-1%	32.1	-1%	0%	23	141%	140%	139%
R 28	Rouge Valley Public School, Primary school	32.0	32.3	32.1	-1%	32.1	-1%	0%	23	140%	139%	140%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	32.0	32.3	32.1	-1%	32.1	-1%	0%	23	140%	139%	139%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	32.0	34.9	32.6	-7%	32.1	-8%	-2%	23	152%	142%	139%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	32.0	34.1	32.4	-5%	32.2	-5%	-1%	23	148%	141%	140%
R 32	Altamont Care Community, Scarborough	32.0	32.3	32.1	-1%	32.1	-1%	0%	23	140%	139%	139%
R 33	EDUKids Child Care Centres Altona Road, Pickering	32.0	33.0	32.2	-2%	32.1	-3%	0%	23	143%	140%	139%
R 34	The Gates Medical Centre, Pickering	32.0	32.8	32.2	-2%	32.3	-1%	0%	23	143%	140%	140%
R 35	Residential Receptor near Rougemount Drive, Pickering	32.0	32.9	32.2	-2%	32.2	-2%	0%	23	143%	140%	140%
R 36	Dunbarton High School - Pickering	32.0	32.7	32.1	-2%	32.0	-2%	0%	23	142%	140%	139%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	32.0	35.1	32.6	-7%	32.2	-8%	-1%	23	152%	142%	140%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	32.0	35.1	32.6	-7%	32.0	-9%	-2%	23	153%	142%	139%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	32.0	33.3	32.3	-3%	32.1	-4%	-1%	23	145%	140%	139%
R 40	Durham Drug Store Walk-In Clinic, Pickering	32.0	32.4	32.1	-1%	32.2	-1%	0%	23	141%	140%	140%
R 41	Residential Receptor near Sheppard Ave, Pickering	32.0	32.4	32.1	-1%	32.1	-1%	0%	23	141%	139%	139%
R 42	Bayfair Daycare, Pickering	32.0	32.6	32.2	-1%	32.1	-2%	0%	23	142%	140%	140%
R 43	Muppets Children's Centre, Pickering	32.0	32.2	32.0	-1%	32.1	0%	0%	23	140%	139%	139%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	32.0	32.2	32.1	-1%	32.2	0%	1%	23	140%	139%	140%
R 45	Residential Receptor near Kingston Road, Pickering	32.0	32.9	32.2	-2%	32.0	-3%	0%	23	143%	140%	139%
R 46	Residential Receptor near RR29, Pickering	32.0	33.6	32.3	-4%	32.1	-5%	-1%	23	146%	140%	139%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	32.0	33.6	32.3	-4%	32.0	-5%	-1%	23	146%	140%	139%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	32.0	33.7	32.4	-4%	32.1	-5%	-1%	23	147%	141%	140%
R 49	Glengrove School, Pickering	32.0	32.3	32.1	-1%	32.1	-1%	0%	23	140%	139%	139%
R 50	VIVA Pickering Retirement Community, Pickering	32.0	32.8	32.2	-2%	32.2	-2%	0%	23	143%	140%	140%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	32.0	32.3	32.1	-1%	32.5	1%	1%	23	140%	139%	141%
R 52	Little Rose Home Daycare., Pickering	32.0	32.3	32.1	-1%	32.4	0%	1%	23	141%	139%	141%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	32.0	33.9	32.4	-4%	32.6	-4%	1%	23	147%	141%	142%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	32.0	35.5	32.7	-8%	32.5	-8%	0%	23	154%	142%	141%
R 55	Residential receptor near Brook Road, Pickering	32.0	34.5	32.5	-6%	32.1	-7%	-1%	23	150%	141%	140%
R 56	Alert Nursing & Home Care Svc, Pickering	32.0	32.3	32.1	-1%	32.3	0%	1%	23	140%	139%	140%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	32.0	32.6	32.1	-2%	32.4	-1%	1%	23	142%	140%	141%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	32.0	34.1	32.5	-5%	32.4	-5%	0%	23	148%	141%	141%
R 59	Residential Receptor near Church Street, Ajax	32.0	33.5	32.3	-4%	32.5	-3%	1%	23	146%	140%	141%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	32.0	32.8	32.2	-2%	32.4	-1%	1%	23	142%	140%	141%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	32.0	34.1	32.6	-5%	32.3	-5%	-1%	23	148%	142%	140%
R 62	Lincoln Avenue Public School, Ajax	32.0	32.3	32.1	-1%	32.2	-1%	0%	23	141%	140%	140%
R 63	Residential Receptor near Westney Road, Ajax	32.0	33.6	32.3	-4%	32.3	-4%	0%	23	146%	140%	140%
R 64	Residential Receptor near Durham Street, Ajax	32.0	33.6	32.3	-4%	32.1	-4%	-1%	23	146%	140%	140%
R 65	Residential Receptor near Durham street, Ajax	32.0	34.2	32.4	-5%	32.1	-6%	-1%	23	149%	141%	139%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	32.0	33.2	32.3	-3%	32.2	-3%	0%	23	144%	140%	140%
R 67	Westney Heights Medical Centre, Ajax	32.0	33.2	32.3	-3%	32.2	-3%	0%	23	144%	140%	140%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	32.0	32.6	32.1	-1%	32.7	0%	2%	23	142%	140%	142%
R 69	Residential Receptor near Lovgrove Lane, Ajax	32.0	33.4	32.3	-3%	32.7	-2%	1%	23	145%	140%	142%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	32.0	34.4	32.5	-5%	32.3	-6%	-1%	23	149%	141%	141%
R 71	Residential Receptor near Salem Road, Ajax	32.0	34.4	32.6	-5%	32.4	-6%	0%	23	150%	142%	141%
R 72	Residential Receptor Martinworth Lane, Ajax	32.0	32.4	32.1	-1%	32.3	0%	1%	23	141%	140%	140%
R 73	Residential Receptor near Lake Ridge Road, Whitby	32.0	32.3	32.1	-1%	32.2	0%	0%	23	141%	139%	140%
R 74	Residential Receptor Bluebell Crescent, Whitby	32.0	32.7	32.2	-2%	32.5	-1%	1%	23	142%	140%	141%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	32.0	32.3	3								

Table B-7 1-hr Maximum SO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			CAAQS (ug/m ³)	% of the CAAQS		
ID	Name	Concentration (ug/m ³)	1-hr Max Concentration (ug/m ³)	1-hr Max Concentration (ug/m ³)	% change from Existing Conditions	1-hr max Concentration ug/m ³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	4.7	7.16	6.04	-16%	6.46	-10%	7%	170	4%	4%	4%
R 2	Town Care Walk-in Clinic, Scarborough	4.7	6.58	6.43	-2%	6.06	-8%	-6%	170	4%	4%	4%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	4.7	6.51	6.20	-5%	6.00	-8%	-3%	170	4%	4%	4%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	4.7	6.71	5.36	-20%	6.16	-8%	15%	170	4%	3%	4%
R 5	Residential Receptor near Stanwell Drive, Scarborough	4.7	6.65	5.32	-20%	6.11	-8%	15%	170	4%	3%	4%
R 6	Residential Receptor near Stoneton Drive, Scarborough	4.7	6.37	4.91	-23%	5.93	-7%	21%	170	4%	3%	3%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	4.7	6.81	5.75	-16%	6.23	-8%	8%	170	4%	3%	4%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	4.7	6.51	5.83	-10%	6.03	-7%	3%	170	4%	3%	4%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	4.7	6.72	5.80	-14%	6.18	-8%	6%	170	4%	3%	4%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	4.7	6.79	5.27	-22%	6.22	-8%	18%	170	4%	3%	4%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	4.7	6.63	4.93	-26%	6.09	-8%	23%	170	4%	3%	4%
R 12	Residential apartment near Markham Road, Scarborough	4.7	6.42	4.87	-24%	5.97	-7%	23%	170	4%	3%	4%
R 13	Residential apartment near Markham Road, Scarborough	4.7	6.12	4.91	-20%	5.78	-6%	18%	170	4%	3%	3%
R 14	Residential apartment near Markham Road, Scarborough	4.7	6.42	4.83	-25%	5.95	-7%	23%	170	4%	3%	4%
R 15	Residential Receptor near Orton Park Road, Scarborough	4.7	6.11	5.35	-13%	5.83	-5%	9%	170	4%	3%	3%
R 16	Residential Receptor near Neilson Road, Scarborough	4.7	6.04	5.45	-10%	5.80	-4%	6%	170	4%	3%	3%
R 17	Residential Receptor near Morningside Avenue, Scarborough	4.7	6.11	5.68	-7%	5.86	-4%	3%	170	4%	3%	3%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	4.7	5.73	5.46	-5%	5.55	-3%	2%	170	3%	3%	3%
R 19	The Shoniker Clinic., The Shoniker Clinic	4.7	5.51	5.14	-7%	5.37	-3%	4%	170	3%	3%	3%
R 20	Centennial College-Morningside Campus 1	4.7	6.08	5.17	-15%	5.99	-1%	16%	170	4%	3%	4%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	4.7	6.03	5.63	-7%	6.32	5%	12%	170	4%	3%	4%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	4.7	5.75	5.23	-9%	5.47	-5%	5%	170	3%	3%	3%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	4.7	5.77	5.98	4%	5.55	-4%	-7%	170	3%	4%	3%
R 24	Residential Receptor at Scarbell Drive, Scarborough	4.7	5.83	5.33	-9%	5.58	-4%	5%	170	3%	3%	3%
R 25	Meadowvale Public School, Primary School, Scarborough	4.7	5.76	5.34	-7%	5.46	-5%	2%	170	3%	3%	3%
R 26	Meadowvale Day Care Centre, Scarborough	4.7	5.77	5.55	-4%	5.47	-5%	-1%	170	3%	3%	3%
R 27	Residential Receptor near Kingston Road, Scarborough	4.7	5.55	5.09	-8%	5.31	-4%	4%	170	3%	3%	3%
R 28	Rouge Valley Public School, Primary school	4.7	6.16	5.12	-17%	5.74	-7%	12%	170	4%	3%	3%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	4.7	6.11	4.83	-21%	5.71	-7%	18%	170	4%	3%	3%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	4.7	5.68	5.23	-8%	5.41	-5%	3%	170	3%	3%	3%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	4.7	5.77	5.60	-3%	5.44	-6%	-3%	170	3%	3%	3%
R 32	Altamont Care Community, Scarborough	4.7	5.46	6.35	16%	5.23	-4%	-18%	170	3%	4%	3%
R 33	EDUKids Child Care Centres Altona Road, Pickering	4.7	5.80	5.57	-4%	5.50	-5%	-1%	170	3%	3%	3%
R 34	The Gates Medical Centre, Pickering	4.7	5.67	5.76	2%	5.40	-5%	-6%	170	3%	3%	3%
R 35	Residential Receptor near Rougemount Drive, Pickering	4.7	5.50	5.22	-5%	5.29	-4%	1%	170	3%	3%	3%
R 36	Dunbarton High School - Pickering	4.7	5.77	4.79	-17%	5.52	-4%	15%	170	3%	3%	3%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	4.7	5.91	5.95	1%	5.68	-4%	-4%	170	3%	3%	3%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	4.7	6.77	5.44	-20%	6.17	-9%	13%	170	4%	3%	4%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	4.7	5.91	5.72	-3%	5.72	-3%	0%	170	3%	3%	3%
R 40	Durham Drug Store Walk-In Clinic, Pickering	4.7	5.54	5.45	-1%	5.36	-3%	-2%	170	3%	3%	3%
R 41	Residential Receptor near Sheppard Ave, Pickering	4.7	5.47	5.91	8%	5.31	-3%	-10%	170	3%	3%	3%
R 42	Bayfair Daycare, Pickering	4.7	5.30	5.84	10%	5.17	-2%	-11%	170	3%	3%	3%
R 43	Muppets Children's Centre, Pickering	4.7	5.36	5.38	0%	5.21	-3%	-3%	170	3%	3%	3%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	4.7	5.01	5.71	14%	4.93	-1%	-14%	170	3%	3%	3%
R 45	Residential Receptor near Kingston Road, Pickering	4.7	6.06	4.99	-18%	5.67	-7%	13%	170	4%	3%	3%
R 46	Residential Receptor near RR29, Pickering	4.7	6.09	5.09	-16%	5.70	-6%	12%	170	4%	3%	3%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	4.7	6.08	4.78	-21%	5.70	-6%	19%	170	4%	3%	3%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	4.7	5.60	5.42	-3%	5.31	-5%	-2%	170	3%	3%	3%
R 49	Glengrove School, Pickering	4.7	6.49	5.01	-23%	6.04	-7%	20%	170	4%	3%	4%
R 50	VIVA Pickering Retirement Community, Pickering	4.7	6.01	6.13	2%	5.68	-6%	-7%	170	4%	4%	3%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	4.7	7.17	5.98	-16%	6.57	-8%	10%	170	4%	4%	4%
R 52	Little Rose Home Daycare., Pickering	4.7	5.48	6.20	13%	5.29	-3%	-15%	170	3%	4%	3%
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	4.7	6.89	5.38	-22%	6.22	-10%	16%	170	4%	3%	4%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	4.7	7.12	5.43	-24%	6.54	-8%	21%	170	4%	3%	4%
R 55	Residential receptor near Brock Road, Pickering	4.7	6.91	5.27	-24%	6.20	-10%	18%	170	4%	3%	4%
R 56	Alert Nursing & Home Care Svc, Pickering	4.7	5.94	6.10	3%	5.65	-5%	-7%	170	3%	4%	3%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	4.7	6.46	5.96	-8%	6.09	-6%	2%	170	4%	4%	4%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	4.7	7.01	5.77	-18%	6.55	-7%	14%	170	4%	3%	4%
R 59	Residential Receptor near Church Street, Ajax	4.7	6.57	5.98	-9%	6.15	-6%	3%	170	4%	4%	4%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	4.7	6.41	6.26	-2%	6.02	-6%	-4%	170	4%	4%	4%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	4.7	6.64	5.50	-17%	6.47	-3%	18%	170	4%	3%	4%
R 62	Lincoln Avenue Public School, Ajax	4.7	6.39	6.01	-6%	5.96	-7%	-1%	170	4%	4%	4%
R 63	Residential Receptor near Westney Road, Ajax	4.7	6.86	6.15	-10%	6.26	-9%	2%	170	4%	4%	4%
R 64	Residential Receptor near Durham Street, Ajax	4.7	6.71	5.79	-14%	6.16	-8%	6%	170	4%	3%	4%
R 65	Residential Receptor near Durham street, Ajax	4.7	6.46	5.54	-14%	5.99	-7%	8%	170	4%	3%	4%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	4.7	6.29	5.87	-7%	5.89	-6%	0%	170	4%	3%	3%
R 67	Westney Heights Medical Centre, Ajax	4.7	6.29	5.48	-13%	5.90	-6%	8%	170	4%	3%	3%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	4.7	6.47	5.52	-15%	6.09	-6%	10%	170	4%	3%	4%
R 69	Residential Receptor near Lovgrove Lane, Ajax	4.7	6.09	6.05	-1%	5.69	-7%	-6%	170	4%	4%	3%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	4.7	6.55	5.72	-13%	5.92	-10%	4%	170	4%	3%	3%
R 71	Residential Receptor near Salem Road, Ajax	4.7	5.85	5.30	-9%	5.46	-7%	3%	170	3%	3%	3%
R 72	Residential Receptor Martinworth Lane, Ajax	4.7	5.73	5.64	-2%	5.77	1%	2%	170	3%	3%	3%
R 73	Residential Receptor near Lake Ridge Road, Whitby	4.7	6.10	5.63	-8%	5.79	-5%	3%	170	4%	3%	3%
R 74	Residential Receptor Bluebell Crescent, Whitby	4.7	6.11	5.99	-2%	5.73	-6%	-4%	170	4%	4%	3%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	4.7	5.71	6.41	12%	5.42	-5%	-15%	170	3%	4%	3%
R 76	Fairview Lodge, Nursing home, Whitby	4.7	6.28	6.05	-4%	5.81	-7%	-4%	170	4%	4%	3%
R 77	Kids & Company, Whitby	4.7	5.64	6.43	14%	5.39	-5%	-16%	170	3%	4%	3%
R 78	MyHealth Centre, Whitby	4.7	6.34	5.92	-7%	5.86	-8%	-1%	170	4%	3%	3%
R 79	East Whitby Clinic - Medical Clinic, Whitby	4.7	5.55	6.32	14%	5.32	-4%	-16%	170	3%	4%	3%
R 80	Durham Montessori School & Daycare, Whitby	4.7	5.65	6.02	7%	5.39	-5%	-10%	170	3%	4%	3%
R 81	Perry House Child Care Services, Whitby	4.7	5.97	6.12	2%	5.63	-6%	-8%	170	4%	4%	3%
R 82	Blyth Academy Whitby - Private school, Whitby	4.7	6.20	5.85	-6%	5.79	-7%	-1%	170	4%	3%	3%
R 83	Residential Receptor near Garden Street, Whitby	4.7	5.53	5.75	4%	5.27	-5%	-8%	170	3%	3%	3%
R 84	Residential Receptor near Garden Street, Whitby	4.7	5.69	5.69	0%	5.45	-4%	-4%	170	3%	3%	3%
R 85	Residential Receptor near Garden Street, Whitby	4.7	6.10	5.92	-3%	5.94	-3%	0%	170	4%	3%	3%
R 86	Residential Receptor near Garden Street, Whitby	4.7	5.49	5.46	-1%	5.32	-3%	-3%	170	3%	3%	3%
R 87	Trafalgar Castle School, Whitby	4.7	5.68	5.66	0%	5.42	-4%	-4%	170	3%	3%	3%
R 88	Residential Receptor near Dundas Street, Whitby	4.7	5.64	5.37	-5%	5.53	-2%	3%	170	3%	3%	3%
R 89	Residential Receptor near Lupin Drive, Whitby	4.7	5.38	5.26	-2%	5.15	-4%	-2%	170	3%	3%	3%
R 90	C.E. Broughton Public School - Public school, Whitby	4.7	5.13	5.22	2%	5.01	-2%	-4%	170	3%	3%	3%
R 91	Anderson CVI highs School, Whitby	4.7	5.16	5.53	7%	5.03	-3%	-9%	170	3%	3%	3%
R 92	St Theresa Catholic School, Whitby	4.7	5.28	5.15	-2%	5.11	-3%	-1%	170	3%	3%	3%
R 93	Fairy Glen Day Care Centre	4.7	5.27	5.17	-2%	5.11	-3%	-1%	170	3%	3%	3%
R 94	Learning Jungle Thickson, Whitby	4.7	5.31	4.99	-6%	5.13	-3%	3%	170	3%	3%	3%
R 95	Whitby Medical Arts Urgent Care, Whitby	4.7	5.04	5.10	1%	4.94	-2%	-3%	170	3%	3%	3%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	4.7	5.47	5.10	-7%	5.24	-4%	3%	170	3%	3%	3%
R 97	Residential Receptor near Kathleen Street, Whitby	4.7	5.52	5.82	5%	5.28	-4%	-9%	170	3%	3%	3%
R 98	Residential Receptor near Thornton Road, Oshawa	4.7	5.13	5.53	8%	5.00	-3%	-10%	170	3%	3%	3%
R 99	Residential Receptor near Thornton Road, Oshawa	4.7	5.43	5.29	-3%	5.17	-5%	-2%	170	3%	3%	3%
R 100	Residential Receptor near Thornton Road, Oshawa	4.7	5.32	5.25	-1%	5.11	-4%	-3%	170	3%	3%	3%
R 101	Residential Receptor near Stevenson Road, Oshawa	4.7	5.25	5.39	3%	5.12	-3%	-5%	170	3%	3%	3%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	4.7	4.95	5.67	15%	4.89	-1%	-14%	170	3%	3%	3%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	4.7	5.01	5.69	13%	4.92	-2%	-13%	170	3%	3%	3%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	4.7	4.83	5.26	9%	4.79	-1%	-9%	170	3%	3%	3%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	4.7	4.94	4.87	-1%	4.88	-1%	0%	170	3%	3%	3%
R 106	Mary Street Community School, Oshawa	4.7	4.82	5.90	23%	4.79	-1%	-19%	170	3%	3%	3%
R 107	Magic Pencils Learning Centre, Oshawa	4.7	4.89	6.08	24%	4.84	-1%	-20%	170	3%	4%	3%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	4.7	4.88	6.04	24%	4.83	-1%	-20%	170	3%	4%	3%

Table B-8 24-hour Maximum SO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC		
ID	Name	Concentration	24-hr Max Concentration	24-hr Max Concentration	% change from Existing Conditions	24-hr Max Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m³)	(µg/m³)	(µg/m³)		(µg/m³)						
R 1	Oasis Family Health Centre, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 2	Town Care Walk-in Clinic, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 5	Residential Receptor near Stanwell Drive, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 6	Residential Receptor near Stoneton Drive, Scarborough	4.7	4.9	4.9	-2%	4.9	-2%	0%	275	2%	2%	2%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 10	Maple Clinic- Virtual Care Clinic, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 12	Residential apartment near Markham Road, Scarborough	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 13	Residential apartment near Markham Road, Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 14	Residential apartment near Markham Road, Scarborough	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 15	Residential Receptor near Orton Park Road, Scarborough	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 16	Residential Receptor near Nelson Road, Scarborough	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 17	Residential Receptor near Morningside Avenue, Scarborough	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 19	The Shoniker Clinic., The Shoniker Clinic	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 20	Centennial College-Morningside Campus 1	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	4.7	4.8	4.9	1%	4.9	1%	0%	275	2%	2%	2%
R 22	N'sheemaeh'n daycare Center near Intersection of Military Trail & Ellesmere Road	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 24	Residential Receptor at Scarbell Drive, Scarborough	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 25	Meadowdale Public School, Primary School, Scarborough	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 26	Meadowdale Day Care Centre, Scarborough	4.7	4.8	4.7	0%	4.8	0%	0%	275	2%	2%	2%
R 27	Residential Receptor near Kingston Road, Scarborough	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 28	Rouge Valley Public School, Primary school	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	4.7	4.9	4.9	-1%	4.9	-1%	0%	275	2%	2%	2%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	4.7	4.9	4.9	-1%	4.9	-1%	0%	275	2%	2%	2%
R 32	Altamont Care Community, Scarborough	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 33	EDUKids Child Care Centres Altona Road, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 34	The Gates Medical Centre, Pickering	4.7	4.8	4.8	-1%	4.8	0%	0%	275	2%	2%	2%
R 35	Residential Receptor near Rougemount Drive, Pickering	4.7	4.8	4.8	0%	4.8	0%	0%	275	2%	2%	2%
R 36	Dunbarton High School - Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	4.7	5.0	4.9	-2%	4.9	-1%	0%	275	2%	2%	2%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	4.7	4.9	4.9	-2%	4.9	-1%	0%	275	2%	2%	2%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 40	Durham Drug Store Walk-In Clinic, Pickering	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 41	Residential Receptor near Sheppard Ave, Pickering	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 42	Bayfair Daycare, Pickering	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 43	Muppets Children's Centre, Pickering	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 45	Residential Receptor near Kingston Road, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 46	Residential Receptor near RR29, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 49	Glengrove School, Pickering	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 50	VIVA Pickering Retirement Community, Pickering	4.7	4.8	4.8	-1%	4.8	0%	0%	275	2%	2%	2%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 52	Little Rose Home Daycare., Pickering	4.7	4.7	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	4.7	5.0	4.9	-2%	4.9	-2%	1%	275	2%	2%	2%
R 55	Residential receptor near Brook Road, Pickering	4.7	4.9	4.8	-2%	4.9	-1%	1%	275	2%	2%	2%
R 56	Alert Nursing & Home Care Svc, Pickering	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 59	Residential Receptor near Church Street, Ajax	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	4.7	4.9	4.9	0%	4.9	0%	0%	275	2%	2%	2%
R 62	Lincoln Avenue Public School, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 63	Residential Receptor near Westney Road, Ajax	4.7	4.9	4.8	-2%	4.9	-1%	0%	275	2%	2%	2%
R 64	Residential Receptor near Durham Street, Ajax	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 65	Residential Receptor near Durham street, Ajax	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 67	Westney Heights Medical Centre, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 69	Residential Receptor near Lowgrove Lane, Ajax	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	4.7	4.9	4.8	-2%	4.8	-2%	0%	275	2%	2%	2%
R 71	Residential Receptor near Salem Road, Ajax	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 72	Residential Receptor Martinworth Lane, Ajax	4.7	4.8	4.7	0%	4.8	0%	1%	275	2%	2%	2%
R 73	Residential Receptor near Lake Ridge Road, Whitby	4.7	4.8	4.8	-1%	4.8	0%	0%	275	2%	2%	2%
R 74	Residential Receptor Bluebell Crescent, Whitby	4.7	4.8	4.8	-1%	4.8	0%	0%	275	2%	2%	2%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 76	Fairview Lodge, Nursing home, Whitby	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 77	Kids & Company, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 78	MyHealth Centre, Whitby	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 79	East Whitby Clinic - Medical Clinic, Whitby	4.7	4.8	4.8	-1%	4.8	0%	0%	275	2%	2%	2%
R 80	Durham Montessori School & Daycare, Whitby	4.7	4.8	4.7	0%	4.7	0%	0%	275	2%	2%	2%
R 81	Perry House Child Care Services, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 82	Blyth Academy Whitby - Private school, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 83	Residential Receptor near Garden Street, Whitby	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 84	Residential Receptor near Garden Street, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 85	Residential Receptor near Garden Street, Whitby	4.7	4.9	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 86	Residential Receptor near Garden Street, Whitby	4.7	4.8	4.8	-1%	4.8	-1%	0%	275	2%	2%	2%
R 87	Trafalgar Castle School, Whitby	4.7	4.8									

Table B-9 Average Annual SO2 Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			CAAQS (µg/m³)	% of the CAAQS		
ID	Name	Concentration (µg/m³)	Annual Average Concentration (µg/m³)	Annual Average Concentration (µg/m³)	% change from Existing Conditions	Annual Average Concentration µg/m³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 2	Town Care Walk-in Clinic, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarboro	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 5	Residential Receptor near Stanwell Drive, Scarborough	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 6	Residential Receptor near Stoneton Drive, Scarborough	2.6	2.6	2.6	2%	2.6	2%	0%	10	26%	26%	26%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	2.6	2.6	2.6	0%	2.6	1%	0%	10	26%	26%	26%
R 12	Residential apartment near Markham Road, Scarborough	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 13	Residential apartment near Markham Road, Scarborough	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 14	Residential apartment near Markham Road, Scarborough	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 15	Residential Receptor near Orton Park Road, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 16	Residential Receptor near Neilson Road, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 17	Residential Receptor near Morningside Avenue, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 19	The Shoniker Clinic., The Shoniker Clinic	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 20	Centennial College-Morningside Campus 1	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 24	Residential Receptor at Scarbell Drive, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 25	Meadowvale Public School, Primary School, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 26	Meadowvale Day Care Centre, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 27	Residential Receptor near Kingston Road, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 28	Rouge Valley Public School, Primary school	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	2.6	2.6	2.6	2%	2.6	1%	0%	10	26%	26%	26%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 32	Altamont Care Community, Scarborough	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 33	EDUKids Child Care Centres Altona Road, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 34	The Gates Medical Centre, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 35	Residential Receptor near Rougemount Drive, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 36	Dunbarton High School - Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.6	2.6	2.6	2%	2.7	2%	0%	10	26%	26%	27%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 40	Durham Drug Store Walk-In Clinic, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 41	Residential Receptor near Sheppard Ave, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 42	Bayfair Daycare, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 43	Muppets Children's Centre, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 45	Residential Receptor near Kingston Road, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 46	Residential Receptor near RR29, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 49	Glengrove School, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 50	VIVA Pickering Retirement Community, Pickering	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%
R 52	Little Rose Home Daycare., Pickering	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	2.6	2.7	2.6	-1%	2.6	-1%	0%	10	27%	26%	26%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	2.6	2.6	2.6	0%	2.7	0%	0%	10	26%	26%	27%
R 55	Residential receptor near Brock Road, Pickering	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 56	Alert Nursing & Home Care Svc, Pickering	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 59	Residential Receptor near Church Street, Ajax	2.6	2.7	2.6	-1%	2.6	-1%	0%	10	27%	26%	26%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 62	Lincoln Avenue Public School, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 63	Residential Receptor near Westney Road, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 64	Residential Receptor near Durham Street, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 65	Residential Receptor near Durham street, Ajax	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 67	Westney Heights Medical Centre, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%
R 69	Residential Receptor near Lovgrove Lane, Ajax	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 71	Residential Receptor near Salem Road, Ajax	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 72	Residential Receptor Martinworth Lane, Ajax	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 73	Residential Receptor near Lake Ridge Road, Whitby	2.6	2.6	2.6	-1%	2.6	0%	0%	10	26%	26%	26%
R 74	Residential Receptor Bluebell Crescent, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	2.6	2.7	2.6	-3%	2.6	-3%	0%	10	27%	26%	26%
R 76	Fairview Lodge, Nursing home, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 77	Kids & Company, Whitby	2.6	2.6	2.6	-2%	2.6	-2%	0%	10	26%	26%	26%
R 78	MyHealth Centre, Whitby	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 79	East Whitby Clinic - Medical Clinic, Whitby	2.6	2.6	2.6	-2%	2.6	-2%	0%	10	26%	26%	26%
R 80	Durham Montessori School & Daycare, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 81	Perry House Child Care Services, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 82	Blyth Academy Whitby - Private school, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 83	Residential Receptor near Garden Street, Whitby	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 84	Residential Receptor near Garden Street, Whitby	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 85	Residential Receptor near Garden Street, Whitby	2.6	2.7	2.6	-1%	2.6	-1%	0%	10	27%	26%	26%
R 86	Residential Receptor near Garden Street, Whitby	2.6	2.7	2.6	-1%	2.6	-1%	0%	10	27%	26%	26%
R 87	Trafalgar Castle School, Whitby	2.6	2.6	2.6	-2%	2.6	-2%	0%	10	26%	26%	26%
R 88	Residential Receptor near Dundas Street, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 89	Residential Receptor near Lupin Drive, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 90	C.E. Broughton Public School - Public school, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 91	Anderson CVI highs School, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 92	St Theresa Catholic School, Whitby	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 93	Fairy Glen Day Care Centre	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 94	Learning Jungle Thickson, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 95	Whitby Medical Arts Urgent Care, Whitby	2.6	2.6	2.6	-1%	2.6	-1%	0%	10	26%	26%	26%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	2.6	2.6	2.6	-2%	2.6	-1%	0%	10	26%	26%	26%
R 97	Residential Receptor near Kathleen Street, Whitby	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 98	Residential Receptor near Thornton Road, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 99	Residential Receptor near Thornton Road, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 100	Residential Receptor near Thornton Road, Oshawa	2.6	2.6	2.6	1%	2.6	1%	0%	10	26%	26%	26%
R 101	Residential Receptor near Stevenson Road, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	2.6	2.6	2.6	0%	2.6	0%	0%	10	26%	26%	26%
R 106	Mary Street Community School, Oshawa	2.6	2.7	2.6	-3%	2.6	-3%	0%	10	27%	26%	26%
R 107	Magic Pencils Learning Centre, Oshawa	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	2.6	2.7	2.6	-2%	2.6	-2%	0%	10	27%	26%	26%

Table B-10 1-hr Maximum CO Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC			
ID	Name	Concentration	1-hr Max Concentration	1-hr Max Concentration	% change from Existing Conditions	1-hr Max Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)	
		(µg/m³)	(µg/m³)	(µg/m³)		(µg/m³)							
R 1	Oasis Family Health Centre, Scarborough	458	1360	814	-40%	742	-45%	-9%	36,200	4%	2%	2%	
R 2	Town Care Walk-in Clinic, Scarborough	458	1176	745	-37%	812	-31%	9%	36,200	3%	2%	2%	
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	458	1154	736	-36%	780	-32%	6%	36,200	3%	2%	2%	
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	458	1227	766	-38%	608	-50%	-21%	36,200	3%	2%	2%	
R 5	Residential Receptor near Stanwell Drive, Scarborough	458	1208	758	-37%	599	-50%	-21%	36,200	3%	2%	2%	
R 6	Residential Receptor near Stoneton Drive, Scarborough	458	1102	719	-35%	506	-54%	-30%	36,200	3%	2%	1%	
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	458	1271	785	-38%	709	-44%	-10%	36,200	4%	2%	2%	
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	458	1155	742	-36%	741	-36%	0%	36,200	3%	2%	2%	
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	458	1238	774	-37%	688	-44%	-11%	36,200	3%	2%	2%	
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	458	1265	785	-38%	580	-54%	-26%	36,200	3%	2%	2%	
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	458	1200	763	-36%	508	-58%	-33%	36,200	3%	2%	1%	
R 12	Residential apartment near Markham Road, Scarborough	458	1120	730	-35%	495	-56%	-32%	36,200	3%	2%	1%	
R 13	Residential apartment near Markham Road, Scarborough	458	1004	688	-31%	504	-50%	-27%	36,200	3%	2%	1%	
R 14	Residential apartment near Markham Road, Scarborough	458	1120	735	-34%	486	-57%	-34%	36,200	3%	2%	1%	
R 15	Residential Receptor near Orton Park Road, Scarborough	458	1001	698	-30%	592	-41%	-15%	36,200	3%	2%	2%	
R 16	Residential Receptor near Neilson Road, Scarborough	458	971	688	-29%	614	-37%	-11%	36,200	3%	2%	2%	
R 17	Residential Receptor near Morningside Avenue, Scarborough	458	1001	704	-30%	663	-34%	-6%	36,200	3%	2%	2%	
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	458	850	632	-26%	629	-26%	-1%	36,200	2%	2%	2%	
R 19	The Shoniker Clinic., The Shoniker Clinic	458	765	592	-23%	558	-27%	-6%	36,200	2%	2%	2%	
R 20	Centennial College-Morningside Campus 1	458	985	711	-28%	566	-43%	-20%	36,200	3%	2%	2%	
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	458	968	754	-22%	670	-31%	-11%	36,200	3%	2%	2%	
R 22	N'sheemaehh daycare Center near Intersection of Military Trail & Ellesmere Road	458	858	622	-27%	582	-32%	-6%	36,200	2%	2%	2%	
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	458	864	628	-27%	751	-13%	20%	36,200	2%	2%	2%	
R 24	Residential Receptor at Scarbell Drive, Scarborough	458	887	633	-29%	592	-33%	-7%	36,200	2%	2%	2%	
R 25	Meadowvale Public School, Primary School, Scarborough	458	850	610	-28%	593	-30%	-3%	36,200	2%	2%	2%	
R 26	Meadowvale Day Care Centre, Scarborough	458	854	612	-28%	638	-25%	4%	36,200	2%	2%	2%	
R 27	Residential Receptor near Kingston Road, Scarborough	458	779	584	-25%	542	-30%	-7%	36,200	2%	2%	1%	
R 28	Rouge Valley Public School, Primary school	458	996	666	-33%	548	-45%	-18%	36,200	3%	2%	2%	
R 29	Scarborough Rouge Valley YMCA Child Care Centre	458	983	660	-33%	486	-51%	-26%	36,200	3%	2%	1%	
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	458	839	606	-28%	561	-33%	-7%	36,200	2%	2%	2%	
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	458	859	612	-29%	665	-23%	9%	36,200	2%	2%	2%	
R 32	Altamont Care Community, Scarborough	458	726	561	-23%	829	14%	48%	36,200	2%	2%	2%	
R 33	EDUKids Child Care Centres Altona Road, Pickering	458	881	624	-29%	659	-25%	6%	36,200	2%	2%	2%	
R 34	The Gates Medical Centre, Pickering	458	830	604	-27%	680	-18%	13%	36,200	2%	2%	2%	
R 35	Residential Receptor near Rougemount Drive, Pickering	458	765	578	-24%	570	-25%	-1%	36,200	2%	2%	2%	
R 36	Dunbarton High School - Pickering	458	870	623	-28%	477	-45%	-23%	36,200	2%	2%	1%	
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	458	905	632	-30%	711	-21%	12%	36,200	3%	2%	2%	
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	458	1212	735	-39%	612	-50%	-17%	36,200	3%	2%	2%	
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	458	852	598	-30%	668	-22%	12%	36,200	2%	2%	2%	
R 40	Durham Drug Store Walk-in Clinic, Pickering	458	780	594	-24%	631	-19%	6%	36,200	2%	2%	2%	
R 41	Residential Receptor near Sheppard Ave, Pickering	458	753	582	-23%	733	-3%	26%	36,200	2%	2%	2%	
R 42	Bayfair Daycare, Pickering	458	689	554	-20%	723	5%	31%	36,200	2%	2%	2%	
R 43	Muppets Children's Centre, Pickering	458	712	561	-21%	602	-15%	7%	36,200	2%	2%	2%	
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	458	574	502	-13%	669	16%	33%	36,200	2%	1%	2%	
R 45	Residential Receptor near Kingston Road, Pickering	458	982	662	-33%	522	-47%	-21%	36,200	3%	2%	1%	
R 46	Residential Receptor near RR29, Pickering	458	990	663	-33%	543	-45%	-18%	36,200	3%	2%	1%	
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	458	987	662	-33%	476	-52%	-28%	36,200	3%	2%	1%	
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	458	805	589	-27%	591	-27%	0%	36,200	2%	2%	2%	
R 49	Glen Grove School, Pickering	458	1128	715	-37%	526	-53%	-26%	36,200	3%	2%	1%	
R 50	VIVA Pickering Retirement Community, Pickering	458	957	653	-32%	765	-20%	17%	36,200	3%	2%	2%	
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	458	1360	799	-41%	732	-46%	-8%	36,200	4%	2%	2%	
R 52	Little Rose Home Daycare., Pickering	458	754	572	-24%	783	4%	37%	36,200	2%	2%	2%	
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	458	1245	728	-42%	609	-51%	-16%	36,200	3%	2%	2%	
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	458	1387	825	-40%	616	-56%	-25%	36,200	4%	2%	2%	
R 55	Residential receptor near Brock Road, Pickering	458	1248	718	-42%	587	-53%	-18%	36,200	3%	2%	2%	
R 56	Alert Nursing & Home Care Svc, Pickering	458	931	645	-31%	750	-19%	16%	36,200	3%	2%	2%	
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	458	1129	735	-35%	723	-36%	-2%	36,200	3%	2%	2%	
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	458	1346	833	-38%	682	-49%	-18%	36,200	4%	2%	2%	
R 59	Residential Receptor near Church Street, Ajax	458	1170	753	-36%	719	-39%	-4%	36,200	3%	2%	2%	
R 60	Residential Receptor near Macey CT and Church Street, Ajax	458	1109	722	-35%	757	-32%	5%	36,200	3%	2%	2%	
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	458	1198	811	-32%	632	-47%	-22%	36,200	3%	2%	2%	
R 62	Lincoln Avenue Public School, Ajax	458	1101	705	-36%	737	-33%	5%	36,200	3%	2%	2%	
R 63	Residential Receptor near Westney Road, Ajax	458	1275	766	-40%	769	-40%	0%	36,200	4%	2%	2%	
R 64	Residential Receptor near Durham Street, Ajax	458	1220	745	-39%	681	-44%	-9%	36,200	3%	2%	2%	
R 65	Residential Receptor near Durham street, Ajax	458	1122	707	-37%	629	-44%	-11%	36,200	3%	2%	2%	
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	458	1053	683	-35%	694	-34%	2%	36,200	3%	2%	2%	
R 67	Westney Heights Medical Centre, Ajax	458	1053	683	-35%	617	-41%	-10%	36,200	3%	2%	2%	
R 68	Kingston Medical Clinic & Pharmacy, Ajax	458	1093	692	-37%	654	-40%	-5%	36,200	3%	2%	2%	
R 69	Residential Receptor near Lovngrove Lane, Ajax	458	921	625	-32%	752	-18%	20%	36,200	3%	2%	2%	
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	458	1057	658	-38%	633	-40%	-4%	36,200	3%	2%	2%	
R 71	Residential Receptor near Salem Road, Ajax	458	886	610	-31%	589	-34%	-3%	36,200	2%	2%	2%	
R 72	Residential Receptor Martinworth Lane, Ajax	458	846	608	-28%	671	-21%	10%	36,200	2%	2%	2%	
R 73	Residential Receptor near Lake Ridge Road, Whitby	458	992	669	-33%	665	-33%	-1%	36,200	3%	2%	2%	
R 74	Residential Receptor Bluebell Crescent, Whitby	458	1006	667	-34%	762	-24%	14%	36,200	3%	2%	2%	
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	458	845	600	-29%	842	0%	40%	36,200	2%	2%	2%	
R 76	Fairview Lodge, Nursing home, Whitby	458	1064	680	-36%	765	-28%	13%	36,200	3%	2%	2%	
R 77	Kids & Company, Whitby	458	811	588	-28%	851	5%	45%	36,200	2%	2%	2%	
R 78	MyHealth Centre, Whitby	458	1083	687	-37%	739	-32%	7%	36,200	3%	2%	2%	
R 79	East Whitby Clinic - Medical Clinic, Whitby	458	778	576	-26%	832	7%	45%	36,200	2%	2%	2%	
R 80	Durham Montessori School & Daycare, Whitby	458	813	588	-28%	767	-6%	30%	36,200	2%	2%	2%	
R 81	Perry House Child Care Services, Whitby	458	929	631	-32%	789	-15%	25%	36,200	3%	2%	2%	
R 82	Blyth Academy Whitby - Private school, Whitby	458	1018	683	-35%	731	-28%	10%	36,200	3%	2%	2%	
R 83	Residential Receptor near Garden Street, Whitby	458	786	579	-26%	708	-10%	22%	36,200	2%	2%	2%	
R 84	Residential Receptor near Garden Street, Whitby	458	847	602	-29%	662	-22%	10%	36,200	2%	2%	2%	
R 85	Residential Receptor near Garden Street, Whitby	458	960	644	-33%	678	-29%	5%	36,200	3%	2%	2%	
R 86	Residential Receptor near Garden Street, Whitby	458	743	562	-24%	617	-17%	10%	36,200	2%	2%	2%	
R 87	Trafalgar Castle School, Whitby	458	798	581	-27%	683	-14%	18%	36,200	2%	2%	2%	
R 88	Residential Receptor near Dundas Street, Whitby	458	828	595	-28%	609	-26%	2%	36,200	2%	2%	2%	
R 89	Residential Receptor near Lupin Drive, Whitby	458	707	548	-23%	577	-18%	5%	36,200	2%	2%	2%	
R 90	C.E. Broughton Public School - Public school, Whitby	458	629	522	-17%	575	-9%	10%	36,200	2%	1%	2%	
R 91	Anderson CVI highs School, Whitby	458	641	526	-18%	602	-6%	15%	36,200	2%	1%	2%	
R 92	St Theresa Catholic School, Whitby	458	686	543	-21%	546	-20%	1%	36,200	2%	1%	2%	
R 93	Fairy Glen Day Care Centre	458	684	542	-21%	562	-18%	4%	36,200	2%	1%	2%	
R 94	Learning Jungle Thickson, Whitby	458	700	548	-22%	522	-26%	-5%	36,200	2%	2%	1%	
R 95	Whitby Medical Arts Urgent Care, Whitby	458	591	508	-14%	542	-8%	7%	36,200	2%	1%	1%	
R 96	Sunnycrest Nursing Homes Ltd., Whitby	458	760	570	-25%	547	-28%	-4%	36,200	2%	2%	2%	
R 97	Residential Receptor near Kathleen Street, Whitby	458	783	579	-26%	691	-12%	19%	36,200	2%	2%	2%	
R 98	Residential Receptor near Thornton Road, Oshawa	458	628	522	-17%	636	1%	22%	36,200	2%	1%	2%	
R 99	Residential Receptor near Thornton Road, Oshawa	458	744	563	-24%	583	-22%	4%	36,200	2%	2%	2%	
R 100	Residential Receptor near Thornton Road, Oshawa	458	701	547	-22%	582	-17%	6%	36,200	2%	2%	2%	
R 101	Residential Receptor near Stevenson Road, Oshawa	458	674	544	-19%	686	2%	26%	36,200	2%	2%	2%	
R 102	Methodone Oshawa - New Direction Addiction Clinic, Oshawa	458	556	494	-11%	687	23%	39%	36,200	2%	1%	2%	
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	458	578	503	-13%	668	16%	33%	36,200	2%	1%	2%	
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	458	507	477	-6%	579	14%	21%	36,200	1%	1%	2%	
R 105	Residential Receptor near Fernhill Blvd., Oshawa	458	555	495	-11%	495	-11%	0%	36,200	2%	1%	1%	
R 106	Mary Street Community School, Oshawa	458	502	475	-5%	716	43%	51%	36,200	1%	1%	2%	
R 107	Magic Pencils Learning Centre, Oshawa	458	529	485	-8%	756	43%	56%	36,200	1%	1%	2%	
R 108	Oshawa Clinic - Medical Clinic, Oshawa	458	528	485	-8%	75							

Table B-11 8-hr Maximum CO Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
ID	Name	Concentration (µg/m ³)	8-hr Max Concentration (µg/m ³)	8-hr Max Concentration (µg/m ³)	% change from Existing Conditions	8-hr Max Concentration µg/m ³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	458	687	549	-20%	549	-20%	0%	15,700	4%	3%	3%
R 2	Town Care Walk-In Clinic, Scarborough	458	698	549	-21%	549	-21%	0%	15,700	4%	3%	3%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarboro	458	698	549	-21%	549	-21%	0%	15,700	4%	3%	3%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	458	641	527	-18%	527	-18%	0%	15,700	4%	3%	3%
R 5	Residential Receptor near Stanwell Drive, Scarborough	458	652	538	-18%	538	-18%	0%	15,700	4%	3%	3%
R 6	Residential Receptor near Stoneton Drive, Scarborough	458	709	549	-23%	549	-23%	0%	15,700	5%	3%	3%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	458	652	538	-18%	538	-18%	0%	15,700	4%	3%	3%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	458	618	527	-15%	527	-15%	0%	15,700	4%	3%	3%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	458	641	538	-16%	527	-18%	-2%	15,700	4%	3%	3%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	458	709	561	-21%	561	-21%	0%	15,700	5%	4%	4%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	458	641	538	-16%	527	-18%	-2%	15,700	4%	3%	3%
R 12	Residential apartment near Markham Road, Scarborough	458	675	549	-19%	549	-19%	0%	15,700	4%	3%	3%
R 13	Residential apartment near Markham Road, Scarborough	458	618	527	-15%	527	-15%	0%	15,700	4%	3%	3%
R 14	Residential apartment near Markham Road, Scarborough	458	618	527	-15%	515	-17%	-2%	15,700	4%	3%	3%
R 15	Residential Receptor near Orton Park Road, Scarborough	458	572	515	-10%	504	-12%	-2%	15,700	4%	3%	3%
R 16	Residential Receptor near Neilson Road, Scarborough	458	607	527	-13%	527	-13%	0%	15,700	4%	3%	3%
R 17	Residential Receptor near Morningside Avenue, Scarborough	458	572	515	-10%	515	-10%	0%	15,700	4%	3%	3%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 19	The Shonker Clinic., The Shonker Clinic	458	515	481	-7%	481	-7%	0%	15,700	3%	3%	3%
R 20	Centennial College-Morningside Campus 1	458	607	538	-11%	538	-11%	0%	15,700	4%	3%	3%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	458	618	561	-9%	561	-9%	0%	15,700	4%	4%	4%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 24	Residential Receptor at Scarbell Drive, Scarborough	458	584	504	-14%	504	-14%	0%	15,700	4%	3%	3%
R 25	Meadowvale Public School, Primary School, Scarborough	458	561	492	-12%	492	-12%	0%	15,700	4%	3%	3%
R 26	Meadowvale Day Care Centre, Scarborough	458	561	492	-12%	492	-12%	0%	15,700	4%	3%	3%
R 27	Residential Receptor near Kingston Road, Scarborough	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 28	Rouge Valley Public School, Primary school	458	618	527	-15%	527	-15%	0%	15,700	4%	3%	3%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	458	618	515	-17%	515	-17%	0%	15,700	4%	3%	3%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	458	629	527	-16%	527	-16%	0%	15,700	4%	3%	3%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	458	618	515	-17%	515	-17%	0%	15,700	4%	3%	3%
R 32	Altamont Care Community, Scarborough	458	527	481	-9%	481	-9%	0%	15,700	3%	3%	3%
R 33	EDUKids Child Care Centres Altona Road, Pickering	458	584	504	-14%	504	-14%	0%	15,700	4%	3%	3%
R 34	The Gates Medical Centre, Pickering	458	572	504	-12%	504	-12%	0%	15,700	4%	3%	3%
R 35	Residential Receptor near Rougemount Drive, Pickering	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 36	Dunbarton High School - Pickering	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	458	652	527	-19%	538	-18%	2%	15,700	4%	3%	3%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	458	778	572	-26%	584	-25%	2%	15,700	5%	4%	4%
R 39	Stripe Mail near Whites road and RR 38 Kingston Road, Pickering	458	549	492	-10%	504	-8%	2%	15,700	3%	3%	3%
R 40	Durham Drug Store Walk-In Clinic, Pickering	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 41	Residential Receptor near Sheppard Ave, Pickering	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 42	Bayfair Daycare, Pickering	458	504	481	-5%	481	-5%	0%	15,700	3%	3%	3%
R 43	Muppets Children's Centre, Pickering	458	515	481	-7%	481	-7%	0%	15,700	3%	3%	3%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	458	492	469	-5%	469	-5%	0%	15,700	3%	3%	3%
R 45	Residential Receptor near Kingston Road, Pickering	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 46	Residential Receptor near RR29, Pickering	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 49	Glengrove School, Pickering	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 50	VIVA Pickering Retirement Community, Pickering	458	584	504	-14%	504	-14%	0%	15,700	4%	3%	3%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	458	698	549	-21%	561	-20%	2%	15,700	4%	3%	4%
R 52	Little Rose Home Daycare., Pickering	458	515	481	-7%	481	-7%	0%	15,700	3%	3%	3%
R 53	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	458	652	527	-19%	527	-19%	0%	15,700	4%	3%	3%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	458	755	572	-24%	584	-23%	2%	15,700	5%	4%	4%
R 55	Residential receptor near Brock Road, Pickering	458	664	527	-21%	538	-19%	2%	15,700	4%	3%	3%
R 56	Alert Nursing & Home Care Svc, Pickering	458	549	492	-10%	504	-8%	2%	15,700	3%	3%	3%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	458	618	527	-15%	527	-15%	0%	15,700	4%	3%	3%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	458	687	561	-18%	561	-18%	0%	15,700	4%	4%	4%
R 59	Residential Receptor near Church Street, Ajax	458	698	561	-20%	561	-20%	0%	15,700	4%	4%	4%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	458	618	527	-15%	527	-15%	0%	15,700	4%	3%	3%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	458	687	572	-17%	584	-15%	2%	15,700	4%	4%	4%
R 62	Lincoln Avenue Public School, Ajax	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 63	Residential Receptor near Westney Road, Ajax	458	744	561	-25%	572	-23%	2%	15,700	5%	4%	4%
R 64	Residential Receptor near Durham Street, Ajax	458	664	538	-19%	538	-19%	0%	15,700	4%	3%	3%
R 65	Residential Receptor near Durham street, Ajax	458	698	549	-21%	561	-20%	2%	15,700	4%	3%	4%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	458	595	504	-15%	515	-13%	2%	15,700	4%	3%	3%
R 67	Westney Heights Medical Centre, Ajax	458	664	538	-19%	538	-19%	0%	15,700	4%	3%	3%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	458	618	515	-17%	527	-15%	2%	15,700	4%	3%	3%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	458	584	504	-14%	515	-12%	2%	15,700	4%	3%	3%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	458	629	515	-18%	527	-16%	2%	15,700	4%	3%	3%
R 71	Residential Receptor near Salem Road, Ajax	458	687	538	-22%	549	-20%	2%	15,700	4%	3%	3%
R 72	Residential Receptor Martinworth Lane, Ajax	458	549	492	-10%	515	-6%	5%	15,700	3%	3%	3%
R 73	Residential Receptor near Lake Ridge Road, Whitby	458	618	527	-15%	538	-13%	2%	15,700	4%	3%	3%
R 74	Residential Receptor Bluebell Crescent, Whitby	458	595	504	-15%	504	-15%	0%	15,700	4%	3%	3%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	458	595	504	-15%	515	-13%	2%	15,700	4%	3%	3%
R 76	Fairview Lodge, Nursing home, Whitby	458	664	538	-19%	538	-19%	0%	15,700	4%	3%	3%
R 77	Kids & Company, Whitby	458	595	504	-15%	504	-15%	0%	15,700	4%	3%	3%
R 78	MyHealth Centre, Whitby	458	675	538	-20%	538	-20%	0%	15,700	4%	3%	3%
R 79	East Whitby Clinic - Medical Clinic, Whitby	458	584	504	-14%	504	-14%	0%	15,700	4%	3%	3%
R 80	Durham Montessori School & Daycare, Whitby	458	538	481	-11%	492	-8%	2%	15,700	3%	3%	3%
R 81	Perry House Child Care Services, Whitby	458	629	515	-18%	527	-16%	2%	15,700	4%	3%	3%
R 82	Blyth Academy Whitby - Private school, Whitby	458	595	504	-15%	515	-13%	2%	15,700	4%	3%	3%
R 83	Residential Receptor near Garden Street, Whitby	458	595	504	-15%	504	-15%	0%	15,700	4%	3%	3%
R 84	Residential Receptor near Garden Street, Whitby	458	629	515	-18%	527	-16%	2%	15,700	4%	3%	3%
R 85	Residential Receptor near Garden Street, Whitby	458	595	504	-15%	515	-13%	2%	15,700	4%	3%	3%
R 86	Residential Receptor near Garden Street, Whitby	458	595	504	-15%	504	-15%	0%	15,700	4%	3%	3%
R 87	Trafalgar Castle School, Whitby	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 88	Residential Receptor near Dundas Street, Whitby	458	549	492	-10%	492	-10%	0%	15,700	3%	3%	3%
R 89	Residential Receptor near Lupin Drive, Whitby	458	527	481	-9%	481	-9%	0%	15,700	3%	3%	3%
R 90	C.E. Broughton Public School - Public school, Whitby	458	527	481	-9%	481	-9%	0%	15,700	3%	3%	3%
R 91	Anderson CVI Highs School, Whitby	458	527	481	-9%	481	-9%	0%	15,700	3%	3%	3%
R 92	St Theresa Catholic School, Whitby	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 93	Fairy Glen Day Care Centre	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 94	Learning Jungle Thickson, Whitby	458	515	481	-7%	481	-7%	0%	15,700	3%	3%	3%
R 95	Whitby Medical Arts Urgent Care, Whitby	458	492	469	-5%	469	-5%	0%	15,700	3%	3%	3%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	458	527	481	-9%	481	-9%	0%	15,700	3%	3%	3%
R 97	Residential Receptor near Kathleen Street, Whitby	458	572	504	-12%	504	-12%	0%	15,700	4%	3%	3%
R 98	Residential Receptor near Thornton Road, Oshawa	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 99	Residential Receptor near Thornton Road, Oshawa	458	584	504	-14%	504	-14%	0%	15,700	4%	3%	3%
R 100	Residential Receptor near Thornton Road, Oshawa	458	607	515	-15%	515	-15%	0%	15,700	4%	3%	3%
R 101	Residential Receptor near Stevenson Road, Oshawa	458	538	492	-8%	492	-8%	0%	15,700	3%	3%	3%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	458	481	469	-2%	469	-2%	0%	15,700	3%	3%	3%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	458	492	469	-5%	469	-5%	0%	15,700	3%	3%	3%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	458	481	469	-2%	469	-2%	0%	15,700	3%	3%	3%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	458	504	469	-7%	492	-2%	5%	15,700	3%	3%	3%
R 106	Mary Street Community School, Oshawa	458	481	469	-2%	469	-2%	0%	15,700	3%	3%	3%
R 107	Magic Pencils Learning Centre, Oshawa	458	481	469	-2%	469	-2%	0%	15,700	3%	3%	3%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	458	481	469	-2%	469	-2%	0%	15,700	3%	3%	3%

Table B-12 24-hr Maximum Acetaldehyde Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC		
ID	Name	Concentration (µg/m³)	24-Hr Max Concentration (µg/m³)	24-Hr Max Concentration (µg/m³)	% change from Existing Conditions	24-Hr Max Concentration µg/m³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2017)	Future No-Build (2031)	Future Build (2031)
R 1	Oasis Family Health Centre, Scarborough	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 2	Town Care Walk-in Clinic, Scarborough	2.00	2.04	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarboro	2.00	2.04	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 5	Residential Receptor near Stanwell Drive, Scarborough	2.00	2.04	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 6	Residential Receptor near Stoneton Drive, Scarborough	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	2.00	2.04	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	2.00	2.04	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 12	Residential apartment near Markham Road, Scarborough	2.00	2.04	2.01	-2%	2.01	-1%	0%	500	0%	0%	0%
R 13	Residential apartment near Markham Road, Scarborough	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 14	Residential apartment near Markham Road, Scarborough	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 15	Residential Receptor near Orton Park Road, Scarborough	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 16	Residential Receptor near Neilson Road, Scarborough	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 17	Residential Receptor near Morningside Avenue, Scarborough	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 19	The Shoniker Clinic., The Shoniker Clinic	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 20	Centennial College-Morningside Campus 1	2.00	2.02	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 22	N'sheemaehn daycare Center near Intersection of Military Trail & Ellesmere Road	2.00	2.01	2.00	-1%	2.00	0%	0%	500	0%	0%	0%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 24	Residential Receptor at Scarbell Drive, Scarborough	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 25	Meadowvale Public School, Primary School, Scarborough	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 26	Meadowvale Day Care Centre, Scarborough	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 27	Residential Receptor near Kingston Road, Scarborough	2.00	2.01	2.00	-1%	2.00	0%	0%	500	0%	0%	0%
R 28	Rouge Valley Public School, Primary school	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 32	Allamont Care Community, Scarborough	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 33	EDUKids Child Care Centres Altona Road, Pickering	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 34	The Gates Medical Centre, Pickering	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 35	Residential Receptor near Rougemount Drive, Pickering	2.00	2.01	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 36	Dunbarton High School - Pickering	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.00	2.06	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 40	Durham Drug Store Walk-In Clinic, Pickering	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 41	Residential Receptor near Sheppard Ave, Pickering	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 42	Bayfair Daycare, Pickering	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 43	Muppets Children's Centre, Pickering	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 45	Residential Receptor near Kingston Road, Pickering	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 46	Residential Receptor near RR29, Pickering	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 49	Glengrove School, Pickering	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 50	VIVA Pickering Retirement Community, Pickering	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	2.00	2.04	2.01	-2%	2.01	-1%	0%	500	0%	0%	0%
R 52	Little Rose Home Daycare., Pickering	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 53	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	2.00	2.04	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	2.00	2.07	2.01	-3%	2.01	-3%	0%	500	0%	0%	0%
R 55	Residential receptor near Brock Road, Pickering	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 56	Alert Nursing & Home Care Svc, Pickering	2.00	2.01	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 59	Residential Receptor near Church Street, Ajax	2.00	2.04	2.01	-2%	2.01	-1%	0%	500	0%	0%	0%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 62	Lincoln Avenue Public School, Ajax	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 63	Residential Receptor near Westney Road, Ajax	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 64	Residential Receptor near Durham Street, Ajax	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 65	Residential Receptor near Durham street, Ajax	2.00	2.04	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 67	Westney Heights Medical Centre, Ajax	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	2.00	2.05	2.01	-2%	2.01	-2%	0%	500	0%	0%	0%
R 71	Residential Receptor near Salem Road, Ajax	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 72	Residential Receptor Martnworth Lane, Ajax	2.00	2.01	2.00	-1%	2.01	0%	0%	500	0%	0%	0%
R 73	Residential Receptor near Lake Ridge Road, Whitby	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 74	Residential Receptor Bluebell Crescent, Whitby	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 76	Fairview Lodge, Nursing home, Whitby	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 77	Kids & Company, Whitby	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 78	MyHealth Centre, Whitby	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 79	East Whitby Clinic - Medical Clinic, Whitby	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 80	Durham Montessori School & Daycare, Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 81	Perry House Child Care Services, Whitby	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 82	Blyth Academy Whitby - Private school, Whitby	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 83	Residential Receptor near Garden Street, Whitby	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 84	Residential Receptor near Garden Street, Whitby	2.00	2.03	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 85	Residential Receptor near Garden Street, Whitby	2.00	2.04	2.01	-1%	2.01	-1%	0%	500	0%	0%	0%
R 86	Residential Receptor near Garden Street, Whitby	2.00	2.03	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 87	Trafalgar Castle School, Whitby	2.00	2.01	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 88	Residential Receptor near Dundas Street, Whitby	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 89	Residential Receptor near Lupin Drive, Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 90	C.E. Broughton Public School - Public school, Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 91	Anderson CVI highs School, Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 92	St Theresa Catholic School, Whitby	2.00	2.01	2.00	-1%	2.00	0%	0%	500	0%	0%	0%
R 93	Fairy Glen Day Care Centre	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 94	Learning Jungle Thickson, Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 95	Whitby Medical Arts Urgent Care, Whitby	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 97	Residential Receptor near Kathleen Street, Whitby	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 98	Residential Receptor near Thornton Road, Oshawa	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 99	Residential Receptor near Thornton Road, Oshawa	2.00	2.02	2.00	-1%	2.00	-1%	0%	500	0%	0%	0%
R 100	Residential Receptor near Thornton Road, Oshawa	2.00	2.02	2.00	-1%	2.01	-1%	0%	500	0%	0%	0%
R 101	Residential Receptor near Stevenson Road, Oshawa	2.00	2.01	2.00	-1%	2.00	0%	0%	500	0%	0%	0%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	2.00	2.01	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 106	Mary Street Community School, Oshawa	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 107	Magic Pencils Learning Centre, Oshawa	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	2.00	2.00	2.00	0%	2.00	0%	0%	500	0%	0%	0%

Table B-13 1-hr Maximum Acrolein Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background ⁽¹⁾	Existing Conditions	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
		Concentration (µg/m ³)	1-hr Max Concentration (µg/m ³)	1-hr Max Concentration (µg/m ³)	% change from Existing Conditions	1-hr Max Concentration µg/m ³	% change from Existing Conditions	% change from No- Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	0.07	0.107	0.084	-21%	0.087	-18%	3%	4.5	2%	2%	2%
R 2	Town Care Walk-in Clinic, Scarborough	0.07	0.098	0.081	-17%	0.084	-14%	3%	4.5	2%	2%	2%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.07	0.096	0.081	-16%	0.083	-13%	3%	4.5	2%	2%	2%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.07	0.099	0.082	-18%	0.085	-15%	4%	4.5	2%	2%	2%
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.07	0.103	0.082	-20%	0.084	-18%	2%	4.5	2%	2%	2%
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.07	0.096	0.080	-16%	0.083	-14%	3%	4.5	2%	2%	2%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.07	0.101	0.082	-19%	0.086	-15%	4%	4.5	2%	2%	2%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	0.07	0.096	0.081	-16%	0.084	-13%	4%	4.5	2%	2%	2%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.07	0.099	0.082	-18%	0.086	-14%	5%	4.5	2%	2%	2%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.07	0.100	0.082	-18%	0.086	-14%	5%	4.5	2%	2%	2%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.07	0.098	0.081	-17%	0.085	-13%	4%	4.5	2%	2%	2%
R 12	Residential apartment near Markham Road, Scarborough	0.07	0.095	0.080	-15%	0.083	-12%	4%	4.5	2%	2%	2%
R 13	Residential apartment near Markham Road, Scarborough	0.07	0.091	0.079	-13%	0.082	-10%	4%	4.5	2%	2%	2%
R 14	Residential apartment near Markham Road, Scarborough	0.07	0.095	0.081	-15%	0.084	-12%	4%	4.5	2%	2%	2%
R 15	Residential Receptor near Orton Park Road, Scarborough	0.07	0.091	0.080	-13%	0.083	-9%	4%	4.5	2%	2%	2%
R 16	Residential Receptor near Nelson Road, Scarborough	0.07	0.090	0.080	-12%	0.083	-9%	4%	4.5	2%	2%	2%
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.07	0.091	0.080	-12%	0.083	-9%	4%	4.5	2%	2%	2%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	0.07	0.086	0.078	-10%	0.080	-7%	3%	4.5	2%	2%	2%
R 19	The Shoniker Clinic., The Shoniker Clinic	0.07	0.083	0.077	-8%	0.078	-6%	2%	4.5	2%	2%	2%
R 20	Centennial College-Morningside Campus 1	0.07	0.093	0.081	-11%	0.085	-7%	4%	4.5	2%	2%	2%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.07	0.090	0.084	-7%	0.088	-3%	4%	4.5	2%	2%	2%
R 22	N'sheemaethn daycare Center near Intersection of Military Trail & Ellesmere Road	0.07	0.086	0.078	-9%	0.079	-8%	1%	4.5	2%	2%	2%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.07	0.087	0.077	-11%	0.081	-7%	4%	4.5	2%	2%	2%
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.07	0.088	0.078	-11%	0.081	-8%	4%	4.5	2%	2%	2%
R 25	Meadowvale Public School, Primary School, Scarborough	0.07	0.087	0.077	-11%	0.079	-10%	2%	4.5	2%	2%	2%
R 26	Meadowvale Day Care Centre, Scarborough	0.07	0.087	0.077	-11%	0.079	-10%	2%	4.5	2%	2%	2%
R 27	Residential Receptor near Kingston Road, Scarborough	0.07	0.084	0.076	-9%	0.078	-7%	3%	4.5	2%	2%	2%
R 28	Rouge Valley Public School, Primary school	0.07	0.093	0.079	-15%	0.081	-13%	2%	4.5	2%	2%	2%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.07	0.092	0.079	-14%	0.080	-12%	2%	4.5	2%	2%	2%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.07	0.087	0.078	-10%	0.078	-10%	0%	4.5	2%	2%	2%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.07	0.089	0.078	-12%	0.078	-12%	0%	4.5	2%	2%	2%
R 32	Altamont Care Community, Scarborough	0.07	0.083	0.077	-8%	0.077	-8%	0%	4.5	2%	2%	2%
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.07	0.087	0.077	-11%	0.079	-9%	3%	4.5	2%	2%	2%
R 34	The Gates Medical Centre, Pickering	0.07	0.085	0.076	-10%	0.078	-8%	3%	4.5	2%	2%	2%
R 35	Residential Receptor near Rougemount Drive, Pickering	0.07	0.083	0.076	-9%	0.077	-6%	2%	4.5	2%	2%	2%
R 36	Dunbarton High School - Pickering	0.07	0.086	0.077	-11%	0.079	-8%	3%	4.5	2%	2%	2%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.07	0.089	0.078	-13%	0.081	-9%	4%	4.5	2%	2%	2%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.07	0.101	0.082	-19%	0.083	-18%	2%	4.5	2%	2%	2%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.07	0.091	0.081	-11%	0.081	-11%	0%	4.5	2%	2%	2%
R 40	Durham Drug Store Walk-In Clinic, Pickering	0.07	0.083	0.076	-9%	0.078	-6%	3%	4.5	2%	2%	2%
R 41	Residential Receptor near Sheppard Ave, Pickering	0.07	0.082	0.076	-8%	0.078	-5%	3%	4.5	2%	2%	2%
R 42	Bayfair Daycare, Pickering	0.07	0.080	0.075	-6%	0.076	-4%	2%	4.5	2%	2%	2%
R 43	Muppets Children's Centre, Pickering	0.07	0.081	0.075	-7%	0.077	-5%	2%	4.5	2%	2%	2%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.07	0.078	0.074	-3%	0.074	-3%	0%	4.5	2%	2%	2%
R 45	Residential Receptor near Kingston Road, Pickering	0.07	0.090	0.079	-12%	0.080	-11%	2%	4.5	2%	2%	2%
R 46	Residential Receptor near RR29, Pickering	0.07	0.091	0.079	-13%	0.081	-11%	2%	4.5	2%	2%	2%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.07	0.091	0.078	-14%	0.081	-11%	3%	4.5	2%	2%	2%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.07	0.084	0.079	-6%	0.077	-8%	-2%	4.5	2%	2%	2%
R 49	Glengrove School, Pickering	0.07	0.097	0.080	-17%	0.084	-14%	4%	4.5	2%	2%	2%
R 50	VIVA Pickering Retirement Community, Pickering	0.07	0.090	0.078	-13%	0.081	-10%	4%	4.5	2%	2%	2%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.07	0.107	0.084	-22%	0.088	-18%	5%	4.5	2%	2%	2%
R 52	Little Rose Home Daycare., Pickering	0.07	0.083	0.076	-9%	0.077	-6%	2%	4.5	2%	2%	2%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	0.07	0.104	0.081	-22%	0.085	-18%	5%	4.5	2%	2%	2%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	0.07	0.105	0.083	-20%	0.088	-16%	5%	4.5	2%	2%	2%
R 55	Residential receptor near Brook Road, Pickering	0.07	0.104	0.084	-20%	0.085	-19%	1%	4.5	2%	2%	2%
R 56	Alert Nursing & Home Care Svc., Pickering	0.07	0.089	0.078	-12%	0.080	-9%	3%	4.5	2%	2%	2%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.07	0.096	0.080	-16%	0.084	-12%	5%	4.5	2%	2%	2%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.07	0.103	0.083	-19%	0.088	-15%	6%	4.5	2%	2%	2%
R 59	Residential Receptor near Church Street, Ajax	0.07	0.097	0.081	-17%	0.085	-13%	5%	4.5	2%	2%	2%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.07	0.095	0.080	-16%	0.084	-12%	4%	4.5	2%	2%	2%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.07	0.098	0.083	-16%	0.088	-11%	6%	4.5	2%	2%	2%
R 62	Lincoln Avenue Public School, Ajax	0.07	0.095	0.080	-16%	0.083	-12%	4%	4.5	2%	2%	2%
R 63	Residential Receptor near Westney Road, Ajax	0.07	0.101	0.081	-19%	0.086	-15%	5%	4.5	2%	2%	2%
R 64	Residential Receptor near Durham Street, Ajax	0.07	0.099	0.081	-18%	0.085	-14%	5%	4.5	2%	2%	2%
R 65	Residential Receptor near Durham street, Ajax	0.07	0.096	0.080	-17%	0.083	-13%	4%	4.5	2%	2%	2%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.07	0.093	0.079	-15%	0.083	-11%	5%	4.5	2%	2%	2%
R 67	Westney Heights Medical Centre, Ajax	0.07	0.094	0.079	-15%	0.083	-11%	5%	4.5	2%	2%	2%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.07	0.097	0.080	-17%	0.085	-13%	6%	4.5	2%	2%	2%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	0.07	0.093	0.080	-14%	0.081	-14%	0%	4.5	2%	2%	2%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.07	0.101	0.083	-18%	0.083	-18%	0%	4.5	2%	2%	2%
R 71	Residential Receptor near Salem Road, Ajax	0.07	0.088	0.078	-11%	0.079	-10%	1%	4.5	2%	2%	2%
R 72	Residential Receptor Martinworth Lane, Ajax	0.07	0.086	0.077	-10%	0.082	-4%	8%	4.5	2%	2%	2%
R 73	Residential Receptor near Lake Rdge Road, Whitby	0.07	0.091	0.078	-13%	0.082	-9%	5%	4.5	2%	2%	2%
R 74	Residential Receptor Bluebell Crescent, Whitby	0.07	0.092	0.079	-14%	0.082	-11%	4%	4.5	2%	2%	2%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.07	0.086	0.077	-11%	0.079	-8%	3%	4.5	2%	2%	2%
R 76	Fairview Lodge, Nursing home, Whitby	0.07	0.094	0.079	-16%	0.083	-12%	4%	4.5	2%	2%	2%
R 77	Kids & Company, Whitby	0.07	0.085	0.076	-11%	0.079	-8%	3%	4.5	2%	2%	2%
R 78	MyHealth Centre, Whitby	0.07	0.095	0.080	-16%	0.083	-12%	5%	4.5	2%	2%	2%
R 79	East Whitby Clinic - Medical Clinic, Whitby	0.07	0.084	0.076	-10%	0.078	-7%	3%	4.5	2%	2%	2%
R 80	Durham Montessori School & Daycare, Whitby	0.07	0.086	0.077	-11%	0.079	-8%	3%	4.5	2%	2%	2%
R 81	Perry House Child Care Services, Whitby	0.07	0.090	0.078	-14%	0.081	-10%	4%	4.5	2%	2%	2%
R 82	Blyth Academy Whitby - Private school, Whitby	0.07	0.094	0.079	-15%	0.083	-12%	4%	4.5	2%	2%	2%
R 83	Residential Receptor near Garden Street, Whitby	0.07	0.083	0.076	-9%	0.078	-7%	2%	4.5	2%	2%	2%
R 84	Residential Receptor near Garden Street, Whitby	0.07	0.086	0.076	-11%	0.079	-7%	4%	4.5	2%	2%	2%
R 85	Residential Receptor near Garden Street, Whitby	0.07	0.093	0.079	-15%	0.084	-9%	6%	4.5	2%	2%	2%
R 86	Residential Receptor near Garden Street, Whitby	0.07	0.084	0.076	-9%	0.077	-8%	2%	4.5	2%	2%	2%
R 87	Trafalgar Castle School, Whitby	0.07	0.087	0.078	-10%	0.078	-10%	0%	4.5	2%	2%	2%
R 88	Residential Receptor near Dundas Street, Whitby	0.07	0.085	0.080	-6%	0.080	-6%	0%	4.5	2%	2%	2%
R 89	Residential Receptor near Lupin Drive, Whitby	0.07	0.082	0.076	-7%	0.076	-7%	0%	4.5	2%	2%	2%
R 90	C.E. Broughton Public School - Public school, Whitby	0.07	0.078	0.074	-5%	0.075	-3%	2%	4.5	2%	2%	2%
R 91	Anderson CVI highs School, Whitby	0.07	0.078	0.076	-3%	0.075	-4%	-1%	4.5	2%	2%	2%
R 92	St Theresa Catholic School, Whitby	0.07	0.080	0.075	-7%	0.076	-4%	2%	4.5	2%	2%	2%
R 93	Fairy Glen Day Care Centre	0.07	0.080	0.075	-7%	0.076	-4%	2%	4.5	2%	2%	2%
R 94	Learning Jungle Thickson, Whitby	0.07	0.080	0.075	-7%	0.077	-5%	2%	4.5	2%	2%	2%
R 95	Whitby Medical Arts Urgent Care, Whitby	0.07	0.077	0.074	-3%	0.075	-3%	0%	4.5	2%	2%	2%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	0.07	0.082	0.075	-8%	0.078	-6%	3%	4.5	2%	2%	2%
R 97	Residential Receptor near Kathleen Street, Whitby	0.07	0.083	0.077	-8%	0.078	-6%	2%	4.5	2%	2%	2%
R 98	Residential Receptor near Thornton Road, Oshawa	0.07	0.078	0.074	-5%	0.075	-4%	2%	4.5	2%	2%	2%
R 99	Residential Receptor near Thornton Road, Oshawa	0.07	0.082	0.075	-8%	0.075	-8%	0%	4.5	2%	2%	2%
R 100	Residential Receptor near Thornton Road, Oshawa	0.07	0.080	0.075	-6%	0.077	-4%	2%	4.5	2%	2%	2%
R 101	Residential Receptor near Stevenson Road, Oshawa	0.07	0.080	0.075	-6%	0.077	-3%	3%	4.5	2%	2%	2%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	0.07	0.075	0.073	-3%	0.075	-1%	2%	4.5	2%	2%	2%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	0.07	0.076	0.074	-3%	0.075	-2%	1%	4.5	2%	2%	2%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	0.07	0.074	0.075	2%	0.073	-1%	-3%	4.5	2%	2%	2%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	0.07	0.075	0.077	2%	0.074	-1%	-3%	4.5	2%	2%	2%
R 106	Mary Street Community School, Oshawa	0.07	0.074	0.074	1%	0.073	-1%	-2%	4.5	2%	2%	2%
R 107</												

Table B-14 24-hr Maximum Acrolein Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
ID	Name	Concentration	1-hr Max Concentration	1-hr Max Concentration	% change from Existing Conditions	1-hr Max Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m ³)	(µg/m ³)	(µg/m ³)		(µg/m ³)						
R 1	Oasis Family Health Centre, Scarborough	0.07	0.0743	0.0728	-2%	0.0730	-2%	0%	0.4	19%	18%	18%
R 2	Town Care Walk-in Clinic, Scarborough	0.07	0.0743	0.0728	-2%	0.0730	-2%	0%	0.4	19%	18%	18%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.07	0.0748	0.0730	-2%	0.0732	-2%	0%	0.4	19%	18%	18%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.07	0.0739	0.0732	-1%	0.0726	-2%	-1%	0.4	18%	18%	18%
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.07	0.0746	0.0729	-2%	0.0725	-3%	-1%	0.4	19%	18%	18%
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.07	0.0755	0.0732	-3%	0.0723	-4%	-1%	0.4	19%	18%	18%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.07	0.0746	0.0729	-2%	0.0730	-2%	0%	0.4	19%	18%	18%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	0.07	0.0734	0.0725	-1%	0.0728	-1%	0%	0.4	18%	18%	18%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.07	0.0737	0.0726	-1%	0.0731	-1%	1%	0.4	18%	18%	18%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.07	0.0743	0.0728	-2%	0.0726	-2%	0%	0.4	19%	18%	18%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.07	0.0738	0.0727	-2%	0.0722	-2%	-1%	0.4	18%	18%	18%
R 12	Residential apartment near Markham Road, Scarborough	0.07	0.0745	0.0732	-2%	0.0722	-3%	-1%	0.4	19%	18%	18%
R 13	Residential apartment near Markham Road, Scarborough	0.07	0.0736	0.0726	-1%	0.0724	-2%	0%	0.4	18%	18%	18%
R 14	Residential apartment near Markham Road, Scarborough	0.07	0.0738	0.0727	-1%	0.0724	-2%	0%	0.4	18%	18%	18%
R 15	Residential Receptor near Orton Park Road, Scarborough	0.07	0.0730	0.0724	-1%	0.0723	-1%	0%	0.4	18%	18%	18%
R 16	Residential Receptor near Neilson Road, Scarborough	0.07	0.0734	0.0726	-1%	0.0725	-1%	0%	0.4	18%	18%	18%
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.07	0.0731	0.0733	0%	0.0727	0%	-1%	0.4	18%	18%	18%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	0.07	0.0727	0.0724	0%	0.0726	0%	0%	0.4	18%	18%	18%
R 19	The Shoniker Clinic., The Shoniker Clinic	0.07	0.0725	0.0723	0%	0.0723	0%	0%	0.4	18%	18%	18%
R 20	Centennial College-Morningside Campus 1	0.07	0.0735	0.0727	-1%	0.0723	-2%	-1%	0.4	18%	18%	18%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.07	0.0737	0.0734	0%	0.0727	-1%	-1%	0.4	18%	18%	18%
R 22	N'sheemaeh'n daycare Center near Intersection of Military Trail & Ellesmere Road	0.07	0.0729	0.0731	0%	0.0722	-1%	-1%	0.4	18%	18%	18%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.07	0.0728	0.0726	0%	0.0727	0%	0%	0.4	18%	18%	18%
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.07	0.0732	0.0725	-1%	0.0727	-1%	0%	0.4	18%	18%	18%
R 25	Meadowvale Public School, Primary School, Scarborough	0.07	0.0730	0.0723	-1%	0.0724	-1%	0%	0.4	18%	18%	18%
R 26	Meadowvale Day Care Centre, Scarborough	0.07	0.0730	0.0724	-1%	0.0729	0%	1%	0.4	18%	18%	18%
R 27	Residential Receptor near Kingston Road, Scarborough	0.07	0.0729	0.0725	-1%	0.0724	-1%	0%	0.4	18%	18%	18%
R 28	Rouge Valley Public School, Primary school	0.07	0.0738	0.0726	-2%	0.0723	-2%	-1%	0.4	18%	18%	18%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.07	0.0737	0.0726	-2%	0.0722	-2%	-1%	0.4	18%	18%	18%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.07	0.0755	0.0733	-3%	0.0725	-4%	-1%	0.4	19%	18%	18%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.07	0.0755	0.0733	-3%	0.0726	-4%	-1%	0.4	19%	18%	18%
R 32	Allamont Care Community, Scarborough	0.07	0.0727	0.0725	0%	0.0732	1%	1%	0.4	18%	18%	18%
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.07	0.0733	0.0724	-1%	0.0724	-1%	0%	0.4	18%	18%	18%
R 34	The Gates Medical Centre, Pickering	0.07	0.0731	0.0724	-1%	0.0732	0%	1%	0.4	18%	18%	18%
R 35	Residential Receptor near Rougemount Drive, Pickering	0.07	0.0730	0.0724	-1%	0.0723	-1%	0%	0.4	18%	18%	18%
R 36	Dunbarton High School - Pickering	0.07	0.0736	0.0726	-1%	0.0724	-2%	0%	0.4	18%	18%	18%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.07	0.0759	0.0735	-3%	0.0731	-4%	-1%	0.4	19%	18%	18%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.07	0.0756	0.0734	-3%	0.0725	-4%	-1%	0.4	19%	18%	18%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.07	0.0739	0.0728	-1%	0.0728	-2%	0%	0.4	18%	18%	18%
R 40	Durham Drug Store Walk-In Clinic, Pickering	0.07	0.0728	0.0725	0%	0.0728	0%	0%	0.4	18%	18%	18%
R 41	Residential Receptor near Sheppard Ave, Pickering	0.07	0.0727	0.0724	0%	0.0727	0%	0%	0.4	18%	18%	18%
R 42	Bayfair Daycare, Pickering	0.07	0.0725	0.0723	0%	0.0727	0%	0%	0.4	18%	18%	18%
R 43	Muppets Children's Centre, Pickering	0.07	0.0725	0.0722	0%	0.0727	0%	1%	0.4	18%	18%	18%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.07	0.0723	0.0723	0%	0.0727	1%	1%	0.4	18%	18%	18%
R 45	Residential Receptor near Kingston Road, Pickering	0.07	0.0736	0.0727	-1%	0.0723	-2%	0%	0.4	18%	18%	18%
R 46	Residential Receptor near RR29, Pickering	0.07	0.0737	0.0726	-2%	0.0724	-2%	0%	0.4	18%	18%	18%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.07	0.0737	0.0726	-2%	0.0727	-1%	0%	0.4	18%	18%	18%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.07	0.0733	0.0736	0%	0.0728	-1%	-1%	0.4	18%	18%	18%
R 49	Glengrove School, Pickering	0.07	0.0734	0.0725	-1%	0.0731	0%	1%	0.4	18%	18%	18%
R 50	VIVA Pickering Retirement Community, Pickering	0.07	0.0732	0.0724	-1%	0.0732	0%	1%	0.4	18%	18%	18%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.07	0.0746	0.0728	-2%	0.0732	-2%	0%	0.4	19%	18%	18%
R 52	Little Rose Home Daycare., Pickering	0.07	0.0725	0.0722	0%	0.0729	1%	1%	0.4	18%	18%	18%
R 53	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	0.07	0.0747	0.0730	-2%	0.0733	-2%	0%	0.4	19%	18%	18%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	0.07	0.0765	0.0738	-4%	0.0734	-4%	-1%	0.4	19%	18%	18%
R 55	Residential receptor near Brock Road, Pickering	0.07	0.0752	0.0734	-2%	0.0724	-4%	-1%	0.4	19%	18%	18%
R 56	Alert Nursing & Home Care Svc, Pickering	0.07	0.0729	0.0723	-1%	0.0729	0%	1%	0.4	18%	18%	18%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.07	0.0735	0.0725	-1%	0.0732	0%	1%	0.4	18%	18%	18%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.07	0.0742	0.0728	-2%	0.0728	-2%	0%	0.4	19%	18%	18%
R 59	Residential Receptor near Church Street, Ajax	0.07	0.0745	0.0729	-2%	0.0727	-2%	0%	0.4	19%	18%	18%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.07	0.0735	0.0725	-1%	0.0738	0%	2%	0.4	18%	18%	18%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.07	0.0741	0.0730	-1%	0.0726	-2%	-1%	0.4	19%	18%	18%
R 62	Lincoln Avenue Public School, Ajax	0.07	0.0734	0.0724	-1%	0.0727	-1%	0%	0.4	18%	18%	18%
R 63	Residential Receptor near Westney Road, Ajax	0.07	0.0749	0.0730	-3%	0.0728	-3%	0%	0.4	19%	18%	18%
R 64	Residential Receptor near Durham Street, Ajax	0.07	0.0742	0.0727	-2%	0.0728	-2%	0%	0.4	19%	18%	18%
R 65	Residential Receptor near Durham street, Ajax	0.07	0.0747	0.0729	-2%	0.0724	-3%	-1%	0.4	19%	18%	18%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.07	0.0733	0.0729	-1%	0.0733	0%	1%	0.4	18%	18%	18%
R 67	Westney Heights Medical Centre, Ajax	0.07	0.0739	0.0726	-2%	0.0731	-1%	1%	0.4	18%	18%	18%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.07	0.0736	0.0725	-1%	0.0735	0%	1%	0.4	18%	18%	18%
R 69	Residential Receptor near Lovngrove Lane, Ajax	0.07	0.0737	0.0728	-1%	0.0734	0%	1%	0.4	18%	18%	18%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.07	0.0754	0.0731	-3%	0.0728	-3%	0%	0.4	19%	18%	18%
R 71	Residential Receptor near Salem Road, Ajax	0.07	0.0746	0.0729	-2%	0.0736	-1%	1%	0.4	19%	18%	18%
R 72	Residential Receptor Martinworth Lane, Ajax	0.07	0.0728	0.0725	-1%	0.0727	0%	0%	0.4	18%	18%	18%
R 73	Residential Receptor near Lake Ridge Road, Whitby	0.07	0.0735	0.0726	-1%	0.0727	-1%	0%	0.4	18%	18%	18%
R 74	Residential Receptor Bluebell Crescent, Whitby	0.07	0.0732	0.0729	0%	0.0732	0%	0%	0.4	18%	18%	18%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.07	0.0733	0.0724	-1%	0.0738	1%	2%	0.4	18%	18%	18%
R 76	Fairview Lodge, Nursing home, Whitby	0.07	0.0741	0.0732	-1%	0.0732	-1%	0%	0.4	19%	18%	18%
R 77	Kids & Company, Whitby	0.07	0.0733	0.0724	-1%	0.0731	0%	1%	0.4	18%	18%	18%
R 78	MyHealth Centre, Whitby	0.07	0.0742	0.0727	-2%	0.0727	-2%	0%	0.4	19%	18%	18%
R 79	East Whitby Clinic - Medical Clinic, Whitby	0.07	0.0732	0.0724	-1%	0.0735	0%	2%	0.4	18%	18%	18%
R 80	Durham Montessori School & Daycare, Whitby	0.07	0.0727	0.0722	-1%	0.0729	0%	1%	0.4	18%	18%	18%
R 81	Perry House Child Care Services, Whitby	0.07	0.0738	0.0726	-2%	0.0733	-1%	1%	0.4	18%	18%	18%
R 82	Blyth Academy Whitby - Private school, Whitby	0.07	0.0734	0.0725	-1%	0.0732	0%	1%	0.4	18%	18%	18%
R 83	Residential Receptor near Garden Street, Whitby	0.07	0.0742	0.0727	-2%	0.0729	-2%	0%	0.4	19%	18%	18%
R 84	Residential Receptor near Garden Street, Whitby	0.07	0.0742	0.0729	-2%	0.0728	-2%	0%	0.4	19%	18%	18%
R 85	Residential Receptor near Garden Street, Whitby	0.07	0.0744	0.0729	-2%	0.0731	-2%	0%	0.4	19%	18%	18%
R 86	Residential Receptor near Garden Street, Whitby	0.07	0.0738	0.0727	-2%	0.0729	-1%	0%	0.4	18%	18%	18%
R 87	Trafalgar Castle School, Whitby	0.07	0.0731	0.0728	0%	0.0731	0%	0%	0.4	18%	18%	18%
R 88	Residential Receptor near Dundas Street, Whitby	0.07	0.0733	0.0728	-1%	0.0730	0%	0%	0.4	18%	18%	18%
R 89	Residential Receptor near Lupin Drive, Whitby	0.07	0.0727	0.0725	0%	0.0728	0%	0%	0.4	18%	18%	18%
R 90	C.E. Broughton Public School - Public school, Whitby	0.07	0.0726	0.0722	-1%	0.0727	0%	1%	0.4	18%	18%	18%
R 91	Anderson CVI highs School, Whitby	0.07	0.0727	0.0731	1%	0.0728	0%	-1%	0.4	18%	18%	18%
R 92	St Theresa Catholic School, Whitby	0.07	0.0728	0.0724	0%	0.0725	0%	0%	0.4	18%	18%	18%
R 93	Fairy Glen Day Care Centre	0.07	0.0728	0.0723	-1%	0.0725	0%	0%	0.4	18%	18%	18%
R 94	Learning Jungle Thickson, Whitby	0.07	0.0725	0.0722	0%	0.0725	0%	0%	0.4	18%	18%	18%
R 95	Whitby Medical Arts Urgent Care, Whitby	0.07	0.0723	0.0722	0%	0.0726	0%	1%	0.4	18%	18%	18%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	0.07	0.0726	0.0723	-1%	0.0727	0%	1%	0.4	18%	18%	18%
R 97	Residential Receptor near Kathleen Street, Whitby	0.07	0.0731	0.0732	0%	0.0726	-1%	-1%	0.4	18%	18%	18%
R 98	Residential Receptor near Thornton Road, Oshawa	0.07	0.0731	0.0724	-1%	0.0728	0%	1%	0.4	18%	18%	18%
R 99	Residential Receptor near Thornton Road, Oshawa	0.07	0.0732	0.0725	-1%	0.0725	-1%	0%	0.4	18%	18%	18%
R 100	Residential Receptor near Thornton Road, Oshawa	0.07	0.0736	0.0727	-1%	0.0725	-2%	0%	0.4	18%	18%	18%
R 101	Residential Receptor near Stevenson Road, Oshawa	0.07	0.0729	0.0724	-1%	0.0727	0%	0%	0.4	18%	18%	18%
R 102	Methad											

Table B-15 24-hr Maximum Benzene Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC		
ID	Name	Concentration	24-hr Max Concentration	24-hr Max Concentration	% change from Existing Conditions	24-hr Max Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
		(µg/m³)	(µg/m³)	(µg/m³)		µg/m³						
R 1	Oasis Family Health Centre, Scarborough	0.82	0.90	0.85	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 2	Town Care Walk-in Clinic, Scarborough	0.82	0.90	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.82	0.92	0.86	-6%	0.86	-6%	0%	2.3	40%	38%	37%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	0.82	0.89	0.85	-4%	0.85	-4%	0%	2.3	39%	37%	37%
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.82	0.91	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.82	0.94	0.87	-7%	0.87	-7%	0%	2.3	41%	38%	38%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.82	0.91	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.82	0.90	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.82	0.89	0.85	-4%	0.85	-4%	0%	2.3	39%	37%	37%
R 12	Residential apartment near Markham Road, Scarborough	0.82	0.91	0.86	-6%	0.86	-6%	0%	2.3	40%	37%	37%
R 13	Residential apartment near Markham Road, Scarbrouh	0.82	0.88	0.84	-4%	0.84	-4%	0%	2.3	38%	37%	37%
R 14	Residential apartment near Markham Road, Scarborough	0.82	0.88	0.84	-4%	0.84	-4%	0%	2.3	38%	37%	37%
R 15	Residential Receptor near Orton Park Road, Scarborough	0.82	0.86	0.84	-2%	0.84	-2%	0%	2.3	37%	36%	36%
R 16	Residential Receptor near Nelson Road, Scarborough	0.82	0.87	0.85	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.82	0.86	0.84	-2%	0.84	-2%	0%	2.3	37%	37%	37%
R 18	Seven Oaks - Nursing home, 9 Nelson Road, Scarborough	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	37%	36%	36%
R 19	The Shoniker Clinic., The Shoniker Clinic	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 20	Centennial College-Morningside Campus 1	0.82	0.87	0.85	-2%	0.85	-2%	0%	2.3	38%	37%	37%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.82	0.88	0.88	0%	0.88	0%	0%	2.3	38%	38%	38%
R 22	N'shemahm daycare Center near Intersection of Military Trail & Ellesmere Road	0.82	0.85	0.84	-2%	0.84	-1%	1%	2.3	37%	36%	37%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.82	0.85	0.84	-1%	0.84	-1%	0%	2.3	37%	36%	36%
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 25	Meadowvale Public School, Primary School, Scarborough	0.82	0.85	0.84	-2%	0.84	-2%	0%	2.3	37%	36%	36%
R 26	Meadowvale Day Care Centre, Scarborough	0.82	0.85	0.84	-2%	0.84	-2%	0%	2.3	37%	36%	36%
R 27	Residential Receptor near Kingston Road, Scarborough	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 28	Rouge Valley Public School, Primary school	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.82	0.94	0.87	-7%	0.87	-7%	0%	2.3	41%	38%	38%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.82	0.93	0.88	-6%	0.87	-6%	0%	2.3	41%	38%	38%
R 32	Altamont Care Community, Scarborough	0.82	0.84	0.83	-2%	0.83	-2%	1%	2.3	37%	36%	36%
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	37%
R 34	The Gates Medical Centre, Pickering	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	37%	36%	36%
R 35	Residential Receptor near Rougemount Drive, Pickering	0.82	0.85	0.83	-2%	0.84	-2%	0%	2.3	37%	36%	36%
R 36	Dunbarton High School - Pickering	0.82	0.88	0.84	-4%	0.85	-3%	0%	2.3	38%	37%	37%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.82	0.95	0.88	-8%	0.88	-7%	1%	2.3	41%	38%	38%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.82	0.94	0.87	-8%	0.88	-7%	1%	2.3	41%	38%	38%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.82	0.88	0.84	-5%	0.85	-4%	1%	2.3	38%	37%	37%
R 40	Durham Drug Store Walk-In Clinic, Pickering	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 41	Residential Receptor near Sheppard Ave, Pickering	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 42	Bayfair Daycare, Pickering	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 43	Muppets Children's Centre, Pickering	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.82	0.83	0.82	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 45	Residential Receptor near Kingston Road, Pickering	0.82	0.88	0.84	-4%	0.84	-4%	0%	2.3	38%	37%	37%
R 46	Residential Receptor near RR29, Pickering	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 49	Glengrove School, Pickering	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 50	VIVA Pickering Retirement Community, Pickering	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	37%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.82	0.91	0.86	-6%	0.86	-5%	1%	2.3	39%	37%	37%
R 52	Little Rose Home Daycare., Pickering	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	0.82	0.91	0.86	-6%	0.87	-5%	1%	2.3	40%	37%	38%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	0.82	0.97	0.88	-10%	0.89	-8%	2%	2.3	42%	38%	39%
R 55	Residential receptor near Brock Road, Pickering	0.82	0.93	0.86	-7%	0.87	-6%	1%	2.3	40%	38%	38%
R 56	Alert Nursing & Home Care Svc, Pickering	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.82	0.90	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 59	Residential Receptor near Church Street, Ajax	0.82	0.91	0.86	-5%	0.86	-5%	0%	2.3	39%	37%	37%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.82	0.89	0.87	-3%	0.87	-3%	0%	2.3	39%	38%	38%
R 62	Lincoln Avenue Public School, Ajax	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 63	Residential Receptor near Westney Road, Ajax	0.82	0.92	0.86	-7%	0.87	-6%	0%	2.3	40%	38%	38%
R 64	Residential Receptor near Durham Street, Ajax	0.82	0.90	0.85	-5%	0.85	-5%	0%	2.3	39%	37%	37%
R 65	Residential Receptor near Durham street, Ajax	0.82	0.92	0.86	-6%	0.86	-6%	0%	2.3	40%	37%	37%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	37%
R 67	Westney Heights Medical Centre, Ajax	0.82	0.89	0.85	-4%	0.85	-4%	0%	2.3	39%	37%	37%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.82	0.88	0.84	-4%	0.85	-3%	0%	2.3	38%	37%	37%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	0.82	0.88	0.84	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.82	0.93	0.86	-7%	0.86	-7%	0%	2.3	41%	38%	38%
R 71	Residential Receptor near Salem Road, Ajax	0.82	0.91	0.85	-7%	0.86	-6%	1%	2.3	40%	37%	37%
R 72	Residential Receptor Martinworth Lane, Ajax	0.82	0.85	0.83	-2%	0.84	-1%	1%	2.3	37%	36%	37%
R 73	Residential Receptor near Lake Ridge Road, Whitby	0.82	0.87	0.84	-3%	0.85	-3%	0%	2.3	38%	37%	37%
R 74	Residential Receptor Bluebell Crescent, Whitby	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	36%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 76	Fairview Lodge, Nursing home, Whitby	0.82	0.90	0.85	-5%	0.85	-5%	0%	2.3	39%	37%	37%
R 77	Kids & Company, Whitby	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	37%
R 78	MyHealth Centre, Whitby	0.82	0.90	0.85	-5%	0.85	-5%	0%	2.3	39%	37%	37%
R 79	East Whitby Clinic - Medical Clinic, Whitby	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	38%	36%	37%
R 80	Durham Montessori School & Daycare, Whitby	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 81	Perry House Child Care Services, Whitby	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 82	Blyth Academy Whitby - Private school, Whitby	0.82	0.87	0.84	-3%	0.84	-3%	0%	2.3	38%	37%	37%
R 83	Residential Receptor near Garden Street, Whitby	0.82	0.89	0.85	-5%	0.85	-5%	0%	2.3	39%	37%	37%
R 84	Residential Receptor near Garden Street, Whitby	0.82	0.89	0.85	-5%	0.86	-4%	1%	2.3	39%	37%	37%
R 85	Residential Receptor near Garden Street, Whitby	0.82	0.90	0.85	-5%	0.86	-5%	1%	2.3	39%	37%	37%
R 86	Residential Receptor near Garden Street, Whitby	0.82	0.88	0.85	-4%	0.85	-4%	0%	2.3	38%	37%	37%
R 87	Trafalgar Castle School, Whitby	0.82	0.86	0.83	-3%	0.84	-2%	0%	2.3	37%	36%	36%
R 88	Residential Receptor near Dundas Street, Whitby	0.82	0.86	0.84	-3%	0.85	-2%	1%	2.3	38%	36%	37%
R 89	Residential Receptor near Lupin Drive, Whitby	0.82	0.85	0.83	-2%	0.83	-1%	1%	2.3	37%	36%	36%
R 90	C.E. Broughton Public School - Public school, Whitby	0.82	0.84	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 91	Anderson CVI highs School, Whitby	0.82	0.84	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 92	St Theresa Catholic School, Whitby	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 93	Fairy Glen Day Care Centre	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 94	Learning Jungle Thickson, Whitby	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 95	Whitby Medical Arts Urgent Care, Whitby	0.82	0.83	0.82	-1%	0.82	-1%	0%	2.3	36%	36%	36%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	0.82	0.84	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 97	Residential Receptor near Kathleen Street, Whitby	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	37%	36%	36%
R 98	Residential Receptor near Thornton Road, Oshawa	0.82	0.86	0.84	-3%	0.84	-3%	0%	2.3	37%	36%	36%
R 99	Residential Receptor near Thornton Road, Oshawa	0.82	0.86	0.83	-3%	0.84	-3%	0%	2.3	38%	36%	36%
R 100	Residential Receptor near Thornton Road, Oshawa	0.82	0.88	0.84	-4%	0.84	-4%	0%	2.3	38%	37%	37%
R 101	Residential Receptor near Stevenson Road, Oshawa	0.82	0.85	0.83	-2%	0.83	-2%	0%	2.3	37%	36%	36%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	0.82	0.83	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 103	Intrapid Medical Centre & Walk-in Clinic, Oshawa	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	0.82	0.83	0.82	-1%	0.82	-1%	0%	2.3	36%	36%	36%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	0.82	0.84	0.83	-1%	0.83	-1%	0%	2.3	36%	36%	36%
R 106	Mary Street Community School, Oshawa	0.82	0.83	0.82	0%	0.82	0%	0%	2.3	36%	36%	36%
R 107	Magic Pencils Learning Centre, Oshawa	0.82	0.83	0.82	-1%	0.82	0%	0%	2.3	36%	36%	36%
R 108												

Table B-16 Annual Average Benzene Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
ID	Name	Concentration (µg/m ³)	Annual Average Concentration (µg/m ³)	Annual Average Concentration (µg/m ³)	% change from Existing Conditions	Annual Max Concentration µg/m ³	% change from Existing Conditions	% change from No- Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 2	Town Care Walk-in Clinic, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	107%	105%	105%
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.45	0.50	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.45	0.51	0.48	-4%	0.49	-4%	0%	0.45	112%	108%	108%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.45	0.50	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	107%	105%	105%
R 12	Residential apartment near Markham Road, Scarborough	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	109%	106%	106%
R 13	Residential apartment near Markham Road, Scarborough	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	109%	106%	106%
R 14	Residential apartment near Markham Road, Scarborough	0.45	0.50	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 15	Residential Receptor near Orton Park Road, Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 16	Residential Receptor near Neilson Road, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 19	The Shoniker Clinic., The Shoniker Clinic	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 20	Centennial College-Morningside Campus 1	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.45	0.48	0.48	-1%	0.48	-1%	0%	0.45	107%	106%	107%
R 22	N'sheemaahn daycare Center near Intersection of Military Trail & Ellesmere Road	0.45	0.48	0.47	0%	0.47	0%	0%	0.45	106%	105%	105%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.45	0.48	0.48	-1%	0.47	-1%	0%	0.45	106%	106%	106%
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 25	Meadowvale Public School, Primary School, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 26	Meadowvale Day Care Centre, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 27	Residential Receptor near Kingston Road, Scarborough	0.45	0.47	0.47	0%	0.47	-1%	0%	0.45	105%	105%	105%
R 28	Rouge Valley Public School, Primary school	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.45	0.50	0.49	-4%	0.48	-4%	0%	0.45	112%	108%	108%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 32	Altamont Care Community, Scarborough	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 34	The Gates Medical Centre, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 35	Residential Receptor near Rougemount Drive, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 36	Dunbarton High School - Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.45	0.50	0.48	-4%	0.49	-3%	0%	0.45	112%	108%	108%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.45	0.50	0.48	-4%	0.49	-4%	0%	0.45	112%	108%	108%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 40	Durham Drug Store Walk-in Clinic, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 41	Residential Receptor near Sheppard Ave, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 42	Bayfair Daycare, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 43	Muppets Children's Centre, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 45	Residential Receptor near Kingston Road, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 46	Residential Receptor near RR29, Pickering	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 49	Glengrove School, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 50	VIVA Pickering Retirement Community, Pickering	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 52	Little Rose Home Daycare., Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	109%	106%	107%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	0.45	0.51	0.49	-4%	0.49	-4%	0%	0.45	113%	108%	108%
R 55	Residential receptor near Brook Road, Pickering	0.45	0.50	0.48	-3%	0.48	-3%	0%	0.45	111%	107%	107%
R 56	Alert Nursing & Home Care Svc, Pickering	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 59	Residential Receptor near Church Street, Ajax	0.45	0.48	0.48	-2%	0.47	-2%	0%	0.45	107%	106%	106%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	110%	107%	107%
R 62	Lincoln Avenue Public School, Ajax	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 63	Residential Receptor near Westney Road, Ajax	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 64	Residential Receptor near Durham Street, Ajax	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 65	Residential Receptor near Durham street, Ajax	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	109%	106%	106%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 67	Westney Heights Medical Centre, Ajax	0.45	0.48	0.47	-2%	0.48	-2%	0%	0.45	107%	106%	106%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	108%	106%	106%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.45	0.51	0.48	-4%	0.48	-4%	0%	0.45	112%	107%	108%
R 71	Residential Receptor near Salem Road, Ajax	0.45	0.50	0.48	-4%	0.48	-4%	0%	0.45	111%	107%	107%
R 72	Residential Receptor Martinworth Lane, Ajax	0.45	0.47	0.47	-1%	0.47	0%	1%	0.45	105%	105%	105%
R 73	Residential Receptor near Lake Ridge Road, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 74	Residential Receptor Bluebell Crescent, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 76	Fairview Lodge, Nursing home, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	107%	105%	105%
R 77	Kids & Company, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 78	MyHealth Centre, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	107%	105%	105%
R 79	East Whitby Clinic - Medical Clinic, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 80	Durham Montessori School & Daycare, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 81	Perry House Child Care Services, Whitby	0.45	0.47	0.47	-1%	0.47	-1%	0%	0.45	105%	105%	105%
R 82	Blyth Academy Whitby - Private school, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 83	Residential Receptor near Garden Street, Whitby	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	109%	106%	106%
R 84	Residential Receptor near Garden Street, Whitby	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	109%	106%	106%
R 85	Residential Receptor near Garden Street, Whitby	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	110%	107%	107%
R 86	Residential Receptor near Garden Street, Whitby	0.45	0.49	0.48	-2%	0.48	-2%	0%	0.45	109%	106%	106%
R 87	Trafalgar Castle School, Whitby	0.45	0.47	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 88	Residential Receptor near Dundas Street, Whitby	0.45	0.48	0.47	-1%	0.48	-1%	0%	0.45	107%	106%	106%
R 89	Residential Receptor near Lupin Drive, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 90	C.E. Broughton Public School - Public school, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 91	Anderson CVI highs School, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 92	St Theresa Catholic School, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 93	Fairy Glen Day Care Centre	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 94	Learning Jungle Thickson, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 95	Whitby Medical Arts Urgent Care, Whitby	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 97	Residential Receptor near Kathleen Street, Whitby	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 98	Residential Receptor near Thornton Road, Oshawa	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	107%	105%	105%
R 99	Residential Receptor near Thornton Road, Oshawa	0.45	0.48	0.48	-2%	0.48	-2%	0%	0.45	107%	106%	106%
R 100	Residential Receptor near Thornton Road, Oshawa	0.45	0.49	0.48	-3%	0.48	-3%	0%	0.45	109%	106%	106%
R 101	Residential Receptor near Stevenson Road, Oshawa	0.45	0.48	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	0.45	0.47	0.47	0%	0.47	0%	0%	0.45	105%	105%	105%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	0.45	0.47	0.47	-1%	0.47	-1%	0%	0.45	106%	105%	105%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	0.45	0.47	0.47	0%	0.47	0%	0%	0.45			

Table B-17 24-hr Maximum 1,3 Butadiene Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor ID	Receptor Name	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC		
		Concentration (µg/m³)	24-hr Max Concentration (µg/m³)	24-hr Max Concentration (µg/m³)	% change from Existing Conditions	24-hr Max Concentration µg/m³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	0.06	0.068	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 2	Town Care Walk-in Clinic, Scarborough	0.06	0.067	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.06	0.068	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	0.06	0.065	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.06	0.063	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.06	0.067	0.062	-7%	0.062	-7%	0%	10	1%	1%	1%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent, Scarborough	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.06	0.067	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.06	0.063	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 12	Residential apartment near Markham Road, Scarborough	0.06	0.063	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 13	Residential apartment near Markham Road, Scarborough	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 14	Residential apartment near Markham Road, Scarborough	0.06	0.062	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 15	Residential Receptor near Orton Park Road, Scarborough	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 16	Residential Receptor near Neilson Road, Scarborough	0.06	0.064	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 19	The Shoniker Clinic., The Shoniker Clinic	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 20	Centennial College-Morningside Campus 1	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 22	N'sheemaeh'n daycare Center near Intersection of Military Trail & Ellesmere Road	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.06	0.066	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 25	Meadowvale Public School, Primary School, Scarborough	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 26	Meadowvale Day Care Centre, Scarborough	0.06	0.066	0.062	-7%	0.062	-6%	0%	10	1%	1%	1%
R 27	Residential Receptor near Kingston Road, Scarborough	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 28	Rouge Valley Public School, Primary school	0.06	0.063	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.06	0.063	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.06	0.065	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 32	Altamont Care Community, Scarborough	0.06	0.068	0.062	-9%	0.062	-9%	0%	10	1%	1%	1%
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 34	The Gates Medical Centre, Pickering	0.06	0.067	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 35	Residential Receptor near Rougemount Drive, Pickering	0.06	0.064	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 36	Dunbarton High School - Pickering	0.06	0.063	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.06	0.066	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.06	0.064	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.06	0.066	0.062	-7%	0.062	-7%	0%	10	1%	1%	1%
R 40	Durham Drug Store Walk-In Clinic, Pickering	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 41	Residential Receptor near Sheppard Ave, Pickering	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 42	Bayfair Daycare, Pickering	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 43	Muppets Children's Centre, Pickering	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 45	Residential Receptor near Kingston Road, Pickering	0.06	0.064	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 46	Residential Receptor near RR29, Pickering	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.06	0.062	0.062	-1%	0.062	-1%	0%	10	1%	1%	1%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.06	0.065	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 49	Glengrove School, Pickering	0.06	0.064	0.062	-2%	0.062	-2%	0%	10	1%	1%	1%
R 50	VIVA Pickering Retirement Community, Pickering	0.06	0.067	0.062	-7%	0.062	-7%	0%	10	1%	1%	1%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.06	0.069	0.062	-10%	0.062	-10%	0%	10	1%	1%	1%
R 52	Little Rose Home Daycare., Pickering	0.06	0.068	0.062	-9%	0.062	-9%	0%	10	1%	1%	1%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	0.06	0.070	0.062	-12%	0.062	-12%	0%	10	1%	1%	1%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	0.06	0.070	0.062	-12%	0.062	-12%	0%	10	1%	1%	1%
R 55	Residential receptor near Brook Road, Pickering	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 56	Alert Nursing & Home Care Svc, Pickering	0.06	0.066	0.062	-7%	0.062	-7%	0%	10	1%	1%	1%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.06	0.068	0.062	-9%	0.062	-9%	0%	10	1%	1%	1%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 59	Residential Receptor near Church Street, Ajax	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 62	Lincoln Avenue Public School, Ajax	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 63	Residential Receptor near Westney Road, Ajax	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 64	Residential Receptor near Durham Street, Ajax	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 65	Residential Receptor near Durham street, Ajax	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.06	0.065	0.062	-4%	0.062	-4%	0%	10	1%	1%	1%
R 67	Westney Heights Medical Centre, Ajax	0.06	0.064	0.062	-3%	0.062	-3%	0%	10	1%	1%	1%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.06	0.071	0.062	-13%	0.062	-13%	0%	10	1%	1%	1%
R 69	Residential Receptor near Lovngrove Lane, Ajax	0.06	0.071	0.062	-12%	0.062	-12%	0%	10	1%	1%	1%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.06	0.067	0.062	-7%	0.062	-7%	0%	10	1%	1%	1%
R 71	Residential Receptor near Salem Road, Ajax	0.06	0.065	0.062	-5%	0.062	-5%	0%	10	1%	1%	1%
R 72	Residential Receptor Martinworth Lane, Ajax	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 73	Residential Receptor near Lake Ridge Road, Whitby	0.06	0.066	0.062	-6%	0.062	-6%	0%	10	1%	1%	1%
R 74	Residential Receptor Bluebell Crescent, Whitby	0.06	0.069	0.062	-9%	0.062	-9%	0%	10	1%	1%	1%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.06	0.073	0.062	-15%	0.062	-15%	0%	10	1%	1%	1%
R 76	Fairview Lodge, Nursing home, Whitby	0.06	0.068	0.062	-9%	0.062	-9%	0%	10	1%	1%	1%
R 77	Kids & Company, Whitby	0.06	0.067	0.062	-8%	0.062	-8%	0%	10	1%	1%	1%
R 78	MyHealth Centre, Whitby	0.06	0.066	0.062	-6%	0.062						

Table B-18 Annual Average 1,3 Butadiene Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC			
ID	Name	Concentration	Annual Average Concentration	Annual Average Concentration	% change from Existing Conditions	Annual Average Concentration	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)	
		(µg/m ³)	(µg/m ³)	(µg/m ³)		(µg/m ³)							
R 1	Oasis Family Health Centre, Scarborough	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 2	Town Care Walk-in Clinic, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	0.03	0.035	0.033	-5%	0.033	-5%	0%	2	2%	2%	2%	
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 5	Residential Receptor near Stanwell Drive, Scarborough	0.03	0.035	0.033	-5%	0.033	-5%	0%	2	2%	2%	2%	
R 6	Residential Receptor near Stoneton Drive, Scarborough	0.03	0.035	0.033	-7%	0.033	-7%	0%	2	2%	2%	2%	
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	0.03	0.035	0.033	-5%	0.033	-5%	0%	2	2%	2%	2%	
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 12	Residential apartment near Markham Road, Scarborough	0.03	0.034	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 13	Residential apartment near Markham Road, Scarborough	0.03	0.034	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 14	Residential apartment near Markham Road, Scarborough	0.03	0.035	0.033	-5%	0.033	-5%	0%	2	2%	2%	2%	
R 15	Residential Receptor near Orton Park Road, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 16	Residential Receptor near Neilson Road, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 17	Residential Receptor near Morningside Avenue, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 19	The Shoniker Clinic., The Shoniker Clinic	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 20	Centennial College-Morningside Campus 1	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 22	N'sheemaeh'n daycare Center near Intersection of Military Trail & Ellesmere Road	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 24	Residential Receptor at Scarbell Drive, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 25	Meadowvale Public School, Primary School, Scarborough	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 26	Meadowvale Day Care Centre, Scarborough	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 27	Residential Receptor near Kingston Road, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 28	Rouge Valley Public School, Primary school	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 29	Scarborough Rouge Valley YMCA Child Care Centre	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	0.03	0.035	0.033	-7%	0.033	-7%	0%	2	2%	2%	2%	
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	0.03	0.035	0.033	-5%	0.033	-5%	0%	2	2%	2%	2%	
R 32	Altamont Care Community, Scarborough	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 33	EDUKids Child Care Centres Altona Road, Pickering	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 34	The Gates Medical Centre, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 35	Residential Receptor near Rougemount Drive, Pickering	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 36	Dunbarton High School - Pickering	0.03	0.034	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.03	0.035	0.033	-6%	0.033	-6%	0%	2	2%	2%	2%	
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	0.03	0.035	0.033	-7%	0.033	-7%	0%	2	2%	2%	2%	
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	0.03	0.034	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 40	Durham Drug Store Walk-In Clinic, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 41	Residential Receptor near Sheppard Ave, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 42	Bayfair Daycare, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 43	Muggets Children's Centre, Pickering	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 45	Residential Receptor near Kingston Road, Pickering	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 46	Residential Receptor near RR29, Pickering	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 49	Glengrove School, Pickering	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 50	VIVA Pickering Retirement Community, Pickering	0.03	0.034	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 52	Little Rose Home Daycare., Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	0.03	0.034	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	0.03	0.036	0.033	-7%	0.033	-7%	0%	2	2%	2%	2%	
R 55	Residential receptor near Brock Road, Pickering	0.03	0.035	0.033	-6%	0.033	-6%	0%	2	2%	2%	2%	
R 56	Alert Nursing & Home Care Svc, Pickering	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	0.03	0.035	0.033	-5%	0.033	-4%	0%	2	2%	2%	2%	
R 59	Residential Receptor near Church Street, Ajax	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 60	Residential Receptor near Macey CT and Church Street, Ajax	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	0.03	0.035	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 62	Lincoln Avenue Public School, Ajax	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 63	Residential Receptor near Westney Road, Ajax	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 64	Residential Receptor near Durham Street, Ajax	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 65	Residential Receptor near Durham street, Ajax	0.03	0.034	0.033	-4%	0.033	-4%	0%	2	2%	2%	2%	
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 67	Westney Heights Medical Centre, Ajax	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 68	Kingston Medical Clinic & Pharmacy, Ajax	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 69	Residential Receptor near Lovrgrove Lane, Ajax	0.03	0.034	0.033	-3%	0.033	-3%	0%	2	2%	2%	2%	
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	0.03	0.035	0.033	-7%	0.033	-7%	0%	2	2%	2%	2%	
R 71	Residential Receptor near Salem Road, Ajax	0.03	0.035	0.033	-6%	0.033	-6%	0%	2	2%	2%	2%	
R 72	Residential Receptor Martinworth Lane, Ajax	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 73	Residential Receptor near Lake Ridge Road, Whitby	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 74	Residential Receptor Bluebell Crescent, Whitby	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	0.03	0.033	0.033	-1%	0.033	-1%	0%	2	2%	2%	2%	
R 76	Fairview Lodge, Nursing home, Whitby	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 77	Kids & Company, Whitby	0.03	0.033	0.033	0%	0.033	0%	0%	2	2%	2%	2%	
R 78	MyHealth Centre, Whitby	0.03	0.034	0.033	-2%	0.033	-2%	0%	2	2%	2%	2%	
R 79	East Whitby Clinic - Medical Clinic, Whitby	0.03	0.033	0.033	0%	0.033	0%						

Table B-19 24-hr Maximum Formaldehyde Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
ID	Name	Concentration (µg/m ³)	24-hr Max Concentration (µg/m ³)	24-hr Max Concentration (µg/m ³)	% change from Existing Conditions	24-hr Max Concentration (µg/m ³)	% change from Existing Conditions	% change from No-Build		Existing Conditions (2017)	Future No-Build (2031)	Future Build (2031)
R 1	Oasis Family Health Centre, Scarborough	2.8	2.84	2.82	-1%	2.819	-1%	0%	65	4%	4%	4%
R 2	Town Care Walk-in Clinic, Scarborough	2.8	2.84	2.82	-1%	2.821	-1%	0%	65	4%	4%	4%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	2.8	2.85	2.82	-1%	2.823	-1%	0%	65	4%	4%	4%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	2.8	2.83	2.81	-1%	2.816	-1%	0%	65	4%	4%	4%
R 5	Residential Receptor near Stanwell Drive, Scarborough	2.8	2.84	2.82	-1%	2.819	-1%	0%	65	4%	4%	4%
R 6	Residential Receptor near Stoneton Drive, Scarborough	2.8	2.86	2.82	-1%	2.823	-1%	0%	65	4%	4%	4%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	2.8	2.84	2.82	-1%	2.817	-1%	0%	65	4%	4%	4%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	2.8	2.82	2.81	0%	2.814	0%	0%	65	4%	4%	4%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	2.8	2.83	2.81	-1%	2.817	0%	0%	65	4%	4%	4%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	2.8	2.84	2.82	-1%	2.824	-1%	0%	65	4%	4%	4%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	2.8	2.83	2.81	-1%	2.817	0%	0%	65	4%	4%	4%
R 12	Residential apartment near Markham Road, Scarborough	2.8	2.84	2.82	-1%	2.822	-1%	0%	65	4%	4%	4%
R 13	Residential apartment near Markham Road, Scarborough	2.8	2.83	2.81	-1%	2.816	0%	0%	65	4%	4%	4%
R 14	Residential apartment near Markham Road, Scarborough	2.8	2.83	2.81	-1%	2.815	-1%	0%	65	4%	4%	4%
R 15	Residential Receptor near Orton Park Road, Scarborough	2.8	2.82	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 16	Residential Receptor near Neilson Road, Scarborough	2.8	2.82	2.81	0%	2.817	0%	0%	65	4%	4%	4%
R 17	Residential Receptor near Morningside Avenue, Scarborough	2.8	2.82	2.81	0%	2.813	0%	0%	65	4%	4%	4%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	2.8	2.81	2.81	0%	2.808	0%	0%	65	4%	4%	4%
R 19	The Shoniker Clinic., The Shoniker Clinic	2.8	2.81	2.80	0%	2.806	0%	0%	65	4%	4%	4%
R 20	Centennial College-Morningside Campus 1	2.8	2.82	2.81	0%	2.821	0%	0%	65	4%	4%	4%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	2.8	2.83	2.83	0%	2.835	0%	0%	65	4%	4%	4%
R 22	N'shemahm daycare Center near Intersection of Military Trail & Ellesmere Road	2.8	2.82	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	2.8	2.81	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 24	Residential Receptor at Scarbell Drive, Scarborough	2.8	2.82	2.81	0%	2.816	0%	0%	65	4%	4%	4%
R 25	Meadowvale Public School, Primary School, Scarborough	2.8	2.82	2.81	0%	2.809	0%	0%	65	4%	4%	4%
R 26	Meadowvale Day Care Centre, Scarborough	2.8	2.82	2.81	0%	2.809	0%	0%	65	4%	4%	4%
R 27	Residential Receptor near Kingston Road, Scarborough	2.8	2.82	2.81	0%	2.811	0%	0%	65	4%	4%	4%
R 28	Rouge Valley Public School, Primary school	2.8	2.83	2.81	-1%	2.815	-1%	0%	65	4%	4%	4%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	2.8	2.83	2.81	-1%	2.814	-1%	0%	65	4%	4%	4%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd/Sheppard Ave. & Kingston Road	2.8	2.86	2.82	-1%	2.826	-1%	0%	65	4%	4%	4%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd/Sheppard Ave. & Kingston Rd	2.8	2.86	2.83	-1%	2.828	-1%	0%	65	4%	4%	4%
R 32	Altamont Care Community, Scarborough	2.8	2.81	2.80	0%	2.806	0%	0%	65	4%	4%	4%
R 33	EDUKids Child Care Centres Altona Road, Pickering	2.8	2.82	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 34	The Gates Medical Centre, Pickering	2.8	2.82	2.81	0%	2.811	0%	0%	65	4%	4%	4%
R 35	Residential Receptor near Rougemount Drive, Pickering	2.8	2.82	2.81	0%	2.811	0%	0%	65	4%	4%	4%
R 36	Dunbarton High School - Pickering	2.8	2.83	2.81	-1%	2.815	0%	0%	65	4%	4%	4%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.8	2.87	2.83	-1%	2.830	-1%	0%	65	4%	4%	4%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	2.8	2.86	2.82	-1%	2.828	-1%	0%	65	4%	4%	4%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	2.8	2.83	2.81	-1%	2.815	-1%	0%	65	4%	4%	4%
R 40	Durham Drug Store Walk-In Clinic, Pickering	2.8	2.81	2.81	0%	2.810	0%	0%	65	4%	4%	4%
R 41	Residential Receptor near Sheppard Ave, Pickering	2.8	2.81	2.81	0%	2.809	0%	0%	65	4%	4%	4%
R 42	Bayfair Daycare, Pickering	2.8	2.81	2.80	0%	2.806	0%	0%	65	4%	4%	4%
R 43	Muppets Children's Centre, Pickering	2.8	2.81	2.80	0%	2.806	0%	0%	65	4%	4%	4%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	2.8	2.81	2.80	0%	2.804	0%	0%	65	4%	4%	4%
R 45	Residential Receptor near Kingston Road, Pickering	2.8	2.83	2.81	-1%	2.813	0%	0%	65	4%	4%	4%
R 46	Residential Receptor near RR29, Pickering	2.8	2.83	2.81	-1%	2.814	-1%	0%	65	4%	4%	4%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	2.8	2.83	2.81	-1%	2.814	-1%	0%	65	4%	4%	4%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	2.8	2.82	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 49	Glen Grove School, Pickering	2.8	2.82	2.81	-1%	2.814	0%	0%	65	4%	4%	4%
R 50	VIVA Pickering Retirement Community, Pickering	2.8	2.82	2.81	0%	2.812	0%	0%	65	4%	4%	4%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	2.8	2.84	2.82	-1%	2.823	-1%	0%	65	4%	4%	4%
R 52	Little Rose Home Daycare., Pickering	2.8	2.81	2.80	0%	2.805	0%	0%	65	4%	4%	4%
R 53	Residential Receptor near intersection of Kingston Road and Brock Road, Pickering	2.8	2.85	2.82	-1%	2.823	-1%	0%	65	4%	4%	4%
R 54	Residential Receptor near Intersection of Kingston Road and Brock Road, Pickering	2.8	2.88	2.83	-2%	2.835	-1%	0%	65	4%	4%	4%
R 55	Residential receptor near Brock Road, Pickering	2.8	2.85	2.82	-1%	2.827	-1%	0%	65	4%	4%	4%
R 56	Alert Nursing & Home Care Svc, Pickering	2.8	2.81	2.81	0%	2.809	0%	0%	65	4%	4%	4%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	2.8	2.82	2.81	-1%	2.815	0%	0%	65	4%	4%	4%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	2.8	2.84	2.82	-1%	2.822	-1%	0%	65	4%	4%	4%
R 59	Residential Receptor near Church Street, Ajax	2.8	2.84	2.82	-1%	2.824	-1%	0%	65	4%	4%	4%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	2.8	2.83	2.81	-1%	2.814	0%	0%	65	4%	4%	4%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	2.8	2.84	2.82	-1%	2.830	0%	0%	65	4%	4%	4%
R 62	Lincoln Avenue Public School, Ajax	2.8	2.82	2.81	-1%	2.813	0%	0%	65	4%	4%	4%
R 63	Residential Receptor near Westney Road, Ajax	2.8	2.85	2.82	-1%	2.826	-1%	0%	65	4%	4%	4%
R 64	Residential Receptor near Durham Street, Ajax	2.8	2.84	2.81	-1%	2.819	-1%	0%	65	4%	4%	4%
R 65	Residential Receptor near Durham street, Ajax	2.8	2.85	2.82	-1%	2.824	-1%	0%	65	4%	4%	4%
R 66	Residential Receptor near Durham street and Patterson CT., Ajax	2.8	2.821	2.808	0%	2.813	0%	0%	65	4%	4%	4%
R 67	Westney Heights Medical Centre, Ajax	2.8	2.832	2.812	-1%	2.819	0%	0%	65	4%	4%	4%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	2.8	2.827	2.810	-1%	2.816	0%	0%	65	4%	4%	4%
R 69	Residential Receptor near Lovrgrove Lane, Ajax	2.8	2.829	2.810	-1%	2.813	-1%	0%	65	4%	4%	4%
R 70	Residential Receptor near Intersection of Salem Road and Highway 2	2.8	2.857	2.819	-1%	2.822	-1%	0%	65	4%	4%	4%
R 71	Residential Receptor near Salem Road, Ajax	2.8	2.844	2.816	-1%	2.818	-1%	0%	65	4%	4%	4%
R 72	Residential Receptor Martinworth Lane, Ajax	2.8	2.814	2.806	0%	2.814	0%	0%	65	4%	4%	4%
R 73	Residential Receptor near Lake Ridge Road, Whitby	2.8	2.826	2.810	-1%	2.819	0%	0%	65	4%	4%	4%
R 74	Residential Receptor Bluebell Crescent, Whitby	2.8	2.821	2.808	0%	2.813	0%	0%	65	4%	4%	4%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	2.8	2.823	2.809	-1%	2.814	0%	0%	65	4%	4%	4%
R 76	Fairview Lodge, Nursing home, Whitby	2.8	2.836	2.813	-1%	2.821	-1%	0%	65	4%	4%	4%
R 77	Kids & Company, Whitby	2.8	2.823	2.809	0%	2.813	0%	0%	65	4%	4%	4%
R 78	MyHealth Centre, Whitby	2.8	2.838	2.814	-1%	2.823	-1%	0%	65	4%	4%	4%
R 79	East Whitby Clinic - Medical Clinic, Whitby	2.8	2.821	2.808	0%	2.813	0%	0%	65	4%	4%	4%
R 80	Durham Montessori School & Daycare, Whitby	2.8	2.812	2.805	0%	2.807	0%	0%	65	4%	4%	4%
R 81	Perry House Child Care Services, Whitby	2.8	2.830	2.811	-1%	2.818	0%	0%	65	4%	4%	4%
R 82	Blyth Academy Whitby - Private school, Whitby	2.8	2.824	2.809	-1%	2.814	0%	0%	65	4%	4%	4%
R 83	Residential Receptor near Garden Street, Whitby	2.8	2.836	2.813	-1%	2.815	-1%	0%	65	4%	4%	4%
R 84	Residential Receptor near Garden Street, Whitby	2.8	2.837	2.814	-1%	2.820	-1%	0%	65	4%	4%	4%
R 85	Residential Receptor near Garden Street, Whitby	2.8	2.841	2.816	-1%	2.820	-1%	0%	65	4%	4%	4%
R 86	Residential Receptor near Garden Street, Whitby	2.8	2.830	2.811	-1%	2.813	-1%	0%	65	4%	4%	4%
R 87	Trafalgar Castle School, Whitby	2.8	2.819	2.807	0%	2.809	0%	0%	65	4%	4%	4%
R 88	Residential Receptor near Dundas Street, Whitby	2.8	2.822	2.808	0%	2.815	0%	0%	65	4%	4%	4%
R 89	Residential Receptor near Lupin Drive, Whitby	2.8	2.812	2.805	0%	2.808	0%	0%	65	4%	4%	4%
R 90	C.E. Broughton Public School - Public school, Whitby	2.8	2.811	2.804	0%	2.807	0%	0%	65	4%	4%	4%
R 91	Anderson CVI highs School, Whitby	2.8	2.811	2.804	0%	2.808	0%	0%	65	4%	4%	4%
R 92	St Theresa Catholic School, Whitby	2.8	2.813	2.805	0%	2.809	0%	0%	65	4%	4%	4%
R 93	Fairy Glen Day Care Centre	2.8	2.813	2.805	0%	2.809	0%	0%	65	4%	4%	4%
R 94	Learning Jungle Thickson, Whitby	2.8	2.808	2.803	0%	2.805	0%	0%	65	4%	4%	4%
R 95	Whitby Medical Arts Urgent Care, Whitby	2.8	2.805	2.802	0%	2.803	0%	0%	65	4%	4%	4%
R 96	Sunnycrest Nursing Homes Ltd., Whitby	2.8	2.811	2.804	0%	2.807	0%	0%	65	4%	4%	4%
R 97	Residential Receptor near Kathleen Street, Whitby	2.8	2.819	2.807	0%	2.813	0%	0%	65	4%	4%	4%
R 98	Residential Receptor near Thornton Road, Oshawa	2.8	2.818	2.807	0%	2.809	0%	0%	65	4%	4%	4%
R 99	Residential Receptor near Thornton Road, Oshawa	2.8	2.821	2.808	0%	2.810	0%	0%	65	4%	4%	4%
R 100	Residential Receptor near Thornton Road, Oshawa	2.8	2.828	2.810	-1%	2.814	-1%	0%	65	4%	4%	4%
R 101	Residential Receptor near Stevenson Road, Oshawa	2.8	2.815	2.806	0%	2.812	0%	0%	65	4%	4%	4%
R 102	Methadone Oshawa - New Direction Addiction Clinic, Oshawa	2.8	2.806	2.803	0%	2.805	0%	0%	65	4%	4%	4%
R 103	Intrepid Medical Centre & Walk-in Clinic, Oshawa	2.8	2.808	2.803	0%	2.805	0%	0%	65	4%	4%	4%
R 104	Extendicare Oshawa - Assisted living facility, Oshawa	2.8	2.804	2.801	0%	2.803	0%	0%	65	4%	4%	4%
R 105	Residential Receptor near Fernhill Blvd., Oshawa	2.8	2.808	2.803	0%	2.807	0%	0%	65	4%	4%	4%
R 106	Mary Street Community School, Oshawa	2.8	2.803	2.801	0%	2.802	0%	0%	65	4%	4%	4%
R 107	Magic Pencils Learning Centre, Oshawa	2.8	2.804	2.801	0%	2.804	0%	0%	65	4%	4%	4%
R 108	Oshawa Clinic - Medical Clinic, Oshawa	2.8	2.803	2.801	0%	2.802	0%	0%	65	4%	4%	4%

Table B-20 24-hr Maximum B[a]P Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2041 Future Build (2031)			Ambient Air Quality Criteria (µg/m³)	% of the AAQC		
				Concentration	24-hr Max Concentration	24-hr Max Concentration	% change from Existing Conditions	24-hr Max Concentration		% change from Existing Conditions	% change from No-Build	Existing Conditions (2019)
ID	Name	(µg/m³)	(µg/m³)	(µg/m³)		(µg/m³)						
R 1	Oasis Family Health Centre, Scarborough	1.16E-04	2.96E-04	1.50E-04	-49%	1.50E-04	-49%	0%	5.00E-05	591%	301%	300%
R 2	Town Care Walk-in Clinic, Scarborough	1.16E-04	3.15E-04	1.54E-04	-51%	1.53E-04	-51%	-1%	5.00E-05	630%	308%	307%
R 3	Town Center Court Residential Receptor near Intersection of McCowan and Ellesmere Road, Scarborough	1.16E-04	3.73E-04	1.64E-04	-56%	1.62E-04	-56%	-1%	5.00E-05	746%	328%	325%
R 4	Residential Receptor near Intersection of McCowan and Ellesmere Road., Scarborough	1.16E-04	2.84E-04	1.48E-04	-48%	1.48E-04	-48%	0%	5.00E-05	567%	295%	295%
R 5	Residential Receptor near Stanwell Drive, Scarborough	1.16E-04	3.18E-04	1.54E-04	-52%	1.54E-04	-52%	0%	5.00E-05	637%	307%	307%
R 6	Residential Receptor near Stoneton Drive, Scarborough	1.16E-04	3.61E-04	1.60E-04	-56%	1.59E-04	-56%	-1%	5.00E-05	723%	320%	319%
R 7	48 Stoneton Drive Residential Receptor near Intersection of McCowan and Ellesmere Road.	1.16E-04	2.94E-04	1.50E-04	-49%	1.49E-04	-49%	0%	5.00E-05	588%	299%	299%
R 8	Residential Receptor near Sunderland Crescent, Sunderland Crescent. Scarborough	1.16E-04	2.43E-04	1.41E-04	-42%	1.40E-04	-42%	0%	5.00E-05	485%	282%	280%
R 9	Residential Receptor at 32 Pendle Hill Ct., Scarborough	1.16E-04	2.67E-04	1.45E-04	-46%	1.45E-04	-46%	-1%	5.00E-05	534%	291%	289%
R 10	Maple Clinic- Virtual Care Clinic., Scarborough	1.16E-04	3.28E-04	1.57E-04	-52%	1.56E-04	-52%	-1%	5.00E-05	657%	314%	312%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Road, Scarborough	1.16E-04	2.82E-04	1.48E-04	-48%	1.47E-04	-48%	-1%	5.00E-05	565%	296%	294%
R 12	Residential apartment near Markham Road, Scarborough	1.16E-04	3.45E-04	1.60E-04	-54%	1.58E-04	-54%	-1%	5.00E-05	690%	319%	316%
R 13	Residential apartment near Markham Road, Scarborough	1.16E-04	2.64E-04	1.43E-04	-46%	1.42E-04	-46%	-1%	5.00E-05	527%	285%	284%
R 14	Residential apartment near Markham Road, Scarborough	1.16E-04	2.80E-04	1.46E-04	-48%	1.44E-04	-49%	-1%	5.00E-05	561%	291%	288%
R 15	Residential Receptor near Orton Park Road, Scarborough	1.16E-04	2.08E-04	1.36E-04	-35%	1.35E-04	-35%	-1%	5.00E-05	417%	272%	270%
R 16	Residential Receptor near Neilson Road, Scarborough	1.16E-04	2.37E-04	1.43E-04	-40%	1.41E-04	-40%	-1%	5.00E-05	475%	286%	283%
R 17	Residential Receptor near Morningside Avenue, Scarborough	1.16E-04	2.12E-04	1.37E-04	-35%	1.36E-04	-36%	-1%	5.00E-05	423%	275%	272%
R 18	Seven Oaks - Nursing home, 9 Neilson Road, Scarborough	1.16E-04	1.76E-04	1.29E-04	-27%	1.29E-04	-27%	0%	5.00E-05	352%	258%	257%
R 19	The Shoniker Clinic., The Shoniker Clinic	1.16E-04	1.60E-04	1.25E-04	-22%	1.25E-04	-22%	0%	5.00E-05	320%	251%	250%
R 20	Centennial College-Morningside Campus 1	1.16E-04	2.47E-04	1.48E-04	-40%	1.47E-04	-40%	0%	5.00E-05	494%	295%	294%
R 21	Receptor near Intersection of Military Trail & Ellesmere Road	1.16E-04	2.72E-04	1.65E-04	-39%	1.66E-04	-39%	0%	5.00E-05	544%	330%	331%
R 22	N'shemahm daycare Center near Intersection of Military Trail & Ellesmere Road	1.16E-04	1.97E-04	1.32E-04	-33%	1.34E-04	-32%	1%	5.00E-05	393%	263%	267%
R 23	Residential Receptor near Military Trail and Military Trail & Ellesmere Road	1.16E-04	1.84E-04	1.33E-04	-28%	1.32E-04	-28%	-1%	5.00E-05	368%	266%	264%
R 24	Residential Receptor at Scarbell Drive, Scarborough	1.16E-04	2.21E-04	1.38E-04	-38%	1.38E-04	-38%	0%	5.00E-05	441%	275%	276%
R 25	Meadowdale Public School, Primary School, Scarborough	1.16E-04	1.94E-04	1.31E-04	-32%	1.31E-04	-32%	0%	5.00E-05	388%	262%	262%
R 26	Meadowdale Day Care Centre, Scarborough	1.16E-04	1.96E-04	1.31E-04	-33%	1.31E-04	-33%	0%	5.00E-05	391%	263%	263%
R 27	Residential Receptor near Kingston Road, Scarborough	1.16E-04	1.94E-04	1.31E-04	-32%	1.31E-04	-33%	0%	5.00E-05	388%	262%	261%
R 28	Rouge Valley Public School, Primary school	1.16E-04	2.55E-04	1.42E-04	-44%	1.42E-04	-44%	0%	5.00E-05	510%	285%	285%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	1.16E-04	2.53E-04	1.42E-04	-44%	1.42E-04	-44%	0%	5.00E-05	506%	284%	284%
R 30	81 Nature Pathway, Residential Receptor Int of Port Union Rd./Sheppard Ave. & Kingston Road	1.16E-04	3.46E-04	1.59E-04	-54%	1.59E-04	-54%	0%	5.00E-05	692%	318%	317%
R 31	80 Nature Pathway, Residential Receptor Int Port Union Rd./Sheppard Ave. & Kingston Rd	1.16E-04	3.33E-04	1.60E-04	-52%	1.59E-04	-52%	-1%	5.00E-05	666%	320%	318%
R 32	Altamont Care Community, Scarborough	1.16E-04	1.72E-04	1.27E-04	-26%	1.27E-04	-26%	0%	5.00E-05	343%	253%	253%
R 33	EDUKids Child Care Centres Altona Road, Pickering	1.16E-04	2.31E-04	1.38E-04	-40%	1.38E-04	-40%	0%	5.00E-05	462%	275%	276%
R 34	The Gates Medical Centre, Pickering	1.16E-04	2.15E-04	1.35E-04	-37%	1.35E-04	-37%	0%	5.00E-05	431%	270%	270%
R 35	Residential Receptor near Rougemount Drive, Pickering	1.16E-04	2.05E-04	1.33E-04	-35%	1.33E-04	-35%	0%	5.00E-05	409%	265%	266%
R 36	Dunbarton High School - Pickering	1.16E-04	2.46E-04	1.41E-04	-43%	1.42E-04	-42%	1%	5.00E-05	493%	282%	285%
R 37	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	1.16E-04	3.94E-04	1.69E-04	-57%	1.71E-04	-57%	1%	5.00E-05	788%	337%	341%
R 38	Residential Receptor near Whites road and RR 38 Kingston Road, Pickering	1.16E-04	3.65E-04	1.62E-04	-56%	1.66E-04	-55%	2%	5.00E-05	731%	324%	331%
R 39	Stripe Mall near Whites road and RR 38 Kingston Road, Pickering	1.16E-04	2.52E-04	1.41E-04	-44%	1.43E-04	-43%	1%	5.00E-05	505%	283%	287%
R 40	Durham Drug Store Walk-In Clinic, Pickering	1.16E-04	1.89E-04	1.31E-04	-31%	1.31E-04	-30%	0%	5.00E-05	378%	262%	263%
R 41	Residential Receptor near Sheppard Ave, Pickering	1.16E-04	1.83E-04	1.30E-04	-29%	1.30E-04	-29%	0%	5.00E-05	365%	260%	260%
R 42	Bayfair Daycare, Pickering	1.16E-04	1.65E-04	1.26E-04	-24%	1.26E-04	-23%	0%	5.00E-05	331%	253%	253%
R 43	Muppets Children's Centre, Pickering	1.16E-04	1.63E-04	1.26E-04	-23%	1.26E-04	-23%	0%	5.00E-05	326%	251%	252%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	1.16E-04	1.45E-04	1.22E-04	-16%	1.22E-04	-16%	0%	5.00E-05	289%	244%	244%
R 45	Residential Receptor near Kingston Road, Pickering	1.16E-04	2.63E-04	1.43E-04	-45%	1.43E-04	-46%	-1%	5.00E-05	525%	287%	285%
R 46	Residential Receptor near RR29, Pickering	1.16E-04	2.73E-04	1.45E-04	-47%	1.45E-04	-47%	0%	5.00E-05	547%	290%	289%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	1.16E-04	2.73E-04	1.45E-04	-47%	1.45E-04	-47%	0%	5.00E-05	547%	290%	289%
R 48	Residential Receptor near RR29 and Kingston Road, Pickering	1.16E-04	2.38E-04	1.39E-04	-42%	1.39E-04	-42%	0%	5.00E-05	477%	278%	277%
R 49	Glen Grove School, Pickering	1.16E-04	2.38E-04	1.39E-04	-42%	1.40E-04	-41%	1%	5.00E-05	476%	278%	280%
R 50	VIVA Pickering Retirement Community, Pickering	1.16E-04	2.23E-04	1.36E-04	-39%	1.37E-04	-39%	1%	5.00E-05	446%	273%	274%
R 51	Community Lifecare At Home Inc - Retirement home, Pickering	1.16E-04	3.12E-04	1.52E-04	-51%	1.55E-04	-50%	2%	5.00E-05	625%	304%	310%
R 52	Little Rose Home Daycare., Pickering	1.16E-04	1.58E-04	1.24E-04	-22%	1.25E-04	-21%	0%	5.00E-05	317%	248%	249%
R 53	Residential Receptor near intersection of Kingston Road and Brook Road, Pickering	1.16E-04	3.03E-04	1.50E-04	-50%	1.54E-04	-49%	3%	5.00E-05	606%	301%	309%
R 54	Residential Receptor near Intersection of Kingston Road and Brook Road, Pickering	1.16E-04	4.30E-04	1.74E-04	-59%	1.78E-04	-59%	2%	5.00E-05	859%	349%	356%
R 55	Residential receptor near Brook Road, Pickering	1.16E-04	3.41E-04	1.55E-04	-54%	1.59E-04	-53%	2%	5.00E-05	682%	310%	318%
R 56	Alert Nursing & Home Care Svc, Pickering	1.16E-04	1.92E-04	1.30E-04	-32%	1.31E-04	-32%	1%	5.00E-05	384%	261%	263%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	1.16E-04	2.46E-04	1.42E-04	-42%	1.43E-04	-42%	1%	5.00E-05	492%	283%	285%
R 58	Receptor near Intersection of Kingston Road and Church Street, Ajax	1.16E-04	3.12E-04	1.56E-04	-50%	1.57E-04	-50%	1%	5.00E-05	623%	311%	314%
R 59	Residential Receptor near Church Street, Ajax	1.16E-04	3.37E-04	1.61E-04	-52%	1.61E-04	-52%	0%	5.00E-05	674%	322%	321%
R 60	Residential Receptor near Macey CT and Church Street, Ajax	1.16E-04	2.50E-04	1.42E-04	-43%	1.43E-04	-43%	1%	5.00E-05	500%	283%	285%
R 61	Residential Receptor near Intersection of Church Street and Kingston Road, Ajax	1.16E-04	3.03E-04	1.66E-04	-45%	1.69E-04	-44%	1%	5.00E-05	606%	333%	337%
R 62	Lincoln Avenue Public School, Ajax	1.16E-04	2.35E-04	1.38E-04	-41%	1.39E-04	-41%	1%	5.00E			

Table B-21 Annual Average B[a]P Concentrations for Existing Conditions, Future No-Build and Future Build Scenarios

Receptor	Receptor	Background	Existing Conditions (2019)	Future No-Build (2041)		2031 Future Build (2041)			Ambient Air Quality Criteria (µg/m ³)	% of the AAQC		
ID	Name	Concentration (µg/m ³)	Annual Average Concentration (µg/m ³)	Annual Average Concentration (µg/m ³)	% change from Existing Conditions	Annual Average Concentration µg/m ³	% change from Existing Conditions	% change from No-Build		Existing Conditions (2019)	Future No-Build (2041)	Future Build (2041)
R 1	Oasis Family Health Centre, Scarborough	1.01E-04	1.04E-04	1.02E-04	-2%	1.02E-04	-2%	0%	1.00E-05	1039%	1015%	1015%
R 2	Town Care Walk-in Clinic, Scarborough	1.01E-04	1.07E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1073%	1022%	1021%
R 3	Town Center Court Residential Receiver near Intersection of McCowan and Ellesmere Rd.	1.01E-04	1.61E-04	1.12E-04	-31%	1.11E-04	-31%	0%	1.00E-05	1614%	1117%	1113%
R 4	Residential Receiver near Intersection of McCowan and Ellesmere Rd., Scarborough	1.01E-04	1.26E-04	1.05E-04	-16%	1.05E-04	-16%	0%	1.00E-05	1257%	1055%	1055%
R 5	Residential Receiver near Stanwell Drive, Scarborough	1.01E-04	1.60E-04	1.12E-04	-30%	1.12E-04	-30%	0%	1.00E-05	1601%	1116%	1117%
R 6	Residential Receiver near Stoneton Dr. Scarborough	1.01E-04	1.85E-04	1.16E-04	-37%	1.16E-04	-37%	0%	1.00E-05	1853%	1161%	1163%
R 7	48 Stoneton Dr. Residential Receiver near Intersection of McCowan and Ellesmere Rd.	1.01E-04	1.60E-04	1.12E-04	-30%	1.12E-04	-30%	0%	1.00E-05	1600%	1119%	1118%
R 8	Residential receiver near Sunderland Crescent, Sunderland Crescent. Scarborough	1.01E-04	1.15E-04	1.04E-04	-10%	1.04E-04	-10%	0%	1.00E-05	1154%	1037%	1037%
R 9	Residential receiver at 32 Pendle Hill Ct., Scarborough	1.01E-04	1.23E-04	1.05E-04	-14%	1.05E-04	-14%	0%	1.00E-05	1227%	1051%	1051%
R 10	Maple Clinic- Virtual Care Clinic, Scarborough	1.01E-04	1.23E-04	1.05E-04	-14%	1.05E-04	-14%	0%	1.00E-05	1228%	1051%	1051%
R 11	Salvation Army - Social services organization, 2085 Ellesmere Rd., Scarborough	1.01E-04	1.30E-04	1.06E-04	-18%	1.06E-04	-18%	0%	1.00E-05	1297%	1063%	1062%
R 12	Residential apartment near Markham Rd., Scarborough	1.01E-04	1.52E-04	1.10E-04	-28%	1.10E-04	-28%	0%	1.00E-05	1520%	1100%	1099%
R 13	Residential apartment near Markham Rd., Scarborough	1.01E-04	1.55E-04	1.11E-04	-29%	1.10E-04	-29%	0%	1.00E-05	1554%	1106%	1104%
R 14	Residential apartment near Markham Rd., Scarborough	1.01E-04	1.66E-04	1.13E-04	-32%	1.12E-04	-33%	0%	1.00E-05	1663%	1128%	1122%
R 15	Residential Receiver near Orton Park Road, Scarborough	1.01E-04	1.16E-04	1.04E-04	-10%	1.04E-04	-10%	0%	1.00E-05	1156%	1041%	1039%
R 16	Residential receiver near Neilson Road, Scarborough	1.01E-04	1.10E-04	1.03E-04	-7%	1.03E-04	-7%	0%	1.00E-05	1103%	1030%	1029%
R 17	Residential Receiver near Morningside., Scarborough	1.01E-04	1.20E-04	1.05E-04	-12%	1.05E-04	-12%	0%	1.00E-05	1195%	1052%	1047%
R 18	Seven Oaks - Nursing home, 9 Neilson Rd., Scarborough	1.01E-04	1.07E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1073%	1024%	1023%
R 19	The Shonker Clinic, Scarborough	1.01E-04	1.05E-04	1.02E-04	-3%	1.02E-04	-3%	0%	1.00E-05	1050%	1019%	1018%
R 20	Centennial College-Morningside Campus 1	1.01E-04	1.15E-04	1.04E-04	-9%	1.04E-04	-10%	0%	1.00E-05	1148%	1041%	1038%
R 21	Instructional Centre, University of Toronto	1.01E-04	1.35E-04	1.09E-04	-19%	1.10E-04	-19%	0%	1.00E-05	1352%	1092%	1096%
R 22	N'shemahm daycare Center near Intersection of Military Trail & Ellesmere Road	1.01E-04	1.16E-04	1.05E-04	-10%	1.05E-04	-10%	0%	1.00E-05	1157%	1046%	1046%
R 23	Residential receiver near Military Trail and Military Trail & Ellesmere Road	1.01E-04	1.21E-04	1.06E-04	-12%	1.06E-04	-13%	0%	1.00E-05	1209%	1061%	1056%
R 24	Residential Receiver at Scarbel Dr., Scarborough	1.01E-04	1.16E-04	1.04E-04	-10%	1.04E-04	-10%	0%	1.00E-05	1163%	1043%	1043%
R 25	Meadowvale Public School, Primary School, Scarborough	1.01E-04	1.04E-04	1.02E-04	-2%	1.02E-04	-2%	0%	1.00E-05	1036%	1015%	1015%
R 26	Meadowvale Day Care Centre, Scarborough	1.01E-04	1.03E-04	1.02E-04	-2%	1.02E-04	-2%	0%	1.00E-05	1035%	1015%	1015%
R 27	Residential Receiver near Kingston Road, Scarborough	1.01E-04	1.12E-04	1.03E-04	-8%	1.03E-04	-8%	0%	1.00E-05	1121%	1032%	1031%
R 28	Rouge Valley Public School, Primary school	1.01E-04	1.08E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1082%	1024%	1023%
R 29	Scarborough Rouge Valley YMCA Child Care Centre	1.01E-04	1.08E-04	1.02E-04	-6%	1.02E-04	-6%	0%	1.00E-05	1084%	1024%	1024%
R 30	81 Nature Pathway, Residential Receiver Int of Port Union Rd./Sheppard Ave. & Kingston Rd	1.01E-04	1.75E-04	1.15E-04	-34%	1.15E-04	-34%	0%	1.00E-05	1749%	1148%	1147%
R 31	80 Nature Pathway, Residential Receiver Int Port Union Rd./Sheppard Ave. & Kingston Rd	1.01E-04	1.52E-04	1.11E-04	-27%	1.11E-04	-27%	0%	1.00E-05	1524%	1109%	1108%
R 32	Altamont Care Community, Scarborough	1.01E-04	1.09E-04	1.02E-04	-6%	1.02E-04	-6%	0%	1.00E-05	1089%	1025%	1025%
R 33	EDUKids Child Care Centres Altona Road, Pickering	1.01E-04	1.24E-04	1.05E-04	-15%	1.05E-04	-15%	0%	1.00E-05	1240%	1053%	1054%
R 34	The Gates Medical Centre, Pickering	1.01E-04	1.19E-04	1.04E-04	-12%	1.04E-04	-12%	0%	1.00E-05	1191%	1044%	1045%
R 35	Residential Receiver near Rougemount Drive, Pickering	1.01E-04	1.21E-04	1.05E-04	-14%	1.05E-04	-14%	0%	1.00E-05	1215%	1048%	1049%
R 36	Dunbarton HS - Pickering	1.01E-04	1.18E-04	1.04E-04	-12%	1.04E-04	-11%	0%	1.00E-05	1177%	1041%	1043%
R 37	Residential Receiver near Whites road and RR 38 KINGSTON Road, Pickering	1.01E-04	1.75E-04	1.15E-04	-35%	1.15E-04	-34%	1%	1.00E-05	1751%	1145%	1153%
R 38	Residential Receiver near Whites road and RR 38 KINGSTON Road, Pickering	1.01E-04	1.83E-04	1.16E-04	-37%	1.17E-04	-36%	1%	1.00E-05	1833%	1157%	1166%
R 39	Stripe Mall near Whites road and RR 38 KINGSTON Road, Pickering	1.01E-04	1.41E-04	1.08E-04	-23%	1.09E-04	-22%	1%	1.00E-05	1406%	1083%	1091%
R 40	Durham Drug Store Walk-In Clinic, Pickering	1.01E-04	1.11E-04	1.03E-04	-7%	1.03E-04	-7%	0%	1.00E-05	1113%	1030%	1031%
R 41	Residential Receiver near Sheppard Ave, Pickering	1.01E-04	1.10E-04	1.03E-04	-6%	1.03E-04	-6%	0%	1.00E-05	1097%	1028%	1028%
R 42	Bayfair Daycare, Pickering	1.01E-04	1.19E-04	1.05E-04	-12%	1.05E-04	-12%	0%	1.00E-05	1187%	1047%	1047%
R 43	Muppets Children's Centre, Pickering	1.01E-04	1.06E-04	1.02E-04	-4%	1.02E-04	-4%	0%	1.00E-05	1060%	1020%	1020%
R 44	Central Pickering Comprehensive Urgent Care Clinic, Pickering	1.01E-04	1.08E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1078%	1024%	1024%
R 45	Residential Receiver near KINGSTON Road, Pickering	1.01E-04	1.23E-04	1.05E-04	-14%	1.05E-04	-15%	0%	1.00E-05	1228%	1051%	1050%
R 46	Residential Receiver near RR29, Pickering	1.01E-04	1.39E-04	1.08E-04	-22%	1.07E-04	-23%	0%	1.00E-05	1389%	1078%	1073%
R 47	EDUKids Child Care Centres Discovery Place Child Care, Pickering	1.01E-04	1.39E-04	1.08E-04	-23%	1.07E-04	-23%	0%	1.00E-05	1393%	1079%	1074%
R 48	Residential Receiver near RR29 and KINGSTON Road, Pickering	1.01E-04	1.44E-04	1.09E-04	-24%	1.09E-04	-24%	0%	1.00E-05	1436%	1092%	1090%
R 49	Glen Grove School, Pickering	1.01E-04	1.07E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1071%	1022%	1022%
R 50	VIVA Pickering Retirement Community, Pickering	1.01E-04	1.20E-04	1.05E-04	-13%	1.05E-04	-13%	0%	1.00E-05	1202%	1047%	1047%
R 51	Community Lifecare At Home Inc - Retirement home., Pickering	1.01E-04	1.07E-04	1.02E-04	-5%	1.02E-04	-5%	0%	1.00E-05	1070%	1021%	1022%
R 52	Little Rose Home Daycare., Pickering	1.01E-04	1.10E-04	1.03E-04	-6%	1.03E-04	-6%	0%	1.00E-05	1095%	1026%	1026%
R 53	Residential Receiver near intersection of Kingston Road and Brook Road, Pickering	1.01E-04	1.48E-04	1.10E-04	-26%	1.10E-04	-26%	0%	1.00E-05	1481%	1086%	1102%
R 54	Residential Receiver near intersection of Kingston Road and Block Road, Pickering	1.01E-04	1.86E-04	1.16E-04	-37%	1.17E-04	-37%	1%	1.00E-05	1859%	1162%	1170%
R 55	Residential Receiver near Brook Road, Pickering	1.01E-04	1.63E-04	1.12E-04	-31%	1.13E-04	-30%	1%	1.00E-05	1629%	1123%	1133%
R 56	Alert Nursing & Home Care Svc., Pickering	1.01E-04	1.10E-04	1.03E-04	-7%	1.03E-04	-7%	0%	1.00E-05	1098%	1026%	1026%
R 57	EDUKids Child Care Centres St Georges Daycare, Ajax	1.01E-04	1.18E-04	1.04E-04	-12%	1.04E-04	-12%	0%	1.00E-05	1185%	1042%	1042%
R 58	Air Sensitive near Kingston Road and Church Street, Ajax	1.01E-04	1.59E-04	1.12E-04	-30%	1.12E-04	-30%	0%	1.00E-05	1591%	1117%	1117%
R 59	Residential Receiver near Church Street, Ajax	1.01E-04	1.36E-04	1.08E-04	-21%	1.06E-04	-22%	-1%	1.00E-05	1360%	1075%	1065%
R 60	Residential Receiver near Macey CT and Church Street, Ajax	1.01E-04	1.21E-04	1.05E-04	-13%	1.05E-04	-13%	0%	1.00E-05	1207%	1047%	1045%
R 61	Residential Receiver near Church Street and Kingston Road, Ajax	1.01E-04	1.60E-04	1.15E-04	-28%	1.14E-04	-29%	-1%	1.00E-05	1600%	1150%	1141%
R 62	Lincoln Avenue Public School, Ajax	1.01E-04	1.10E-04	1.03E-04	-6%	1.03E-04	-6%	0%	1.00E-05	1101%	1032%	1032%
R 63	Residential Receiver near WestneyRd., Ajax	1.01E-04	1.39E-04	1.08E-04	-22%	1.08E-04	-22%	0%	1.00E-05	1388%	1078%	1077%
R 64	Residential Receiver near Durham Street, Ajax	1.01E-04	1.38E-04	1.08E-04	-22%	1.08E-04	-22%	0%	1.00E-05	1381%	1077%	1075%
R 65	Residential Receiver near Durham street, Ajax	1.01E-04	1.53E-04	1.10E-04	-28%	1.10E-04	-28%	0%	1.00E-05	1525%	1101%	1099%
R 66	Residential Receiver near Durham street and Patterson CT., Ajax	1.01E-04	1.364E-04	1.074E-04	-21%	1.072E-04	-21%	0%	1.00E-05	1364%	1074%	1072%
R 67	Westney Heights Medical Centre, Ajax	1.01E-04	1.338E-04	1.068E-04	-20%	1.067E-04	-20%	0%	1.00E-05	1336%	1068%	1067%
R 68	Kingston Medical Clinic & Pharmacy, Ajax	1.01E-04	1.170E-04	1.040E-04	-11%	1.040E-04	-11%	0%	1.00E-05	1170%	1040%	1040%
R 69	Residential Receiver near Lovngrove Ln., Ajax	1.01E-04	1.349E-04	1.069E-04	-21%	1.069E-04	-21%	0%	1.00E-05	1349%	1069%	1069%
R 70	Residential Receiver near Regional Highway 2, Ajax	1.01E-04	1.758E-04	1.140E-04	-35%	1.148E-04	-35%	1%	1.00E-05	1758%	1140%	1148%
R 71	Residential Receiver near Salem Road., Ajax	1.01E-04	1.763E-04	1.142E-04	-35%	1.138E-04	-35%	0%	1.00E-05	1763%	1142%	1138%
R 72	Residential Receiver Martinworth Lane, Ajax	1.01E-04	1.128E-04	1.031E-04	-9%	1.058E-04	-6%	3%	1.00E-05	1128%	1031%	1058%
R 73	Residential Receiver near Lake Ridge Road, Whitby	1.01E-04	1.085E-04	1.024E-04	-6%	1.040E-04	-4%	2%	1.00E-05	1085%	1024%	1040%
R 74	Residential Receiver Bluebell Crescent, Whitby	1.01E-04	1.199E-04	1.047E-04	-13%	1.047E-04	-13%	0%	1.00E-05	1199%	1047%	1047%
R 75	Saint Marguerite d'Youville Catholic School - Elementary school, Whitby	1.01E-04	1.078E-04	1.023E-04	-5%	1.023E-04	-5%	0%	1.00E-05	1076%	1023%	1023%
R 76	Fairview Lodge, Nursing home, Whitby	1.01E-04	1.273E-04	1.058E-04	-17%	1.058E-04	-17%	0%	1.00E-05	1273%	1058%	1056%
R 77	Kids & Company, Whitby	1.01E-04	1.070E-04	1.021E-04	-5%	1.021E-04	-5%	0%	1.00E-05	1070%	1021%	1021%
R 78	MyHealth Centre, Whitby	1.01E-04	1.300E-04	1.062E-04	-18%	1.060E-04	-18%	0%	1.00E-05	1300%	1062%	1060%
R 79	East Whitby Clinic - Medical Clinic, Whitby	1.01E-04	1.065E-04	1.020E-04	-4%	1.020E-04	-4%	0%	1.00E-05	1065%	1020%	1020%
R 80	Durham Montessori School & Daycare, Whitby	1.01E-04	1.086E-04	1.024E-04	-6%	1.023E-04	-6%	0%	1.00E-05	1086%	1024%	1023%
R 81	Perry House Child Care Services, Whitby	1.01E-04	1.113E-04	1.027E-04	-8%	1.027E-04	-8%	0%	1.00E-05	1113%	1029%	1027%
R 82	Blyth Academy Whitby - Private school, Whitby	1.01E-04	1.214E-04	1.047E-04	-14%	1.044E-04	-14%	0%	1.00E-05	1214%	1047%	1044%
R 83	Residential Receiver near Garden Street, Whitby	1.01E-04	1.541E-04	1.104E-04	-28%	1.096E-04	-29%	-1%	1.00E-05	1541%	1104%	1096%
R 84	Residential Receiver near Garden Street, Whitby	1.01E-04	1.456E-04	1.090E-04	-25%	1.089E-04	-25%	0%	1.00E-05	1456%	1090%	1089%
R 85	Residential Receiver near Garden Street, Whitby	1.01E-04	1.499E-04	1.099E-04	-27%	1.099E-04	-27%	0%	1.00E-05	1499%	1099%	1099%
R 86	Residential Receiver near Garden Street, Whitby	1.01E-04	1.474E-04	1.082E-04	-26%	1.088E-04	-26%	0%</				

Table B-22: 2019 Baseline - Predicted Maximum Pollutant Concentrations

Pollutant	Average Period	Ambient background Concentration	Maximum Modelled Concentration	Cumulative Concentration	Location of Maximum Concentration	Ontario's Ambient Air Quality Criteria/Canadian Ambient Air Quality Standards	Percentage of Ontario's Ambient Air Quality Criteria
		(µg/m ³)	(µg/m ³)	(µg/m ³)	[X m, Y m]	(µg/m ³)	(µg/m ³)
NO ₂	1-hr	59	90.6	150	654750, 4856855	79	189%
	24-hr	49	12.9	61	654750, 4856855	200	31%
	Annual	32	3.5	36	654750, 4856855	23	158%
CO	1-hr	458	929	1387	656165, 4857488	36200	4%
	8-hr	458	320	778	651540, 4853601	15700	5%
SO ₂	1-hr	4.7	2.47	7.2	654122, 4856563	170	4%
	24-hr	4.7	0.30	5.0	654750, 4856855	275	2%
	Annual	2.6	0.07	2.7	654750, 4856855	10	27%
PM ₁₀	24-hr	30.0	9.5	39	654750, 4856855	50.0	78%
PM _{2.5}	24-hr	16.0	4.1	20.1	654750, 4856855	27.0	74%
	Annual	9.0	0.9	9.9	670939, 4862628	8.8	112%
Acetaldehyde	24-hr	2.0	0.066	2.1	654750, 4856855	500	0.4%
Acrolein	1-hr	0.072	0.035	0.107	654122, 4856563	4.500	2%
	24-hr	0.072	0.005	0.077	654750, 4856855	0.400	19%
Benzene	24-hr	0.82	0.15	0.97	654750, 4856855	2.30	42%
	Annual	0.5	0.04	0.51	654750, 4856855	0.45	113%
Benzo(a)pyrene	24-hr	1.160E-04	0.000314	0.00043	654750, 4856855	0.00005	859%
	Annual	1.010E-04	0.000085	0.00019	654750, 4856855	0.00001	1859%
Formaldehyde	24-hr	2.8	0.08	2.9	654750, 4856855	65	4%
1,3-Butadiene	24-hr	0.062	0.011	0.07	654750, 4856855	10	1%
	Annual	0.033	0.003	0.036	654750, 4856855	2	2%

Notes:

- The CAL3QHCRC model was run for five years of meteorological data to determine maximum contaminant concentrations at the selected sensitive receptor locations
- Ozone Limiting Method (OLM) was used to estimate the NO₂ concentrations resulting from emissions of NO_x.
- Concentration exceeds the Air Quality Criteria are shown in red

Table B-23: 2041 No Build Scenario - Predicted Maximum Pollutant Concentrations

Pollutant	Average Period	Ambient background Concentration	Maximum Modelled Concentration	Cumulative Concentration	Location of Maximum Concentration	Ontario's Ambient Air Quality Criteria/Canadian Ambient Air Quality Standards	Percentage of Ontario's Ambient Air Quality Criteria
		(µg/m ³)	(µg/m ³)	(µg/m ³)	[X m, Y m]	(µg/m ³)	(µg/m ³)
NO ₂	1-hr	59	25.4	84	656165, 4857488	79	107%
	24-hr	49	2.6	51	654750, 4856855	200	26%
	Annual	32	0.7	33	654750, 4856855	23	145%
CO	1-hr	458	375	833	656165, 4857488	36200	2%
	8-hr	458	114	572	651540, 4853601	15700	4%
SO ₂	1-hr	4.7	1.73	6	640267, 4847870	170	4%
	24-hr	4.7	0.19	5	654750, 4856855	275	2%
	Annual	2.6	0.05	3	654750, 4856855	10	27%
PM ₁₀	24-hr	30.0	2.9	33	645705, 4849772	50.0	65%
PM _{2.5}	24-hr	16.0	0.5	16.5	654750, 4856855	27.0	61%
	Annual	9.0	0.1	9.1	654750, 4856855	8.8	103%
Acetaldehyde	24-hr	2.0	0.011	2.011	645705, 4849772	500	0.40%
Acrolein	1-hr	0.072	0.012	0.084	640267, 4847870	4.500	2%
	24-hr	0.072	0.002	0.074	654750, 4856855	0.400	18%
Benzene	24-hr	0.82	0.06	0.87	654750, 4856855	2.30	38%
	Annual	0.5	0.02	0.49	654750, 4856855	0.45	108%
Benzo(a)pyrene	24-hr	1.160E-04	0.000058	0.000174	654750, 4856855	0.00005	349%
	Annual	1.010E-04	0.000019	0.000120	654750, 4856855	0.00001	1199%
Formaldehyde	24-hr	2.8	0.03	2.8	654750, 4856855	65	4%
1,3-Butadiene	24-hr	0.062	0.00004	0.06	654750, 4856855	10	1%
	Annual	0.033	0.00001	0.033	649108, 4851275	2	2%

Notes:

- The CAL3QHCR model was run for five years of meteorological data to determine maximum contaminant concentrations at the selected sensitive receptor locations
- Ozone Limiting Method (OLM) was used to estimate the NO₂ concentrations resulting from emissions of NO_x.
- Concentration exceeds the Air Quality Criteria are shown in red

Table B-24: 2041 Build Scenario - Predicted Maximum Concentrations

Pollutant	Average Period	Ambient background Concentration (µg/m3)	Maximum Modelled Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Location of Predicted Maximum Concentration [X m, Y m]	Ontario's Ambient Air Quality Criteria/Canadian Ambient Air Quality Standards (µg/m3)	Percentage of Ontario's Ambient Air Quality Criteria (µg/m3)
NO ₂	1-hr	59	35.4	94	656165, 4857488	79	119%
	24-hr	49	3.3	52	656304, 4857578	200	26%
	Annual	32	0.8	33	654750, 4856855	23	146%
CO	1-hr	458	393	851	656165, 4857488	36200	2%
	8-hr	458	126	584	654750, 4856855	15700	4%
SO ₂	1-hr	4.7	1.87	7	654122, 4856563	170	4%
	24-hr	4.7	0.22	5	654750, 4856855	275	2%
	Annual	2.6	0.07	3	654750, 4856855	10	27%
PM ₁₀	24-hr	30.0	7.0	37	656165, 4857488	50.0	73%
PM _{2.5}	24-hr	16.0	1.6	17.6	656304, 4857578	27.0	65%
	Annual	9.0	0.2	9.2	656165, 4857488	8.8	105%
Acetaldehyde	24-hr	2.0	0.014	2.014	654750, 4856855	500	0.40%
Acrolein	1-hr	0.072	0.016	0.088	654122, 4856563	4.500	2%
	24-hr	0.072	0.002	0.074	645705, 4849772	0.400	18%
Benzene	24-hr	0.82	0.07	0.89	654750, 4856855	2.30	39%
	Annual	0.5	0.02	0.49	654750, 4856855	0.45	108%
Benzo(a)pyrene	24-hr	1.160E-04	0.000062	0.000178	654750, 4856855	0.00005	356%
	Annual	1.010E-04	0.000019	0.000120	654750, 4856855	0.00001	1199%
Formaldehyde	24-hr	2.8	0.03	2.8	645705, 4849772	65	4%
1,3-Butadiene	24-hr	0.062	0.00007	0.06	645705, 4849772	10	1%
	Annual	0.033	0.00001	0.026	659493, 4858595	2	2%

Notes:

- The CAL3QHCRC model was run for five years of meteorological data to determine maximum contaminant concentrations at the selected sensitive receptor locations
- Ozone Limiting Method (OLM) was used to estimate the NO₂ concentrations resulting from emissions of NO_x.
- Concentration exceeds the Air Quality Criteria are shown in red

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