MEMORANDUM

TO Willie Macrae **DATE** June 8, 2016

CC Danny da Silva, Anthony Ciccone, Katie Armstrong

FROM Stefan Cicak **PROJECT No.** 1525228

CITY OF TORONTO LOWER YONGE PRECINCT - PHASE 3 - MODELLING, MAPPING, ANALYSIS OF FUTURE DEVELOPMENT CONCEPTS

1.0 INTRODUCTION

Golder Associates Ltd. (Golder) has been retained by the City of Toronto (City) to support the development of a precinct plan for the Lower Yonge Precinct (LYP) by conducting a Noise, Odour & Air Quality Assessment (NOAQA). A precinct plan is carried out at the policy planning stage and provides a planning framework with guidelines to allow for the comprehensive and orderly development of lands. For the NOAQA, a high-level evaluation was considered more appropriate to assist in the policy planning of the LYP, knowing that detailed assessments will be required for any proposed development to go forward before actually being developed. Golder's opinion is this high level evaluation is sufficient to develop a general understanding of noise, odour and air quality within the LYP.

The LYP is comprised of former industrial lands within the Central Waterfront and is designated as a *Regeneration Area* in the Council approved version of the Central Waterfront Secondary Plan (Currently under review by the Ontario Municipal Board). The objective of the NOAQA is to assist City staff in evaluating impacts from the Redpath Sugar Refinery (Redpath) operations on the proposed land use within the LYP which includes new sensitive land uses, as identified in two different future land use/ built form scenarios. The NOAQA will address the following:

- quantify the noise and air emissions (including odour) from both Redpath's operations and adjacent transportation corridors, at appropriate Points of Reception (PORs) to assess the feasibility of introducing sensitive uses within the LYP;
- evaluate the feasibility of the two proposed land use/built form scenarios for the LYP and whether there are any unacceptable noise, odour and air quality impacts; and
- identify noise, odour and air quality management practices to mitigate or eliminate potential conflicts between future sensitive uses and Redpath's industrial uses.

The scope of work for this NOAQA has been separated out into four phases as outlined below:

- Phase 1: Background review, existing conditions research and data collection;
- Phase 2: Modelling, mapping, analysis of existing conditions;
- Phase 3: Update Phase 2 modelling and mapping with the two proposed future built forms; and
- Phase 4: Finalizing the NOAQA study and meetings.

To carry out this scope of work with sufficient detail and to help the City make informed decisions for the policy planning for the LYP, it was necessary for Golder to enter into a Non-Disclosure Agreement (NDA) with Redpath. This NDA essentially allowed: (1) Golder to obtain the latest noise, air quality and odour modelling files from Redpath, (2) it outlined a review process in which Redpath's legal counsel, Stikeman Elliot, and consultants AMEC Foster Wheeler PLC (AMEC) and Valcoustics Canada Ltd. (Valcoustics) reviewed this document prior to it being released to the City and (3) it defined the level of information permitted to be included regarding Redpath's operations. This document and associated figures objective is to provide the City with useful information without disclosing specifics identified in the NDA.

2.0 PROPOSED LOWER YONGE PRECINCT FUTURE BUILT FORMS

The City originally provided two proposed built form concepts, Scenario A and Scenario B, within the LYP for assessment as part of the NOAQA. Through discussions with the City, these two original built forms were modified to account for potential additional buildings and layout arrangements. These modified built forms are identified in this memo as Scenario A V2 and Scenario B V2 (Proposed Built Form Scenarios). Buildings within each Proposed Built Form Scenario were identified as either comprising of Sensitive or Non-Sensitive Land Uses. For the purposes of the NOAQA, Sensitive Land Use is described as a Sensitive Receptor Location defined in the *Air Dispersion Modelling Guideline for Ontario* and/or Noise Sensitive Space defined in *NPC-300 Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning* (NPC 300). In addition, the existing Toronto Star building was included within the LYP as per its existing built form and addressed accordingly in the noise, odour or air quality assessments. The Proposed Built Form Scenario's within the LYP and respective land use for each building are presented in Figures 1 and 2.

3.0 NOISE

3.1 Assessment Methodology

The noise assessment for the NOAQA focused on the following;

- quantify the noise emissions from both Redpath's operations as provided by Valcoustics and key adjacent transportation corridors, at appropriate PORs to assess the feasibility of introducing Sensitive Land Uses within the LYP;
- evaluate the feasibility of two proposed land use/built form scenarios for the LYP and whether there are any unacceptable noise impacts; and
- identify noise management practices to mitigate or eliminate potential conflicts between future Sensitive Land Uses and Redpath's industrial uses.

Golder prepared a noise prediction model to quantify the noise levels within the LYP associated with the Redpath facility and adjacent transportation corridors. The noise model was developed using the latest existing noise prediction model of Redpath's operations as provided by Valcoustics, in CadnaA format (i.e., Filename *2015-07-30 Redpath Updated Source Model.cna*). Valcoustics indicated this model is for current sources, accounting for increases in production to the approved future full capacity, and therefore it reflects both the present and foreseeable future scenarios. Furthermore, the single A-Frame Colby Crane, identified as the only impulsive noise source from Redpath's operations as late as the end of 2014, has been removed from Redpaths operations, which is reflected in the CadnaA noise prediction model provided by Valcoustics. Therefore, no impulsive noise sources associated with Redpath's operations were considered for the NOAQA.

Upon review of the adjacent transportation corridors, road traffic (i.e., automobiles and trucks) was considered the dominant noise source. Other transportation sources such as railway and streetcars identified and included in other assessments in the vicinity of LYP were not included. Based on Golder's experience with other developments along the Gardiner Expressway, the road network is the dominant transportation noise source surrounding the LYP. Road traffic data was predicted to the year 2025 with assumptions on vehicle breakdown and expected annual growth. A combination of publicly available City of Toronto data and road traffic data presented in the *Novus Environmental Report – Environmental Noise and Vibration Assessment 130-132 Queens Quay East Toronto, Ontario dated September 30, 2014* (The Daniels Corporation Phase 1 Development) and *Novus Environmental Report – Environmental Noise and Vibration Assessment Proposed 1 Yonge Street Mixed Use Development Toronto, ON dated April 3, 2013* (Mondiale Yonge St Development). The road traffic was integrated into the noise prediction model provided by Valcoustics, maintaining the model setup already used to assess Redpath's operations, which Golder understands reflects the *Hybrid Matrix/NPC-300 – Evaluation Method and Matrix of Design Features, Dated May 15, 2014 For Development of Lands in the East Bayfront Precinct (the "Matrix")* (Hybrid Matrix) requirements. PORs were identified at each proposed building within the LYP, at each storey estimated at 3 m intervals, along each building façade. Only those PORs located on buildings considered Sensitive Land Use were further evaluated. Outdoor Living Areas (OLAs) were not presented in the Proposed Built Form Scenarios and therefore not assessed at this time.

To evaluate the feasibility with respect to noise of the Proposed Built Form Scenarios for the LYP, the following two indicators were considered:

1) Ability for the stationary sources associated with Redpath's operations, to maintain their existing ECA Approval with the introduction of new PORs within the LYP, specifically the exceedance in noise level between Redpath's operations and existing background noise levels. Both a Class 1 and Class 4 designation as described in NPC 300 were investigated.

2) Ability for the Proposed Built Form Scenarios to be designed from a land use perspective, in general accordance with NPC 300, to address noise due to road traffic.

According to NPC-300 Part C, the MOECC has no authority under the Planning Act regarding the land use planning approval process and that their primary role is to issue approvals required by the EPA. Throughout NPC-300, it is specified that guidance be obtained from the land use planning authority and states it is the land use planning authority who is responsible for the land use planning process. Therefore, feasibility and/or detailed noise impact studies should be submitted to the land use planning authority. In addition, Part C of NPC-300 states the purpose of a noise study is to assess the impact of all noise sources affecting the proposed sensitive land use but focuses only on stationary and transportation sources of noise. The objectives of noise studies carried out as part of the land use planning approval process are as follows;

1) to create a suitable acoustical environment for the protection of users/occupants/residents of the proposed noise sensitive land uses;

2) to protect the lawful operation of any stationary sources(s) located close to a proposed noise sensitive land use (stationary sources need to be able to maintain compliance with legal requirements of their MOECC approval, when the development of new noise sensitive land uses are introduced in their proximity);

3) to protect existing and/or formally approved transportation corridors and transportation sources of noise when the development of new noise sensitive land uses are introduced in their proximity; and

4) to create compatible land uses and avoid potential adverse effects due to noise.

The proponent of a new noise sensitive land use is identified in NPC-300 as being responsible for ensuring compliance with the applicable sound level limits and the following:

1) determining the feasibility of the project;

2) assessing outdoor and indoor acoustical environments, as appropriate;

3) investigation of feasible means of noise impact mitigation;

4) ensuring that the required noise control measures are incorporated in the development; and

5) describing the technical details and clarifying the responsibility for the implementation and maintenance, of required noise control measures.

The objectives of NPC-300 within the land use planning process are similar to those presented in the Central Waterfront Secondary Plan (CWSP) Policy 51 and Ontario Ministry of Municipal Affairs and Housing Provincial Policy Statement dated April 30, 2014 (PPS) as it relates to facilities such as Redpath. Both the CWSP and PPS essentially state adverse effects on the new noise sensitive land use or Redpath are to be prevented or mitigated such that compatibility is achieved but also maintained allowing them to coexist.

Through discussions with Redpath's legal counsel, Stikeman Elliot, Golder understands the Hybrid Matrix was the result of lengthy negotiations with the Ontario Ministry of Environment and Climate Change (MOECC) specifically for the East Bayfront Precinct only, which is located directly east of LYP. For the Hybrid Matrix to be accepted elsewhere would require MOECC approval and the likelihood of MOECC approval in a reasonable amount of time is considered to be unlikely because the individuals at the MOECC who took part in the negotiations are no longer there. The Hybrid Matrix is a document that describes the evaluation method and associated matrix of design features for receptor-based noise mitigation on specific lands within the East Bayfront Precinct where sensitive land uses are proposed within it. When potential noise excess due to Redpath is addressed with receptor-based mitigation in accordance to the Hybrid Matrix, the excess predicted at the receptor will no longer be considered excessed when assessing compliance by Redpath. Furthermore, it is Golder's opinion the Sound Transmission Class (STC) Ratings presented in the Hybrid Matrix for the different noise levels are reasonable and therefore used for the purposes of this NOAQA to indicate the level of noise mitigation that is expected for the Proposed Build Form Scenarios.

Therefore for both indicators, the design and evaluation parameters presented in NPC 300 and the Hybrid Matrix were applied accordingly to evaluate the feasibility of the Proposed Built Form Scenarios with respect to noise. For permitting, *Table 1: Matrix of Receptor-Based Design Features versus Predicted Degree of Excess* from the Hybrid Matrix was applied to define the excess in noise level intervals relative to the appropriate sound level limits in NPC 300. When evaluating a Class 1 and Class 4 designation, a minimum sound level limit as described in Section B of NPC 300 was applied when background sound levels due to road traffic were below their respective exclusionary sound level limits. For land use, the 80% window to floor area for Living Room Windows and Bedroom Windows presented in *Table 2: Minimum Windows STC Look-up Table – Non-Impulsive Sources Including Ship Manoeuvring and Berthing Noise From Redpath (Ship Power, Tug Boat Activity)* were applied to the daytime and nighttime periods respectively to define the ranges in Window STC Ratings for the respective noise level intervals.

Furthermore, it is Golder's understanding that Redpath has carried out all the necessary noise and air quality mitigation, both to its equipment and administrative controls such that it continues to comply with noise guidelines and air quality regulations. Therefore, only receptor based noise mitigation was further investigated which is only considered acceptable under a Class 4 designation for the LYP. Source based mitigation measures would be required under a Class 1 designation which was not considered as part of the NOAQA. Should the City decide to not designate the LYP as Class 4, there is no mechanism to allow for receptor based mitigation under NPC 300 for a Class 1 area which will result in non-compliance for Redpath operations. As discussed above, the proponent of a new noise sensitive land use is identified in NPC-300 as being responsible for ensuring compliance with the applicable sound level limits and essentially ensuring compatibility is achieved and maintained to allow for Redpath and the new noise sensitive land use to coexist.

3.2 Results

Predicted noise level contours for each Proposed Built Form Scenario, in accordance with the Assessment Methodology described above, are shown in Figures 3 to 10 and listed below:

- Figure 3: Predicted Noise Levels – Permitting – Scenario A – Class 1 Nighttime
- Figure 4: Predicted Noise Levels – Permitting – Scenario A – Class 4 Nighttime
- Figure 5: Predicted Noise Levels – Permitting – Scenario B – Class 1 Nighttime
- Figure 6: Predicted Noise Levels – Permitting – Scenario B – Class 4 Nighttime
- Figure 7: Predicted Noise Levels – Land Use – Road Traffic Only – Scenario A – Nighttime
- Figure 8: Predicted Noise Levels – Land Use – Road Traffic Only – Scenario A – Daytime
- Figure 9: Predicted Noise Levels – Land Use – Road Traffic Only – Scenario B – Nighttime
- Figure 10: Predicted Noise Levels – Land Use – Road Traffic Only – Scenario B – Daytime

3.2.1 Redpath Permitting

Figures 3 to 6 describe the noise levels associated with Redpath's operations within the LYP based on Class 1 or Class 4 designations as described in NPC 300. Table 1 below summarizes the different noise level exceedances intervals considered and the respective noise mitigation required.

Table 1: Permitting Noise Mitigation Requirements - Exceedance in Noise Levels (dB)

Exceedance in Noise Level (dB)	Colour Scheme	Mitigation Required*
<0	Grey	Enclosed Noise Buffer
0 <x ≤ 5.0	Orange	
5.0 <x ≤ 10.0	Yellow	
10.0 <x ≤ 15.0	Green	
>15.0	Blue	

* Receptor based noise mitigation is only considered acceptable under a Class 4 designation for the LYP. Source based mitigation measures would be required under a Class 1 designation which was not considered as part of the NOAQA.

3.2.2 Land Use Compatibility

Figures 7 to 10 describe the noise levels associated with road traffic surrounding the LYP. Table 2 and Table 3 below summarize the road traffic noise level intervals considered and their respective level of noise mitigation required for the building facade (i.e., STC Rating) during the daytime and nighttime periods.

Table 2: Land Use Noise Mitigation Requirements - Road Traffic Daytime Noise Levels (dBA)

Noise Level (dBA)	Colour Scheme	Level of Mitigation Required	Building Façade STC Requirement
0 <x ≤ 61.0	Orange	Level 1 Mitigation Required (Lowest)	STC ≤ 35
61.0 <x ≤ 64.0	Yellow	Level 2 Mitigation Required	35 <STC ≤ 38
>64.0	Green	Level 3 Mitigation Required (Highest)	STC >38

Table 3: Land Use Noise Mitigation Requirements - Road Traffic Nighttime Noise Levels (dBA)

Noise Level (dBA)	Colour Scheme	Level of Mitigation Required	Building Façade STC Requirement
0 <x ≤ 56.0	Orange	Level 1 Mitigation Required (Lowest)	STC ≤ 35
56.0 <x ≤ 59.0	Yellow	Level 2 Mitigation Required	35 <STC ≤ 38
>59.0	Green	Level 3 Mitigation Required (Highest)	STC >38

3.3 Discussion

The results of the noise assessment indicate the Proposed Build Form Scenarios are feasible in accordance with NPC 300, provided appropriate noise control measures are implemented to address both stationary and transportation sources and that the LYP is designated as a Class 4 area. The evaluation of noise due to transportation and stationary sources focused on Redpath and the adjacent road network respectively. It will be important for potential developers to understand the reasoning and requirements for noise mitigation measures, specifically the receptor based mitigation to allow for Redpath's operations to maintain their existing ECA Approval. The detailed design and evaluation of the noise mitigation measures will need to be verified with a detailed noise assessment.

3.3.1 Redpath Permitting

Figures 3 to 6 indicate that Redpath's operations will exceed sound level limits in some areas within the LYP based on Class 1 or Class 4 designations as described in NPC 300. The higher noise level exceedances at PORs (i.e., only considered for Sensitive Land Uses) due to Redpath operations, occur primarily in the southeastern areas of the proposed Sensitive Land Use buildings in the LYP. Note, the highest noise level exceedances within the LYP occur at the Non-Sensitive Land uses adjacent to Redpath but as described above in Section 2.0, noise sensitive spaces, as defined in NPC 300, will not be permitted within these areas. In addition, Scenario B V2 identifies more areas with higher noise level exceedances than Scenario A V2. Furthermore, the results for a Class 4 designation indicate that the degree of noise control measures required is reduced relative to a Class 1 designation, which is expected, since the sound level limits for Class 1 are lower than Class 4.

As previously mentioned, in identifying potential noise control measures required to ensure that Redpath remains in compliance with its ECA, Golder only considered receptor based mitigation in the form of enclosed noise buffers as part of the NOAQA. Receptor mitigation is only considered acceptable under a Class 4 designation for the LYP but not allowed under a Class 1 designation. Should the City decide to not designate the LYP as Class 4, there is no mechanism to allow for receptor based mitigation under NPC 300 for a Class 1 area which will result in non-compliance for Redpath operations. The designation of the LYP as Class 4 and the implementation of enclosed noise buffers in the areas where exceedances are indicated on Figures 3 to 6, will allow the Redpath facility to comply with MOECC noise guidelines. NPC 300 describes an *Enclosed Noise Buffer* as follows:

> *"Enclosed noise buffer" - An enclosed area outside the exterior wall of a building such as an enclosed balcony specifically intended to buffer one or more windows of noise sensitive spaces. In order for the concept of enclosed noise buffer to be acceptable within the context of an MOECC approval of stationary sources, it can only apply to high-rise multi-unit buildings in a Class 4 area. The characteristics of an enclosed noise buffer are listed below:*
>
> - *not less than one metre and not more than two metres deep;*
> - *fully enclosed with floor to ceiling glazing or a combination of solid parapet plus glazing above – glazing can potentially be operable to the maximum permitted by the Ontario Building Code;*
> - *separated from interior space with a weatherproof boundary of exterior grade wall, exterior grade window, exterior grade door, or any combination, in compliance with exterior envelope requirements of the Ontario Building Code;*
> - *of sufficient horizontal extent to protect windows of noise sensitive spaces; and*
> - *the architectural design is not amenable to converting the enclosed space to being noise sensitive.*

In addition, the definition of a POR in NPC 300 includes the plane of windows on the façade of a dwelling inside the enclosed noise buffer but not the plane of windows of the enclosed noise buffer.

3.3.2 Land Use Compatibility

Figures 7 to 10 indicate the buildings within the LYP will need to implement noise mitigation measures to meet the requirements of NPC 300 to address noise due to road traffic. The highest noise levels at PORs are experienced along the northern area of the LYP due to the road traffic along the Gardiner Expressway. Road traffic then continues to generate noise levels that will require noise mitigation to minimize their effects across the entire LYP.

Noise mitigation measures for transportation noise will involve the specification of the building facades acoustical performance (i.e., STC requirements). The acoustical performance of the building façade will depend on its construction design (i.e., spandrel, concrete, glazing and doors), building orientation and suite layout design. As identified in Figures 7 to 10, some areas within the LYP will require building façade elements with ratings greater than STC 38. Depending on the proposed construction of the building façades (i.e., glazing vs. concrete) STC ratings greater than STC 38 can be difficult to achieve and may be significantly more expensive. In addition, OLA's will need to be designed to ensure they meet the requirements of NPC 300. In areas with a major traffic corridor, it is not uncommon for the OLA to be the most challenging location to meet the MOECC recommended limits. It is typical to install acoustical barriers specifically for OLAs.

4.0 ODOUR

Odour compliance is regulated primarily on the basis of complaints by the MOECC. When complaints are received by the MOECC, they investigate, and if warranted, issue orders that require facilities identified as the sources of the odours to mitigate the effects. In the environment, complaints relate to the odour that results from all compounds present, which is often referred to as "whole odour". However, there is little data available on whole odour emission from industrial sources. The most frequent methodology used to determine "whole odour" is by using source test data.

In addition to complaint based regulation of whole odours, Ontario has also established regulatory criteria for a number of individual compounds where these limits are based on protecting against odour impacts from that compound alone. Experience has shown that compliance with these odour-based criteria for individual compounds does not guarantee that there would not be detectable odours in the environment as the whole mixture of compounds may be more odorous than the individual constituents.

4.1 Assessment Methodology

In Ontario, odour is assessed according to the methodology described in the MOECC Technical Bulletin document entitled "*Methodology for Modelling Assessments of Contaminants with 10-Minute Average Standards and Guidelines under Ontario Regulation 419/05"* (MOECC, April 2008). Demonstrating that the MOECC odour guidelines can be met requires application of atmospheric dispersion models that predict the concentration of odour at off-property, odour sensitive receptors. Currently, MOECC specifies the use of the AERMOD dispersion model for the prediction of off-property odour concentration. The MOECC has selected a 10-minute time averaging period for odour results from the model. Results are then compared to the MOE guideline concentration of 1 odour unit per cubic metre (ou/m^3). Further, if it cannot be demonstrated that the predicted odour concentrations are below the guideline value, a frequency of occurrence above this guideline up to 0.5% is considered acceptable. If it can be demonstrated that the facility can meet the odour guidelines then it is unlikely that the facility will result in odour complaints.

In addition to outlining the appropriate modelling approach, the MOECC technical bulletin described above also provides guidance for selecting the appropriate operating scenario to be used when assessing odorous contaminant emissions. The MOECC modelling approach allows for the consideration of:

- a location where human activities regularly occur at a time when those activities regularly occur; and
- the frequency of exceedances of the 10-minute odour-based standards and guidelines at the above location.

The focus of the NOAQA odour assessment is on the Redpath operations to satisfy the conditions of the Central Waterfront Secondary Plan. The *Minutes of Settlement dated May 15, 2014 between Redpath Sugar Ltd., Daniels Waterfront Corporation (formerly Daniels HR Corporation), Daniels QQ Corporation (Collectively "Daniels"), QQE 162 Inc. ("QQE") and the City of Toronto* includes a methodology for assessing odour emissions from Redpath at the Daniels and QQE Lands ("The Odour Matrix"). As previously mentioned, the MOECC odour guidelines are not limits but rather guidelines that are typically only enforced in response to complaints or as a specific condition of an Environmental Compliance Approval (ECA). It is understood that Redpath does not have any history of odour complaints from its operations and there are no odour requirements or restrictions listed in the current ECA. As such, the methodology developed for the Daniels and QQE lands does not use the 1 odour unit per cubic metre guideline to identify potential odour nuisance. Instead, potential odour nuisance was assessed by comparing the predicted odour concentrations within the Daniels and QQE lands to a series of acceptable odour thresholds developed in consultation between Redpath and both Daniels and QQE. These odour thresholds were also used to identify at-receptor mitigation recommendations dependent on the sensitivity of the receptor, to assist in minimizing the exposure and risk of odour nuisance. In the interest of consistency, the odour assessment methodology applied at the Daniels and QQE Lands was therefore used in the NOAQA as a reference to assess the predicted impacts of odour from Redpath on the LYP. Predicted concentrations were categorized into four levels, with Level 1 representing the lowest odour concentrations and Level 4, the highest.

Four sets of odour modelling files were provided by Redpath to account for different operational scenarios.

1. 39NRP03 – Current emissions, with carbonatation vents.
2. 36NRP03 – Current emissions, without carbonatation vents.
3. 43NRP03 – Potential future emissions, with carbonatation vent.
4. 38NRP03 – Potential future emissions, without carbonatation vent.

Operational scenarios for both current and potential emissions without carbonotation vents represent potential at source odour mitigation changes that Redpath is currently considering. Each of these modelling files was modified to include each of the Proposed Built Form Scenarios as buildings and as a series of elevated receptors located along each building façade at 3 m height intervals to represent each storey.

4.2 Results

Odour modelling was completed for each of the Proposed Built Form Scenarios and the results were categorised into four levels, with Level 1 representing the lowest odour concentrations and Level 4, the highest. Maximum odour concentrations were typically found between grade to 20 storeys above grade for all scenarios modelled. Figures 11 – 18 illustrate the modelled odours for current operations at grade, 20 storeys, 40 storeys and 60 storeys, respectively. Building heights where the predicted odour is categorised as "Level 4" are indicated in red, "Level 3' in orange, "Level 2" in green and "Level 1" in blue. A dashed building outline identifies buildings that exist at grade but do not extend to the relevant height interval depicted on the figure.

Appendix A contains charts for the Proposed Built Form Scenarios illustrating the predicted odour levels at all heights at which each building within the LYP study area, for each of the four operational scenarios.

4.3 Discussion

Overall, the results of the odour modelling indicate that for all four modelled operational scenarios, predicted odours are highest at grade, closer to Redpath and lowest at higher elevations. For the current operational scenarios, all predicted odours at residential receptors are categorised as "Level 3" or less at elevations approximately greater than 40 storeys. If Redpath implement additional odour mitigation, all receptors greater than 20 storeys are categorised as "Level 3" or below. For potential future operational scenarios, "Level 3" is only achieved at heights approximately greater than 70 stories, without mitigation but this reduces to approximately 40 storeys once odour mitigation (removal of carbonatation vents) is implemented. However, as mentioned previously, odour is regulated on the basis of nuisance at odour sensitive receptors. The MOECC technical bulletin defines odour sensitive receptors as the following:

- residences;
- health care facilities;
- senior citizen's residences or long-term care facilities;
- child care facilities;
- camping grounds;
- schools;
- community centres;
- day care centres;
- recreational centres and sports facilities;
- outdoor public recreational areas; or
- other locations as specified by the MOECC.

The proposed buildings located in the southern half of the LYP study area are identified to be used for Non-Sensitive Land Use. As such, these buildings are less likely to be classified as odour sensitive receptors under the MOECC guidelines. While this does not guarantee that odours at these locations would not result in odour nuisance complaints, the non-sensitive nature of these receptors reduces the likelihood of a nuisance complaint. As a result, while these buildings will likely still require some form of odour mitigation, the amount of odour mitigation required is anticipated to be less extensive. Redpath is currently reviewing odour reduction technologies, including the removal of carbonotation vents as per the additional modelling files supplied, which reduce predicted odour further. As previously mentioned, odour is regulated as nuisance and based on complaints. It is understood that Redpath has not received any complaints based on the current odour levels. The application of The Odour Matrix aids as a guide in identifying the locations of the highest and lowest odour concentrations; and examples of mitigation that may be required to limit the exposure of receptors and reduce the likelihood of complaints. However, there are no guarantees that any odours, even those identified as "Level 1" will not result in odour nuisance complaints at proposed new receptors. It is likely that some odour mitigation will be required across the entirety of the LYP.

5.0 AIR QUALITY

Phase 1 of the NOAQA focussed on characterizing the current air quality in the study area by using monitoring data from nearby MOECC and National Air Pollution Surveillance (NAPS) stations to analyse ambient air quality in the LYP. The purpose of Phases 2 and 3 of the NOAQA is to incorporate the Proposed Built Form Scenarios into the air quality modelling files provided by Redpath to determine the impacts it has on air quality within the LYP. As a result, the following two different modelling approaches have been completed:

1. Ambient Air Quality Assessment - An assessment of the ambient air quality at both ground level and elevated receptors introduced by the Proposed Built Form Scenarios; and
2. Ontario Regulation 419/05 Assessment - An assessment of the impacts of introducing the Proposed Built Form Scenarios on the ability of existing industries (i.e. Redpath) to comply with Ontario Regulation 419/05.

Each of these assessments is discussed in more detail in the following sections.

5.1 Assessment Methodology

5.1.1 Ambient Air Quality Modelling

In 2011, the City's Environment and Energy Office (EEO) commissioned the development of the Toronto Airshed Model "*An All Sources Cumulative Air Quality Impact Study of South Riverdale - Leslieville – Beaches"* (Golder, 2011), which assessed the transport and dispersion of long-range, regional and local emissions on the Toronto airshed. The focus of the airshed modelling project was to determine the contribution of various local and transboundary sources on the geographical distribution of ambient air quality concentrations on the City of Toronto. This model was subsequently updated in 2014 to use more recent emissions data and to incorporate both the City's ChemTRAC database and a meteorological dataset developed specifically for the Toronto area. This model includes emissions of 30 different compounds (Identified by the City as the Priority Air Contaminants) from Industrial, commercial, residential, transportation, biogenic and agricultural sources across North America at increasing resolutions to predict concentrations in Toronto. Emissions from local industries were taken from the National Pollutant Release Inventory (NPRI) and incorporated into the model. Predicted concentrations of the existing ambient air quality were calculated on a 24 hour and annual basis at Ground level and at key elevations above ground.

5.1.2 Ontario Regulation 419/05 Assessment

In Ontario all industrial facilities that release emissions into the atmosphere are required to document compliance with the relevant air quality regulations, in particular Ontario Regulation (O.Reg.) 419/05. O. Reg. 419/05 does not consider cumulative or background concentrations, rather it applies to individual facilities. Each individual facility must document that contaminant concentrations resulting from emission sources within their property boundary comply with the O.Reg. 419/05 standards at ground-level beyond the Facility fenceline and at sensitive receptors. The introduction of new sensitive receptors, especially elevated receptors, may impact the level of compliance for existing industrial facilities that have been lawfully permitted to operate in the area.

Low level sources comprise the majority of the industrial facilities within the LYP. In general, low level sources are not buoyant and stay at low elevations. As a result, air quality impacts diminish as the distance from the source increases. For this reason, most maximum point of impingement concentrations from low level sources are likely to occur at or close to the Facility boundary at ground level and are unlikely to be impacted by the introduction of new (elevated) sensitive receptors. This is illustrated in Diagram A, below which shows the comparative areas of influence of both high and low level sources.

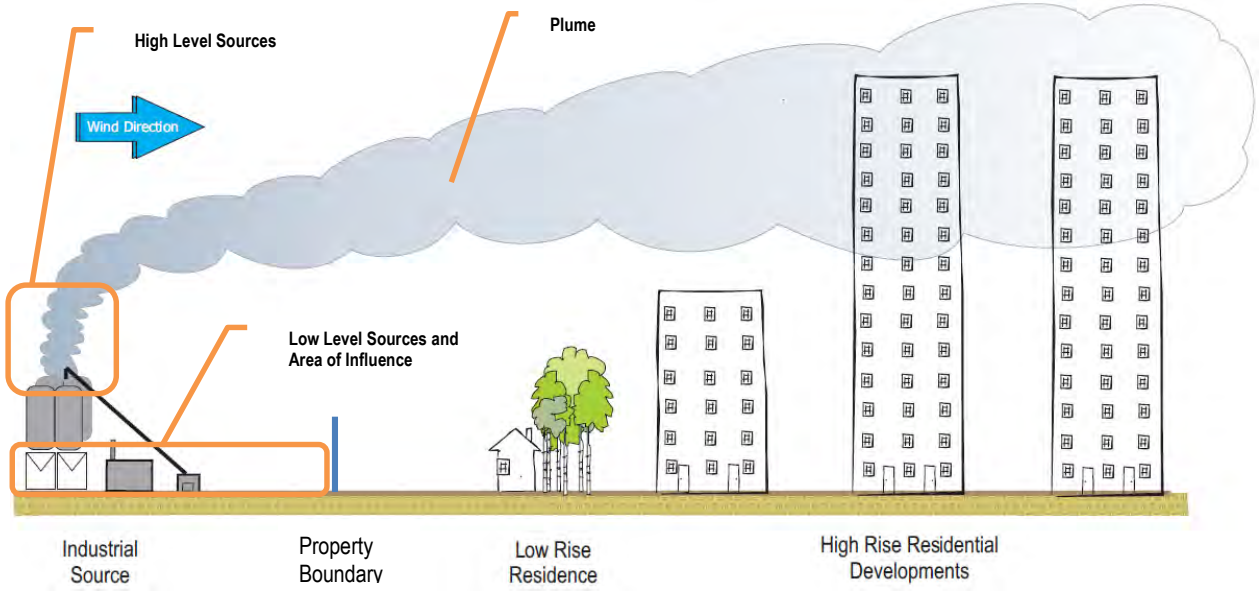


Diagram A: Low and High Level Sources including Point Source Plume Dispersion

The Facility with the greatest likelihood of being impacted by land use changes in the LYP is Redpath. Redpath is allowed to operate under ECA 6710-7XFPDV dated, December 29th, 2010 and is compliant with all the ECA requirements. Redpath has a number of point sources including a 61 m stack. A copy of the air dispersion modelling files used to support the ECA for the facility was provided by AMEC on behalf of Redpath. Golder incorporated the Proposed Built Form Scenarios into the modelling files supplied by Redpath, both as a series of buildings to evaluate the impact on downwash, and as a series of elevated sensitive receptors located along each building façade at 3 m height intervals to represent each storey.

5.2 Results

5.2.1 Ambient Air Quality Modelling

Using the updated City of Toronto airshed model, it was possible to predict the current air concentrations of 30 different compounds across the entirety of the LYP Study Area at ground level and at key elevations above the ground. The results were compared to the Ambient Air Quality Criteria (AAQC, as described in Phase 1). Overall, the result of the modelling shows that there are only five of the compounds considered in the study where predicted concentrations are in excess of the relevant AAQC somewhere in the study area. These include:

- Nitrogen Oxides (NOx) as Nitrogen Dioxide (NO_2);
- Particulate Matter less than 10 microns in diameter (PM_{10});
- Particulate Matter less than 2.5 microns in diameter ($PM_{2.5}$);
- Benzene; and
- Cadmium.

For all other compounds, the concentrations meet the criteria and would be considered acceptable. The predicted concentrations in excess of the relevant criteria do not occur all of the time, with the 24-hour concentrations being shown to exceed criteria less than 10% of the time.

The industries within the study area (in particular Redpath) were not identified as being the primary source of elevated concentrations above criteria. At ground level, the largest contributing sources are the transportation links, in particular the Gardiner Expressway and Rail corridor which run North alongside the study area. This is illustrated on the accompanying figures which show annual predicted concentrations of Nitrogen Oxides (As NO_2) (Figure 19), benzene (Figure 20) and $PM_{2.5}$ (Figure 21).

5.2.2 Ontario Regulation 419/05 Assessment

The existing Air Quality model for Redpath was modified to predict air quality concentrations at the Proposed Building Concepts for comparison against the MOECC Schedule 3 Point of Impingement (POI) Standards listed in O.Reg.419/05 (MOECC POI Limits). The results show that the highest concentrations are typically found at elevations between 25 and 35 storeys above grade (Approximately 75 – 105 m). This correlates with the height of the tallest stack at Redpath extending 61 m above grade.

All contaminants included in the Emission Summary and Dispersion Modelling Report for the Facility were modelled and predicted concentrations were compared to the MOECC POI limits. For each storey, it was identified whether any of the contaminants exceeded a POI limit. Heat maps are presented in Figures 22- 30 for ground level, 20 storeys, 30 storeys and 40 storeys above grade for each Proposed Built Form Concept. A building is indicated in red if one or more contaminants exceeds the MOECC POI limit at this elevation. Green indicates that no MOECC POI limits are exceeded at the relevant elevation and a dash line indicates that a building exists at ground level but does not extend this tall in elevation. All buildings are in compliance with the MOECC POI limits above 35 storeys in height.

Appendix B contains charts for Scenarios A and B illustrating for every building and/or every storey, whether an MOECC POI limit is exceeded.

5.3 Discussion

Overall the ambient air quality modelling indicates that existing air quality in the study area would be categorized as typical of an urban situation with several compounds potentially exceeding the MOECC Ambient Air Quality Criteria. In addition, the air quality is similar to other areas of the City. Ambient air quality concentrations in the study area are primarily due to non-industrial sources, such as the highways and rail lines.

The results of the O. Reg. 419/05 air quality modelling indicate that there is potential for the Proposed built form concepts, to cause Redpath to be out of compliance with O.Reg. 419/05 without additional mitigation. However, it is anticipated that these impacts could be mitigated either through at source or at receptor mitigation. At source mitigation would need to be discussed with Redpath to determine technical feasibility and appropriate cost-sharing mechanisms. For example, the majority of the buildings that are illustrated to be out of compliance with O.Reg.419/05 standards are proposed to be developed as meeting Non-Sensitive Land Use. As a result, they are less likely to be built with openable windows/ balconies, which would otherwise result in non-compliance. At receptor mitigation could include locating air intakes to the north side of the building, so as to be shielded from Redpath operations but other sources may also impact the air intakes and should also be taken into consideration.

6.0 PRECINCT PLANNING RECOMMENDATIONS

The development of Sensitive and Non Sensitive land uses within the LYP is feasible based on the results of the NOAQA provided the City designate the LYP as Class 4 and the understanding by potential developers for the requirements of receptor based mitigation to ensure that Redpath maintains compliance with MOECC guidelines and regulations for noise, odour and air quality. However, should the City not designate the LYP as Class 4 and the requirements for receptor based mitigation not be incorporated as described herein, development will not be feasible.

Based on the above methodology, results and discussion, the following are Golder's recommendations with respect to noise, odour and air quality to be considered as part of the policy planning being carried out for the LYP precinct plan for the potential introduction of sensitive and Non-Sensitive Land Uses within the LYP.

6.1 General

- The planning of any developments as it relates to noise, odour and air quality within the LYP should follow a process consisting of a framework that is agreed upon by the City, Redpath and other key stakeholders. This process should be developed first prior to any detailed designs are investigated. One of the early steps in the planning of development within the LYP should consist of a preliminary discussion between the developer, Redpath and the City to review the process as it relates to noise, odour and air quality. The framework should include, but not be limited to, applicable policies, expectations, mechanisms, review process, standards and/or agreements deemed appropriate to address noise, odour and air quality within the LYP.

- Based on the Redpath operations, the predicted background levels assessed in this NOAQA and assuming that the development is approved within the LYP, Redpath will not comply with respect to noise guidelines, odour guidelines and air quality regulations within some areas of the LYP, specifically the southeast and eastern areas. The introduction of a buffer zone between Redpath and areas of the LYP with Sensitive Land Uses will assist in reducing the likelihood of potential non-compliance issues for noise and air quality associated with Redpath's operations within the LYP. Possible options for the buffer zone within the LYP include:
  - All buildings on the southern portion of the LYP must exclude Sensitive Land Uses (i.e., only buildings with Non-Sensitive Land Uses will be allowed).
  - Buildings with Non-Sensitive Land Uses must be constructed prior to the development of sensitive buildings to realize the benefit of shielding at lower levels.
  - The design of buildings with Non-Sensitive Land Uses must take advantage of specific heights, dimensions and locations to maximize the potential benefits when used as part of the buffer zone. The figures in Appendix C present building heights and reference dimensions to describe the horizontal and vertical extent the buildings for the two Proposed Built Form Scenarios cover within the LYP and evaluated in this NOAQA. The reference dimensions for the two Proposed Built Form Scenarios will need to be revaluated for other proposed built forms.
- The definition of the various expected and /or excluded land uses and purposes within the LYP must be clearly defined. The *Air Dispersion Modelling Guideline for Ontario*, *NPC-300 Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning* and *OMB Minutes of Settlement dated May 15, 2014 Stikeman Elliot – Redpath, Daniels Corporation, QQQE162 INC. and City of Toronto*, all provide possible definitions that may be used as a reference. It is Golder's understanding recent efforts regarding development within the East Bayfront (West) Precinct have resulted in land use definitions (i.e., Qualified Regeneration Area) that may be applicable to the LYP. It will be necessary to clearly define and identify the various land uses and purposes since depending on their location; they may impact Redpath's operations to comply with noise guidelines and air quality regulations.
- It is Golder's understanding that Redpath has carried out all the necessary noise and air quality mitigation, both to its equipment and administrative controls such that it continues to comply with noise guidelines and air quality regulations. In the event additional unforeseen mitigation measures are considered to be possible options to further reduce the noise, odour and air quality impacts associated with Redpath operations, their feasibility will need to be discussed and verified with Redpath prior to being implemented or considered as conditions of any agreement.
- This NOAQA presented areas within the LYP where Sensitive Land Uses may exist but should be further investigated through detailed assessments. These areas are considered to be more suitable than others, for sensitive land use development when assessed to noise guidelines and air quality regulations. This does not mean there will be no noise, odour and/or air quality concerns but rather it will be a suitable option relative to the other areas when assessing the feasibility of introducing sensitive land uses within the LYP.

6.2 Noise

- Detailed noise assessments in accordance with MOECC noise guidelines must be carried out for all developments proposed within the LYP. The assessment of noise must consider the impact of the environment on the development, the impact of the development on the environment and the impact of the development on itself.
- A single noise prediction model, consisting of both stationary and transportation noise sources, should form the basis of all noise assessments carried out for any proposed developments within the LYP to maintain a level of consistency when assessing noise. The noise prediction model will need to be easily accessible for Redpath, the Developer and City. The noise prediction model setup and inputs, including the source of the inputs needs to be agreed upon by Redpath, the Developer and City. This approach was presented in the Hybrid Matrix.
- NPC 300 is selected as the noise guideline applied to the LYP. As discussed with Stikeman Elliot, the Hybrid Matrix was negotiated specifically for the East Bayfront Precinct and does not currently apply to LYP. Any interest in applying the Hybrid Matrix or parts of it, which differ from NPC 300, will require approval from the MOECC, which is considered to be very unlikely.
- It is Golder's opinion that the proposed development generally meets the requirements of a Class 4 designation as defined in NPC 300 and should therefore be designated as Class 4. Based on Redpath operations and the predicted background levels assessed in this NOAQA, Redpath does not comply with respect to noise guidelines for either a Class 1 or Class 4 designation. Should the City decide to not designate the LYP as Class 4, there is no mechanism to allow for receptor based mitigation under NPC 300 for a Class 1 area which will result in non-compliance for Redpath operations. However, receptor based mitigation is possible under a Class 4 designation in the form of Enclosed Noise Buffers. The designation of the LYP as Class 4 and the implementation of Enclosed Noise Buffers will allow the Redpath facility to comply with MOECC noise guidelines.
- Appendix C includes figures identifying the heights and building setbacks with respect to the adjacent roads, for the Proposed Built Form Scenarios. Any changes from these heights and/or setbacks will need to be evaluated as part of the detailed noise assessment for the development to ensure that the requirement for mitigation (i.e., enclosed noise buffers) is identified.
- Noise mitigation measures to address both stationary and transportation sources will be required within the LYP. However, as discussed, it is expected that all mitigation measures will be receptor based. As described in NPC 300, the proponent of a new development is responsible for preparing the detailed noise assessment and ensures it addresses noise due to both transportation and stationary noise sources. The implementation and/or maintenance of the noise control measures identified in the detailed noise assessment may result in the need for an agreement between the proponent of the new noise sensitive land use, owner of the noise source and the City to deal with potential concerns and conflicts. Based on the results presented in this NOAQA for the Proposed Built Form Scenarios assessed, the following noise mitigation measures are expected to be required to address both stationary and transportation noise sources but should be verified with a detailed noise assessment;

- Installation of Enclosed Noise Buffers at locations where Redpath operations exceed the appropriate sound level limits. Figures 3 to 6 present locations on the Proposed Built Form Scenarios where exceedances occur due to Redpath's operations but may change depending on proposed developments presented by developers and changes in noise associated with the transportation networks and/or Redpath operations.
- Installation of building components (e.g., glazing, doors, spandrel) with increased acoustical performance and / or reducing window to floor area ratios. There are areas within the LYP that will require the STC rating of the glazing to exceed the minimum Ontario Building Code requirements. Depending on the suite locations and layouts, STC ratings exceeding STC 38 may be required as identified in Figures 7 to 10.
- Building orientation and configuration to take advantage of localized shielding and distance from noise sources, further enhancing the role of the buffer zone. Buffer zones (i.e., Buildings with Non-Sensitive Land Uses) will need to be constructed and/or implemented first, prior to any Sensitive Land Uses are introduced.
- Designing and locating suite layouts such that the acoustical performance of the building façade (i.e., glazing, doors and spandrel combined) is maximized (i.e., avoid bedrooms at the buildings corners constructed with glazing only).
- OLA's will need to be designed to ensure they meet the requirements of NPC 300. In areas with a major traffic corridor, it is not uncommon for the OLA to be the most challenging location to meet the MOECC recommended limits. The opportunities to meet the MOECC limits do exist, but this will require the input of an acoustical engineer early in the design stage of the development. It is typical to install acoustical barriers specifically for OLAs.

- A statement of compliance for the owner of a stationary source with MOECC noise guidelines does not ensure that noise complaints will not occur. To address potential complaints in the future, it is recommended that the discussions expected to take place between the proponent of the new noise sensitive land use, Redpath and the City include the development of a mechanism to deal with potential future complaints.

6.3 Odour

Odour assessments, as required by MOECC guidance documents, should be carried out for all proposed developments within the LYP. Although there are areas of the LYP Proposed Built Form Scenarios with lower predicted odours, classified as "Level 1", this does not guarantee that there will be no complaints in the future. It is recommended that any proposed developments within the LYP complete an odour modelling assessment using modelling files and mitigation measures agreed upon by Redpath, the developers and City. The Odour Matrix was developed based on the principals of minimizing exposure and risk of odour nuisance. The Odour Matrix applies to exposed faces and/or rooftops/terraces on buildings of both sensitive and non-sensitive building types. The type of mitigation required is dependent on the predicted odours at that particular location. A modified version is provided in Table 5, on how a similar Odour Matrix could be developed for LYP. With multiple development designs possible, these mitigation measures should be further investigated to confirm they are applicable while other mitigation measures should be further investigated to see if appropriate.

A summary of potential odour mitigation for different predicted odours ranked from Level 1 (lowest predicted concentrations) to Level 4 (highest predicted concentrations) at mixed use buildings (Defined as buildings that contain residential or sensitive land uses) is provided in Table 4. The specific odours used to define Levels 1-4 would need to be developed in consultation between Redpath and the developer. Furthermore, a framework for implementation of any similar matrix and a mechanism for site plan and building permit review to confirm adherence to mitigation requirements would also need to be developed between all involved parties.

A summary of potential odour mitigation required for different predicted odours at buffer buildings (non-sensitive use) is provided in Table 5.

Table 4: Odour Mitigation at Exposed Receptors on Mixed Use buildings (Taken from Odour Matrix)

Odour Concentration Level	Mitigation Menu
Level 4 Odour Concentrations	■ Sealed Units ■ No operable windows or doors on exterior building walls unless contained within an enclosed balcony/terrace. ■ No unenclosed balconies, terraces or rooftop amenity. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ Compliance with a protocol with respect to filters for air intakes and similar openings. ■ All vents and similar openings are to be designed to maintain positive pressure in the Residential Use units, above-grade indoor common element space and Non-Residential Use space under normal weather conditions.
Level 3 Odour Concentrations	■ Only small balconies and terraces (maximum of 1.8 m deep) permitted. ■ A self-closing door is required to access/exit all balconies, terraces, patios and rooftop amenity space. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ Compliance with a protocol with respect to filters for air intakes and similar openings. ■ All openings are to be designed to maintain positive pressure in the Residential Use units, above-grade indoor common element space and Non-Residential Use space under normal weather conditions.
Level 2 Odour Concentrations	■ Only small balconies and terraces (maximum of 1.8 m deep) permitted. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ Compliance with a protocol with respect to filters for air intakes and similar openings. ■ All openings are to be designed to maintain positive pressure in the Residential Use units, above-grade indoor common element space and Non-Residential Use space under normal weather conditions.

Odour Concentration Level	Mitigation Menu
Level 1 Odour Concentrations	■ No restrictions on balcony or terrace size. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ Compliance with a protocol with respect to filters for air intakes and similar openings ■ All openings are to be designed to maintain positive pressure in the Residential Uses units, above-grade indoor common element space and Non-Residential Use space under normal weather conditions.

Table 5: Odour Mitigation at Exposed Receptors on Buffer buildings (Taken from Odour Matrix)

Odour Concentration Level	Mitigation Menu
Level 4	■ Sealed Units ■ No operable windows or doors on exterior building walls unless contained within an enclosed balcony/terrace. ■ No unenclosed balconies, terraces or rooftop amenity. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ Compliance with a protocol with respect to filters for air intakes and similar openings. ■ All vents and similar openings are to be designed to maintain positive pressure in the Residential Use units, above-grade indoor common element space and Non-Residential Use space under normal weather conditions. ■ All building floor area, including lobbies and indoor amenity space to be provided with positive pressure under normal weather conditions
Levels 1- 3	■ Operable windows, doors, air intakes, vents or similar openings permitted on the building faces with exposure to Redpath (south facades) provided: (i) the extent of the openings will maintain positive pressure in the interior building unit/space under normal weather conditions; and (ii) the protocol with respect to carbon filters for air intakes and similar openings is complied with. ■ Rooftop, terrace and balcony space permitted if self-closing door(s) to access/exit such rooftop, balcony, terrace space are provided. ■ Patios associated with a permitted use are permitted provided self-closing door(s) to access/exit such patio space is/are provided. ■ All air intakes, including unit air intakes, vents and other similar openings are to be positioned in a screened location. ■ All vents and similar openings are to be designed so that they maintain positive pressure in the unit/space under normal weather conditions. ■ All building floor area, including lobbies and indoor amenity space to be provided with positive pressure under normal weather conditions.

6.4 Air Quality

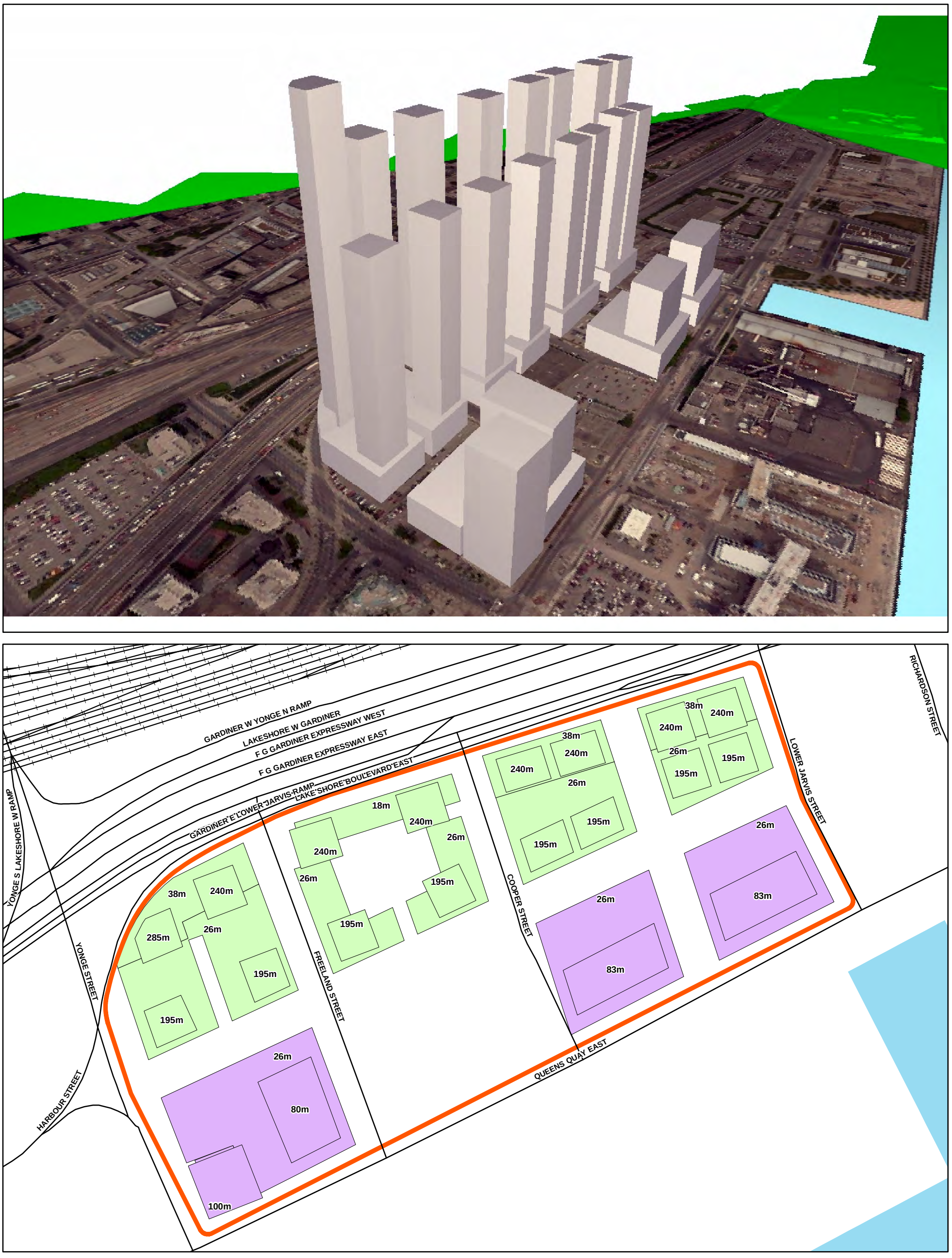
The results of the O. Reg. 419/05 air quality modelling indicate that there is potential for development within the LYP to cause Redpath to be out of compliance with O.Reg. 419/05 without the implementation of additional mitigation. However, it is anticipated that these impacts could be mitigated either through at source or at receptor mitigation. For example, the majority of the Proposed Built Form Scenarios buildings that are illustrated to be out of compliance with O.Reg.419/05 standards are proposed to be developed as Non-Sensitive land use. As a result, they are less likely to be built with operable windows/ balconies. At receptor mitigation could include locating air intakes to the north side of the building, so as to be shielded from Redpath operations but other sources may also impact the air intake and should also be taken into consideration. Detailed air quality assessments as required by MOECC guidance documents must be carried out for all proposed developments within the LYP.

SC/KA/AC/Dd/ng

N:\Active\2015\3 Proj\1525228 City of TO_Noise Odour and Air_Lower Yonge Precinct\Report\Final\Phase 3\1525228 City of Toronto Lower Yonge Precinct Tech Memo Phase 3 8June2016.docx

FIGURES

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0001.mxd



LEGEND

- Railway
- Project Area
- Non Sensitive Land Uses
- Sensitive Land Uses
- Waterbody

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17.

0 100 200 300
1:5,000 METRES

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
SCENARIO A V2 LYP PROPOSED BUILDING LAYOUT

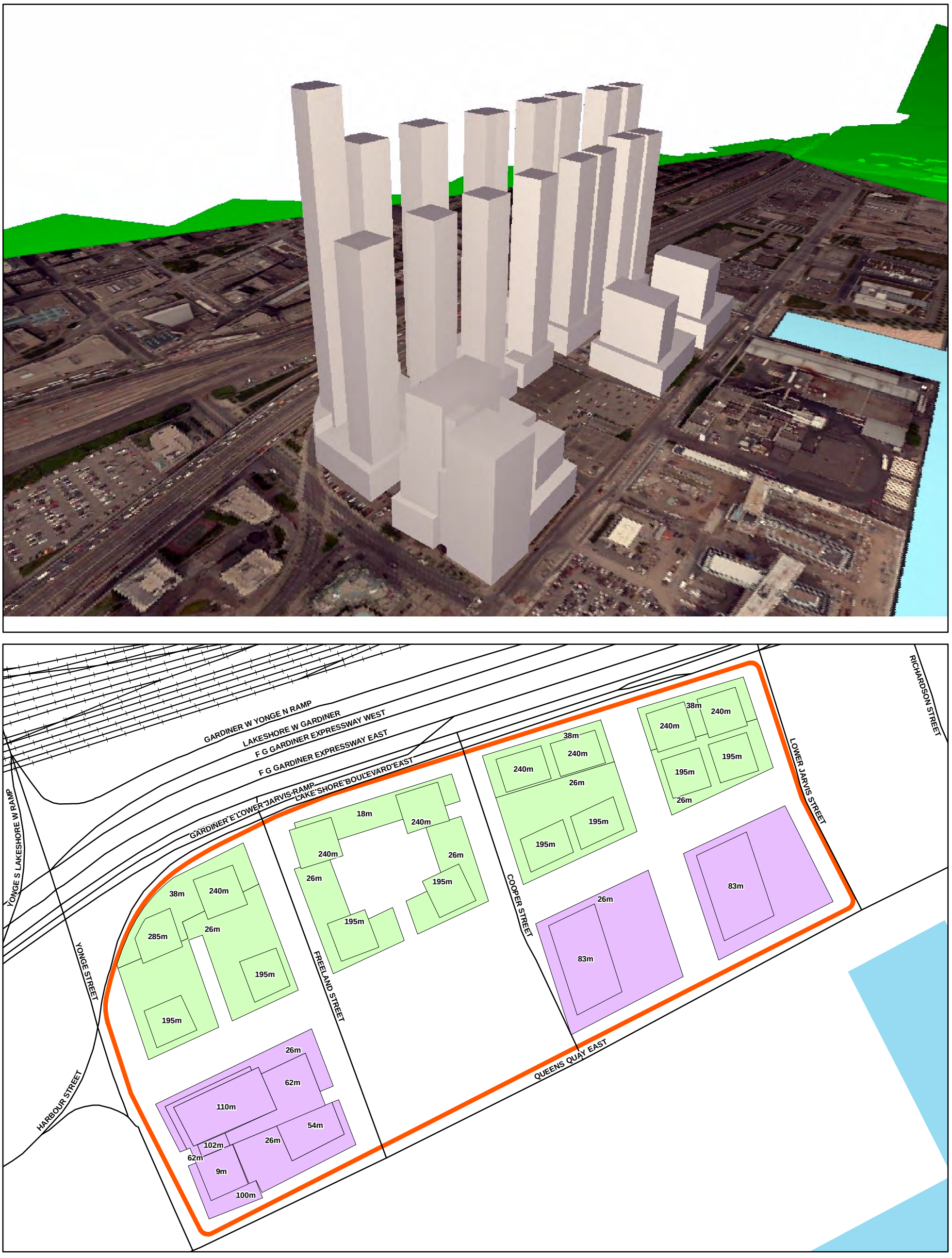
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC/KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0002.mxd



LEGEND

- Railway
- Project Area
- Non Sensitive Land Uses
- Sensitive Land Uses
- Waterbody

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17.

0 100 200 300
1:5,000 METRES

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
SCENARIO B V2 LYP PROPOSED BUILDING LAYOUT

CONSULTANT
Golder Associates

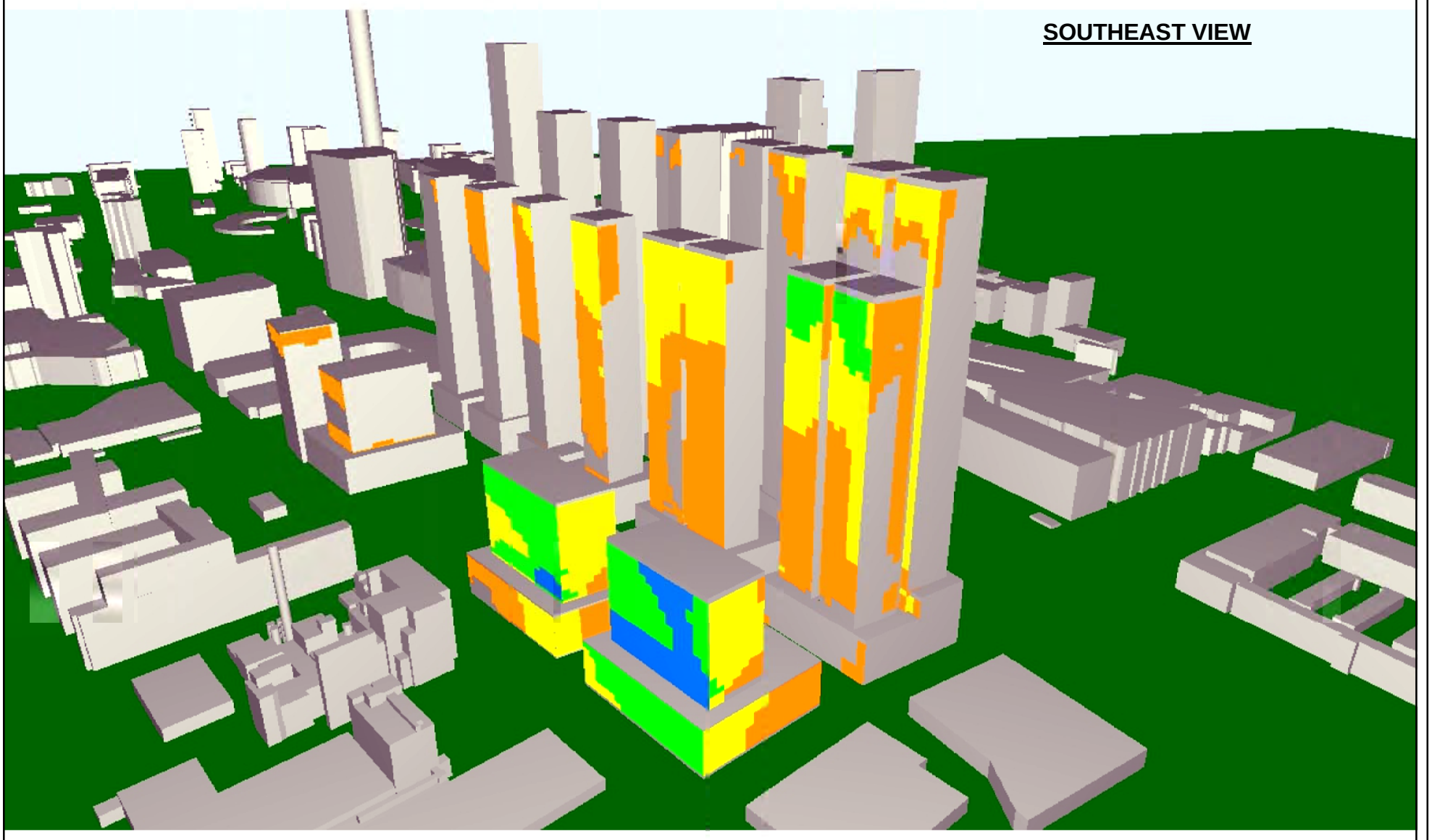
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC/KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	2

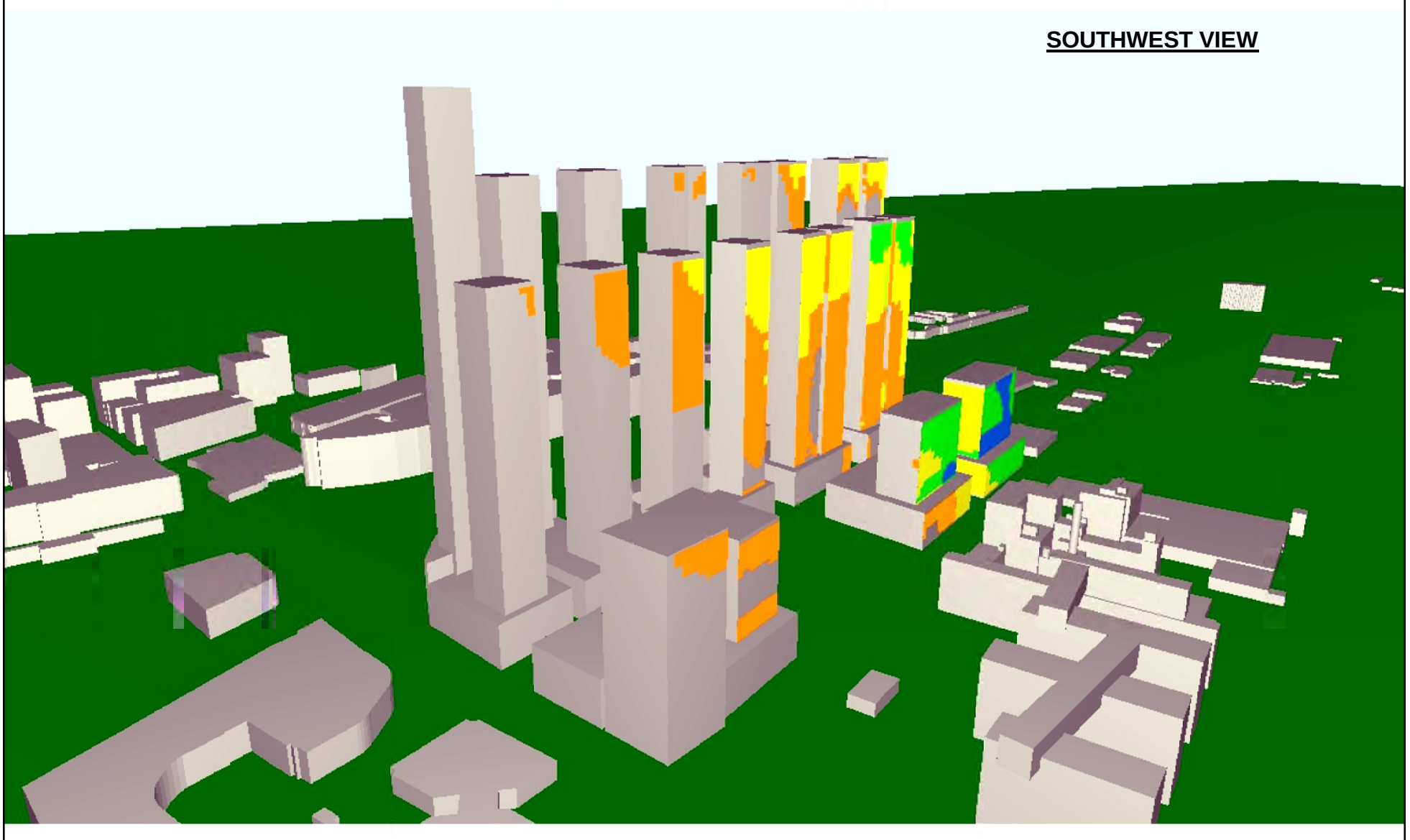
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0003.mxd

SOUTHEAST VIEW



SOUTHWEST VIEW



Permitting Noise Mitigation Requirements - Exceedance in Noise Levels (dB)

< 0	No Mitigation Required
0 < x ≤ 5.0	Level 1 Mitigation Required (Lowest)
5.0 < x ≤ 10.0	Level 2 Mitigation Required
10.0 < x ≤ 15.0	Level 3 Mitigation Required
> 15.0	Level 4 Mitigation Required (Highest)

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – PERMITTING SCENARIO A – CLASS 1 NIGHTTIME

CONSULTANT
Golder Associates

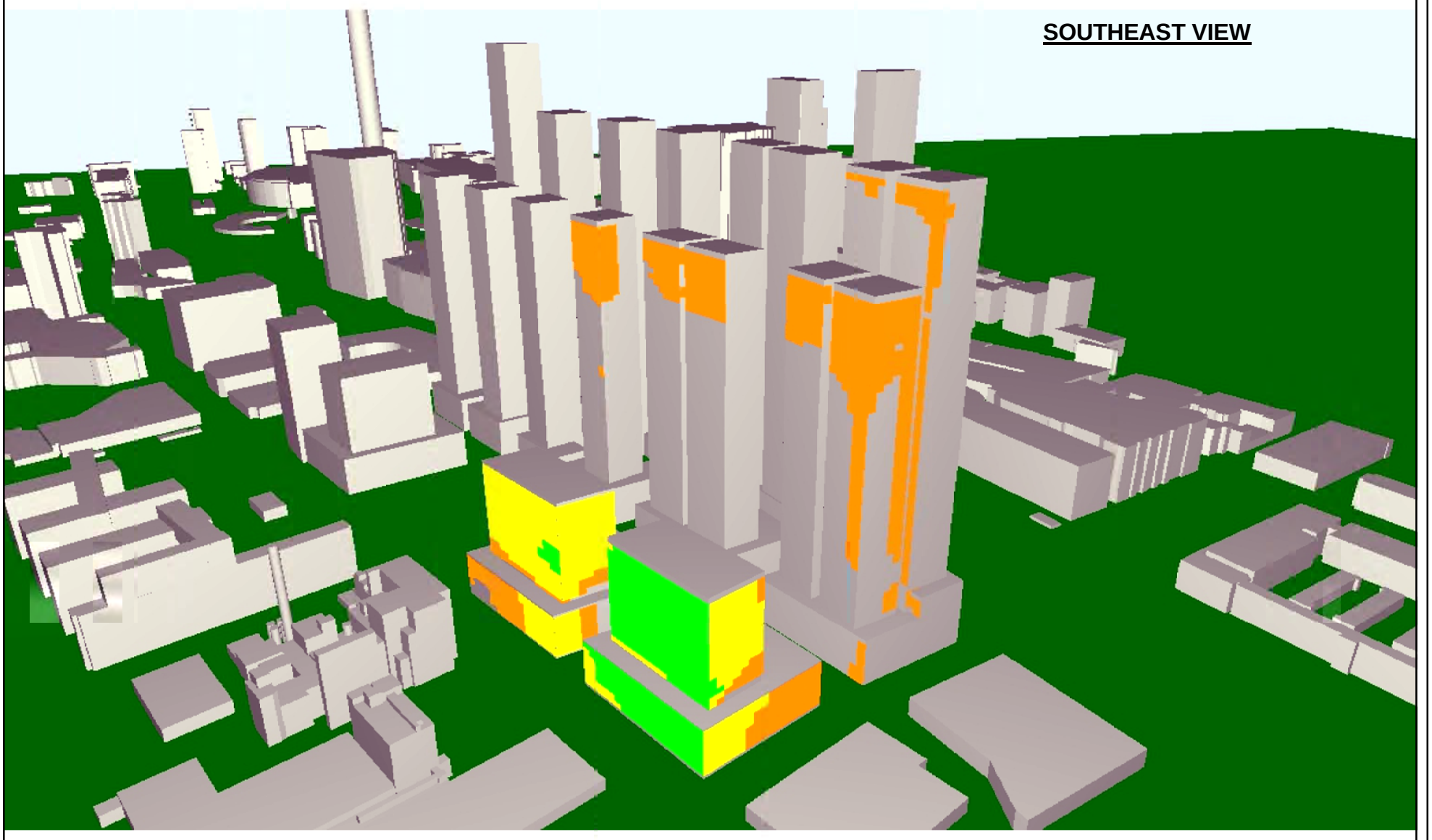
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	3

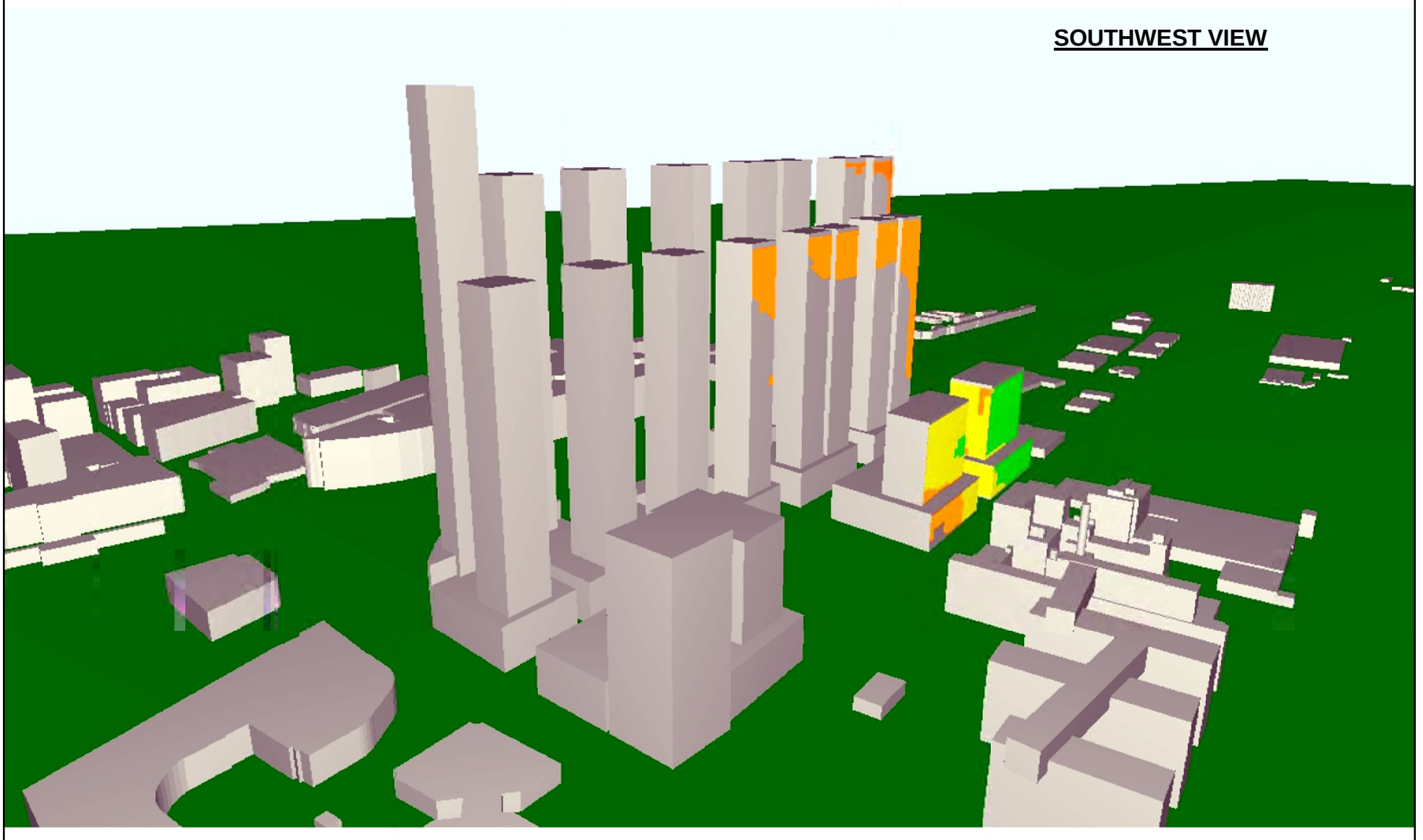
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0004.mxd

SOUTHEAST VIEW



SOUTHWEST VIEW



Permitting Noise Mitigation Requirements - Exceedance in Noise Levels (dB)

< 0	No Mitigation Required
0 < x ≤ 5.0	Level 1 Mitigation Required (Lowest)
5.0 < x ≤ 10.0	Level 2 Mitigation Required
10.0 < x ≤ 15.0	Level 3 Mitigation Required
> 15.0	Level 4 Mitigation Required (Highest)

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – PERMITTING SCENARIO A – CLASS 4 NIGHTTIME

CONSULTANT
Golder Associates

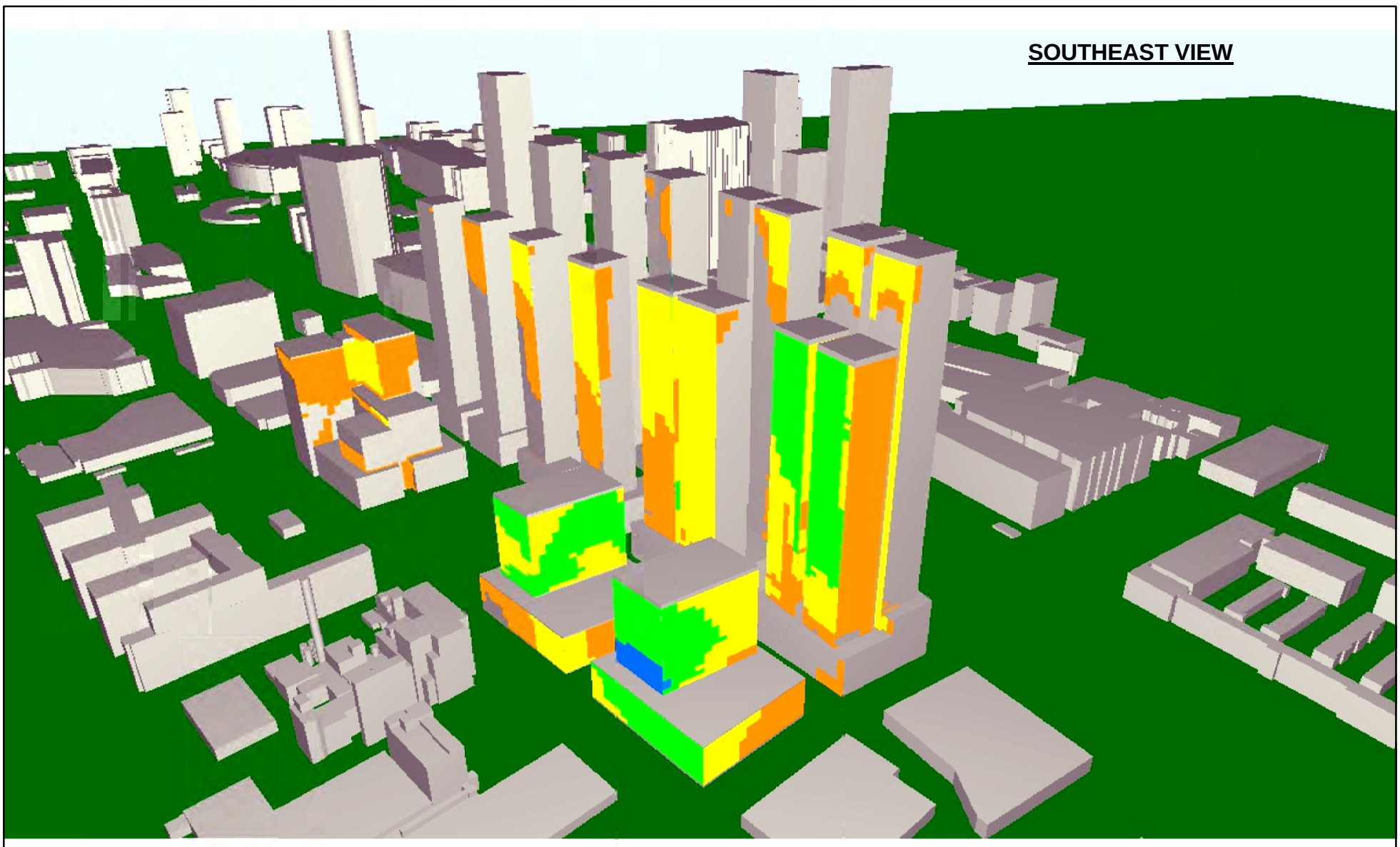
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	4

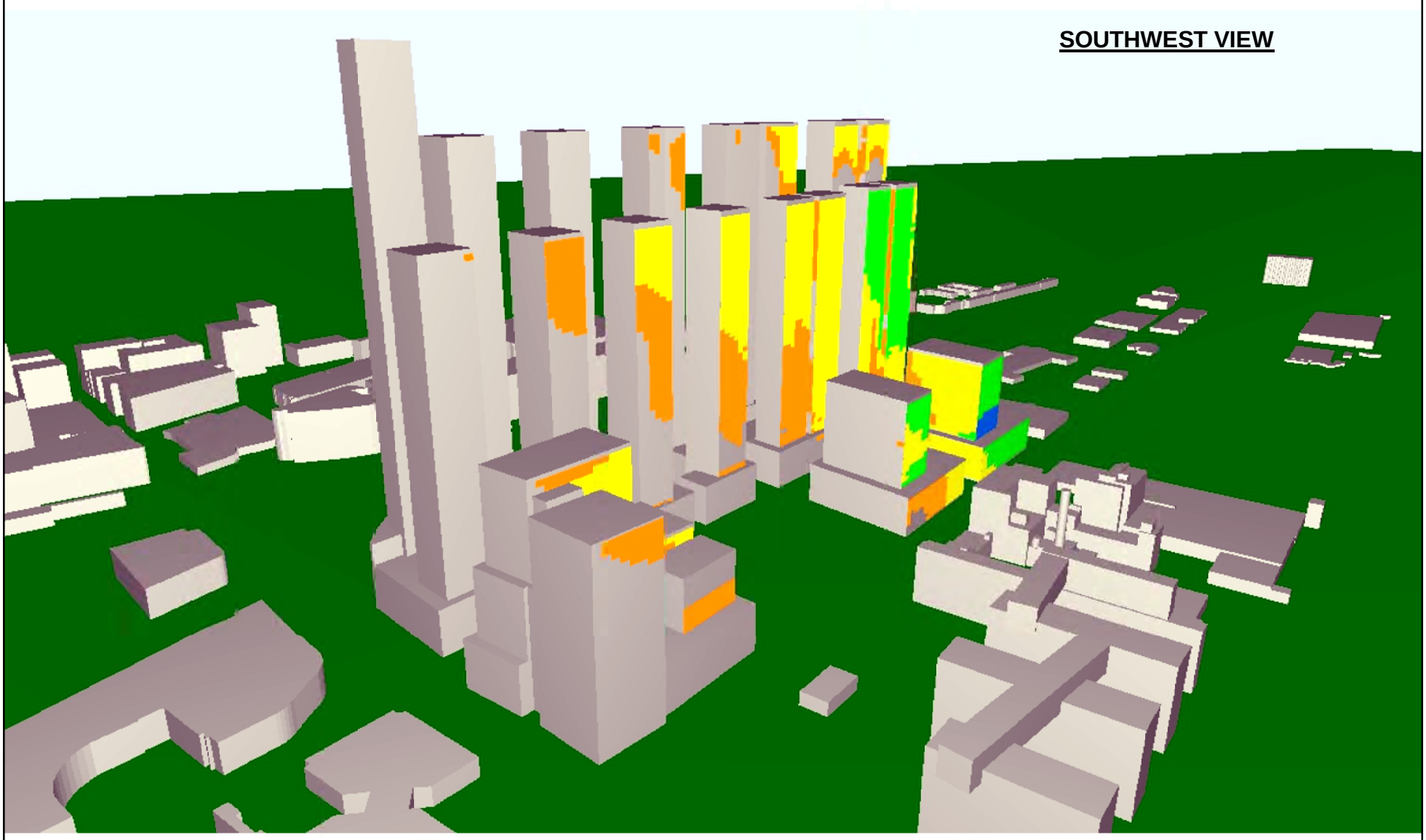
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0005.mxd

SOUTHEAST VIEW



SOUTHWEST VIEW



Permitting Noise Mitigation Requirements - Exceedance in Noise Levels (dB)

< 0	No Mitigation Required
0 < x ≤ 5.0	Level 1 Mitigation Required (Lowest)
5.0 < x ≤ 10.0	Level 2 Mitigation Required
10.0 < x ≤ 15.0	Level 3 Mitigation Required
> 15.0	Level 4 Mitigation Required (Highest)

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – PERMITTING SCENARIO B – CLASS 1 NIGHTTIME

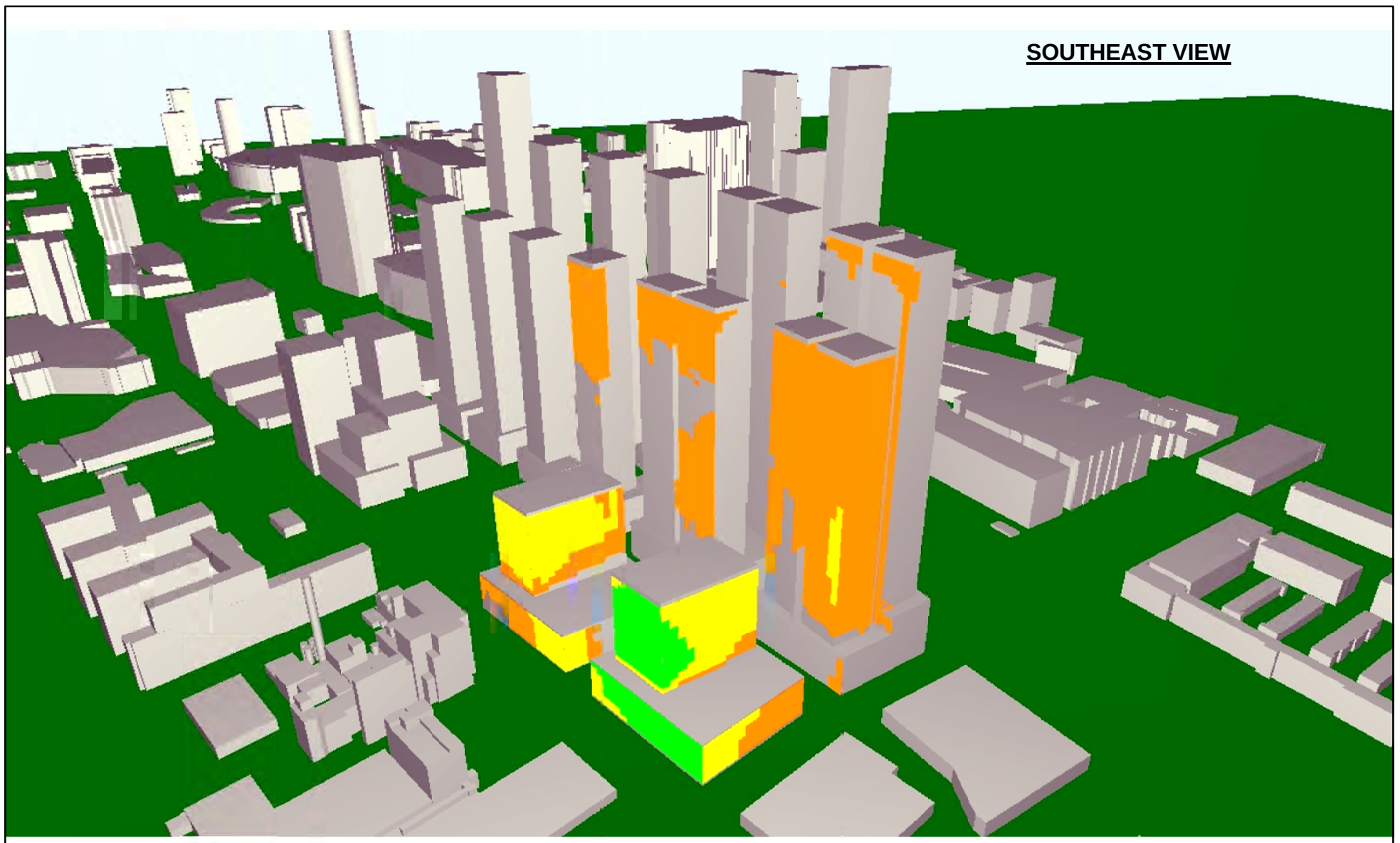
CONSULTANT
Golder Associates

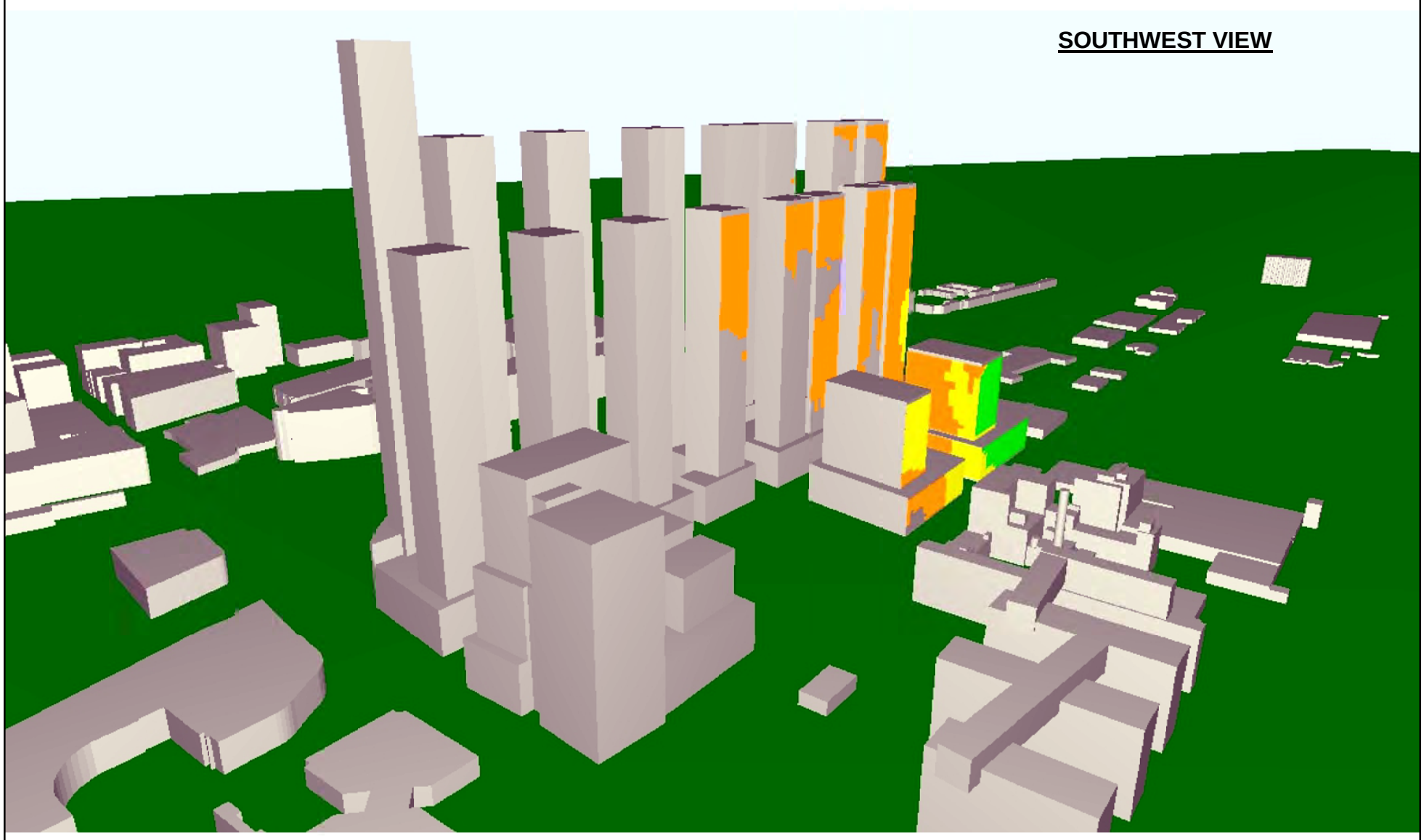
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0006.mxd





Permitting Noise Mitigation Requirements - Exceedance in Noise Levels (dB)

< 0	No Mitigation Required
0 < x ≤ 5.0	Level 1 Mitigation Required (Lowest)
5.0 < x ≤ 10.0	Level 2 Mitigation Required
10.0 < x ≤ 15.0	Level 3 Mitigation Required
> 15.0	Level 4 Mitigation Required (Highest)

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – PERMITTING SCENARIO B – CLASS 4 NIGHTTIME

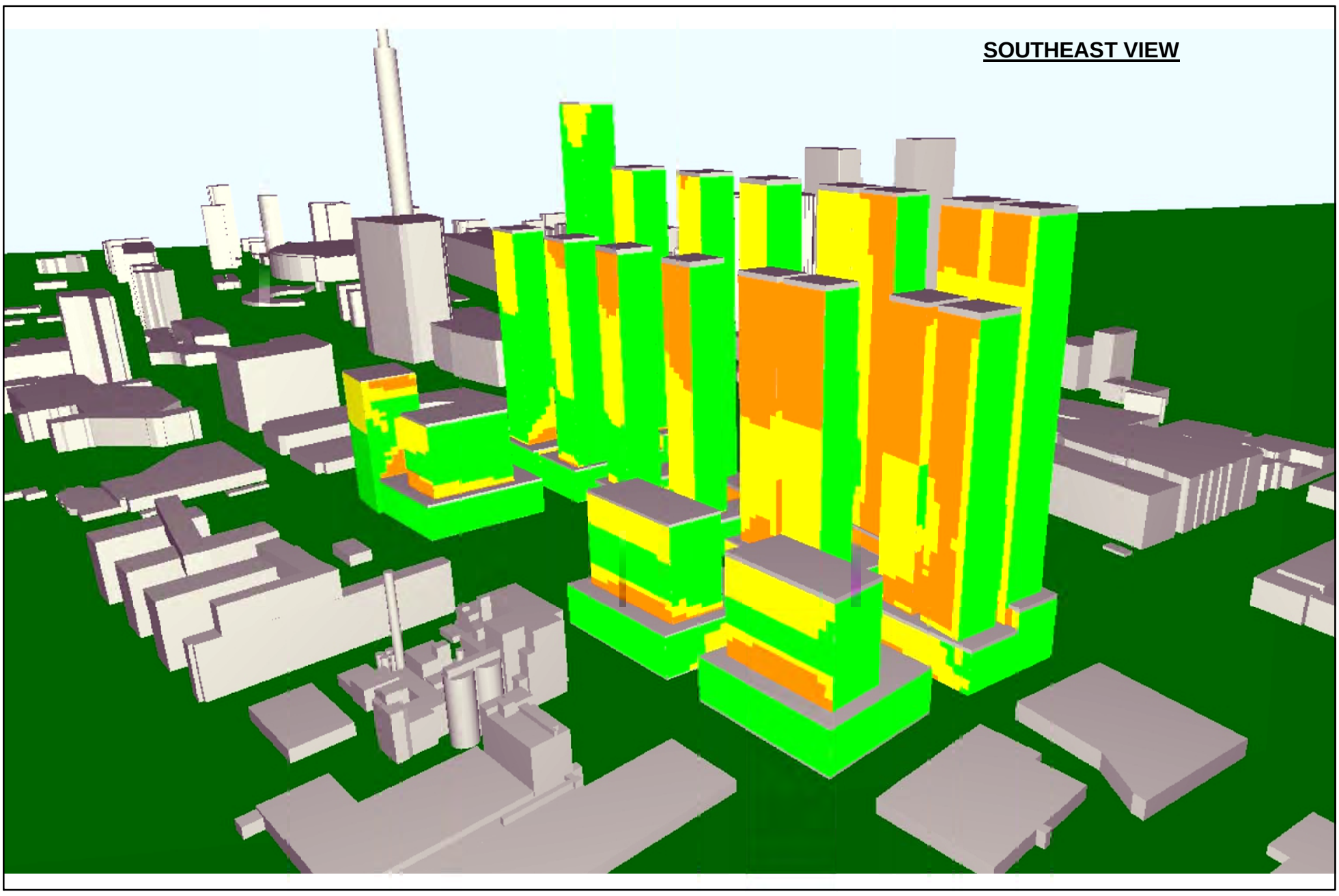
CONSULTANT
Golder Associates

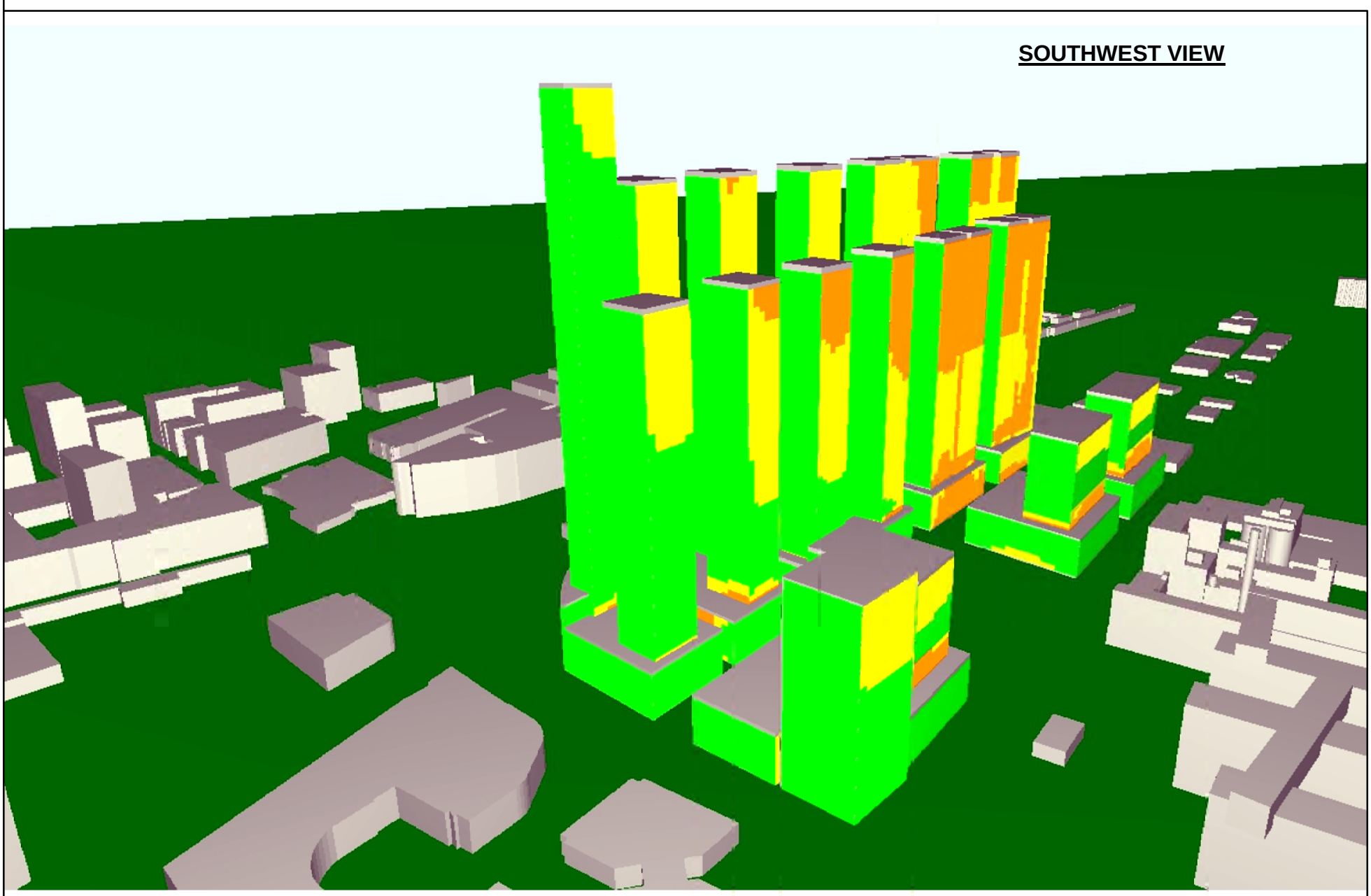
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0007.mxd





Land Use Noise Mitigation Requirements - Road Traffic Nighttime Noise Levels (dBA)*

Noise Level			STC Rating
0 < x ≤ 56.0		Level 1 Mitigation Required (Lowest)	STC ≤ 35
56.0 < x ≤ 59.0		Level 2 Mitigation Required	35 < STC ≤ 38
> 59.0		Level 3 Mitigation Required (Highest)	STC > 38

Refer to Section 3.1 in the NOAQA

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – LAND USE – ROAD TRAFFIC ONLY – SCENARIO A – NIGHTTIME

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

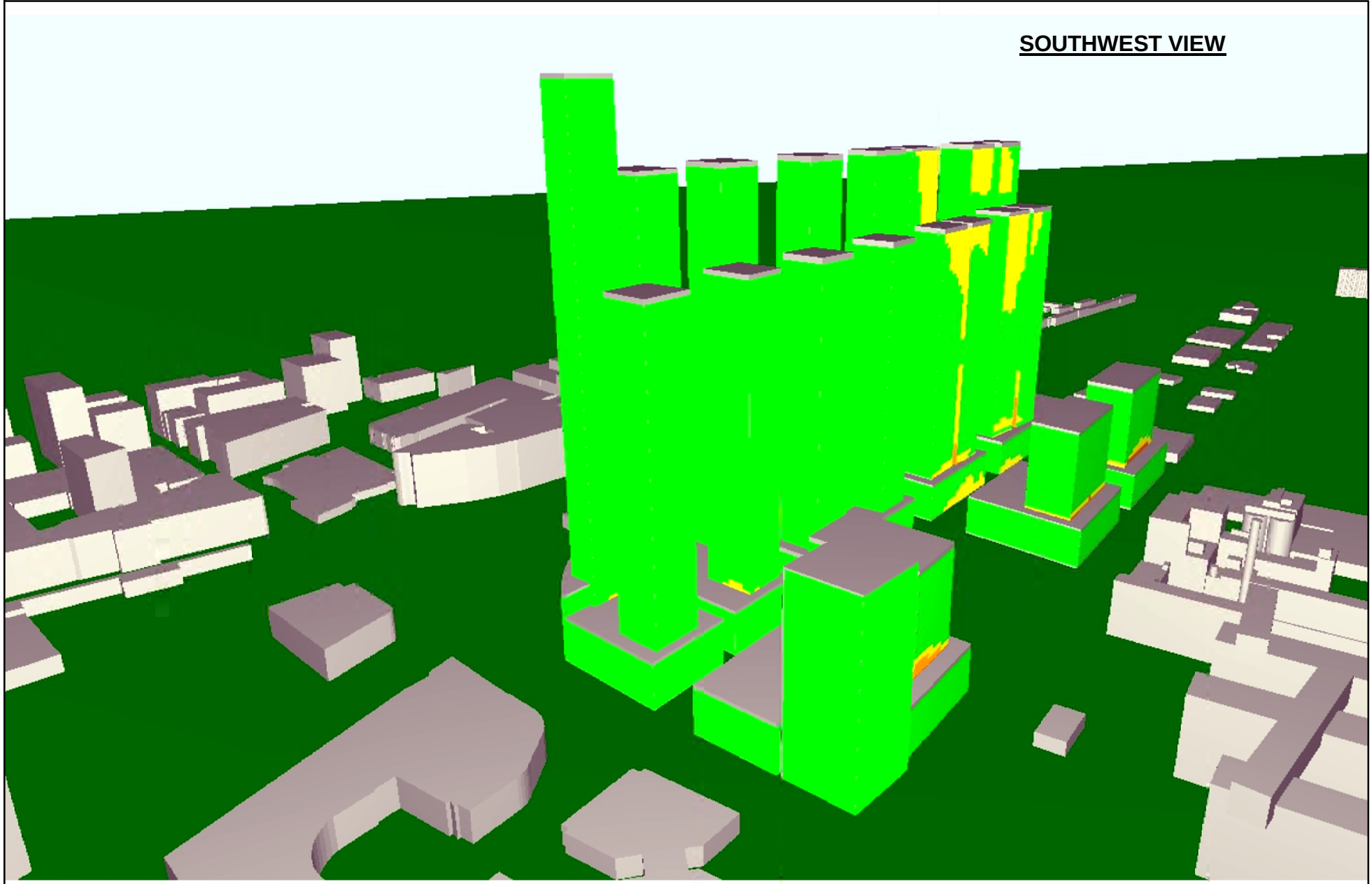
PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0008.mxd

SOUTHEAST VIEW

SOUTHWEST VIEW



Land Use Noise Mitigation Requirements - Road Traffic Daytime Noise Levels (dBA) *

Noise Level			STC Rating
0 < x ≤ 61.0		Level 1 Mitigation Required (Lowest)	STC ≤ 35
61.0 < x ≤ 64.0		Level 2 Mitigation Required	35 < STC ≤ 38
> 64.0		Level 3 Mitigation Required (Highest)	STC > 38

**Refer to Section 3.1 in the NOAQA*

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – LAND USE – ROAD TRAFFIC ONLY – SCENARIO A – DAYTIME

CONSULTANT
Golder Associates

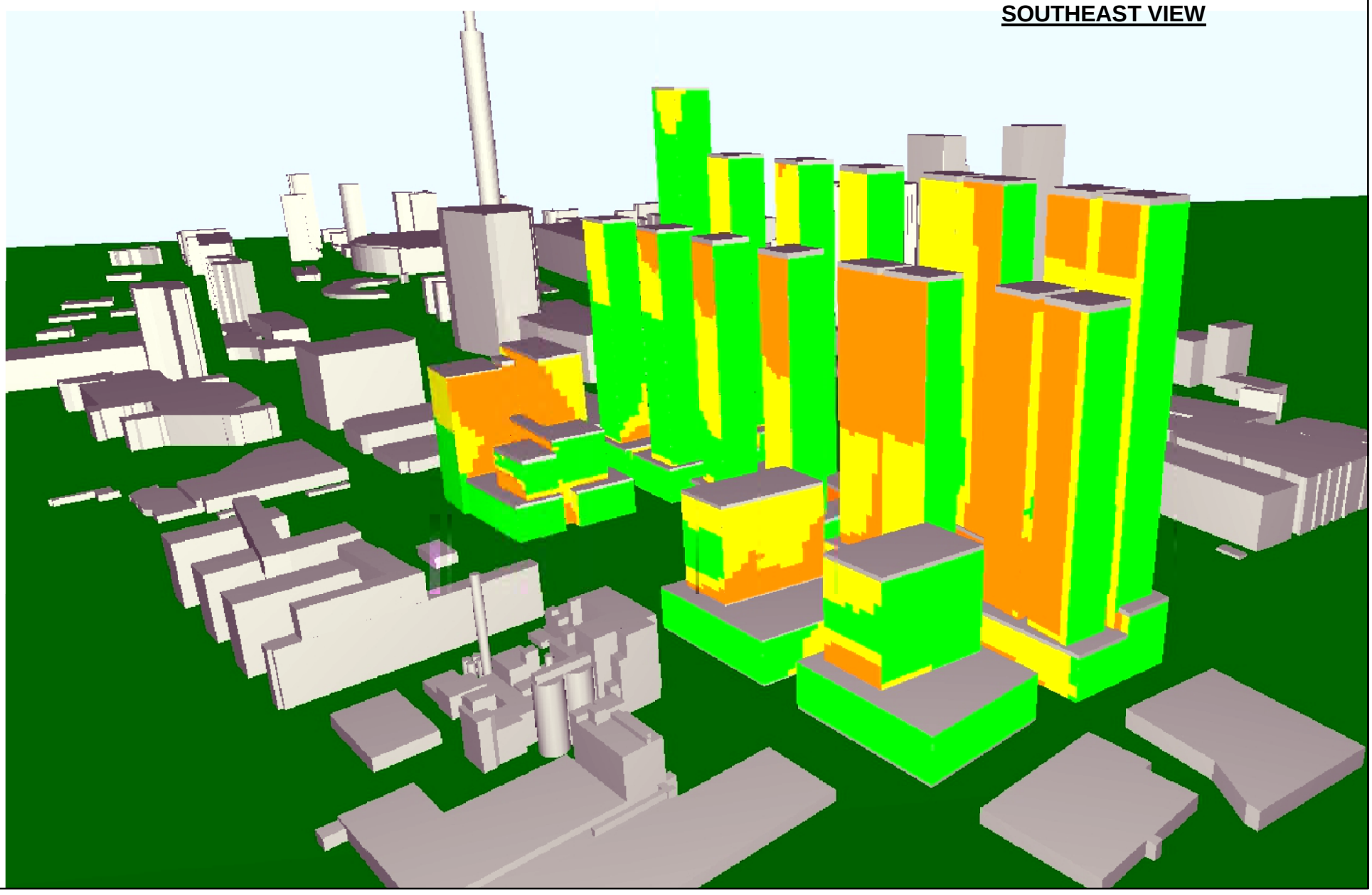
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	CO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	8

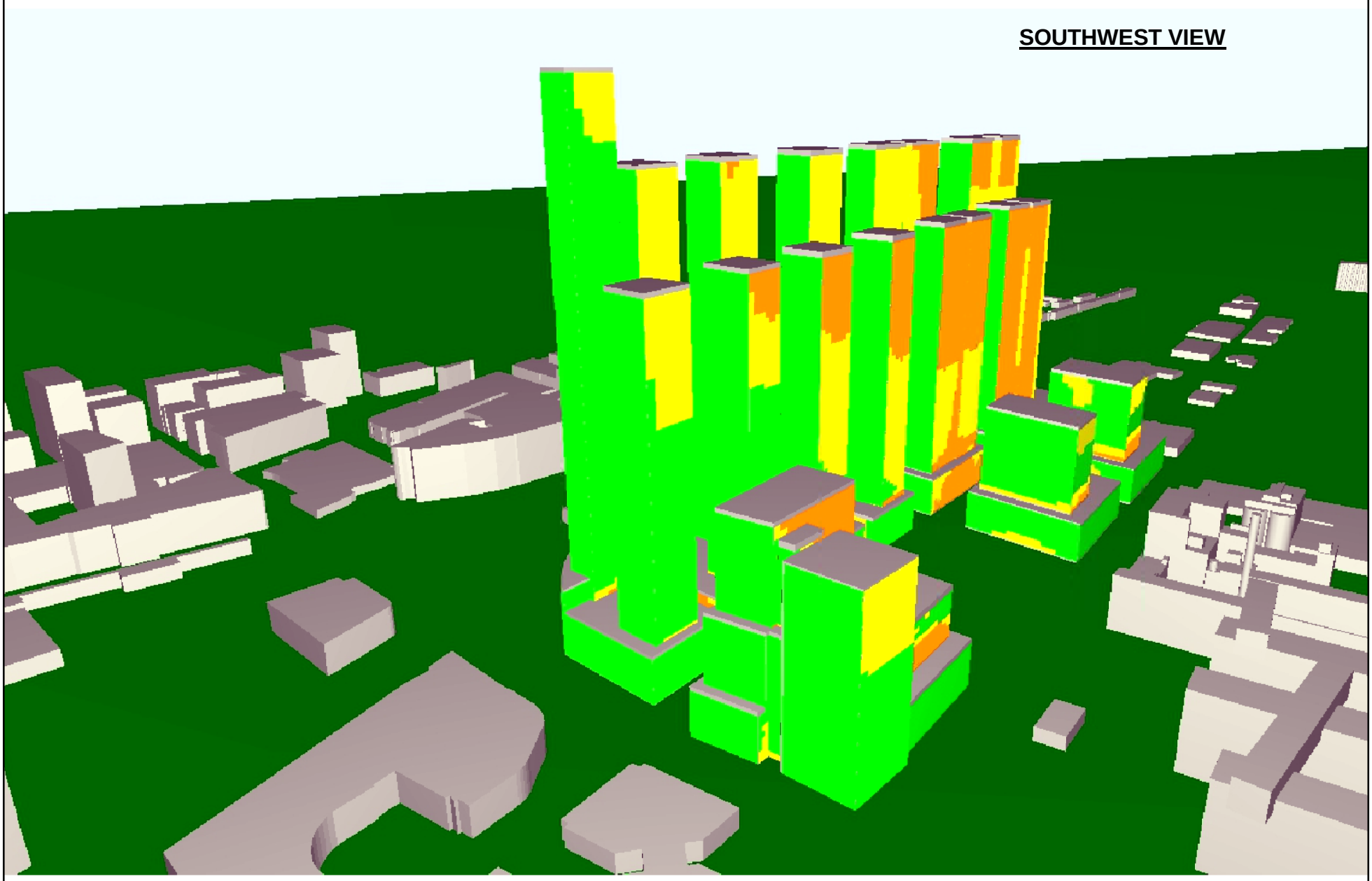
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0009.mxd

SOUTHEAST VIEW



SOUTHWEST VIEW



Land Use Noise Mitigation Requirements - Road Traffic Nighttime Noise Levels (dBA)*

Noise Level			STC Rating
0 < x ≤ 56.0		Level 1 Mitigation Required (Lowest)	STC ≤ 35
56.0 < x ≤ 59.0		Level 2 Mitigation Required	35 < STC ≤ 38
> 59.0		Level 3 Mitigation Required (Highest)	STC > 38

**Refer to Section 3.1 in the NOAQA*

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED NOISE LEVELS – LAND USE – ROAD TRAFFIC ONLY – SCENARIO B – NIGHTTIME

CONSULTANT
Golder Associates

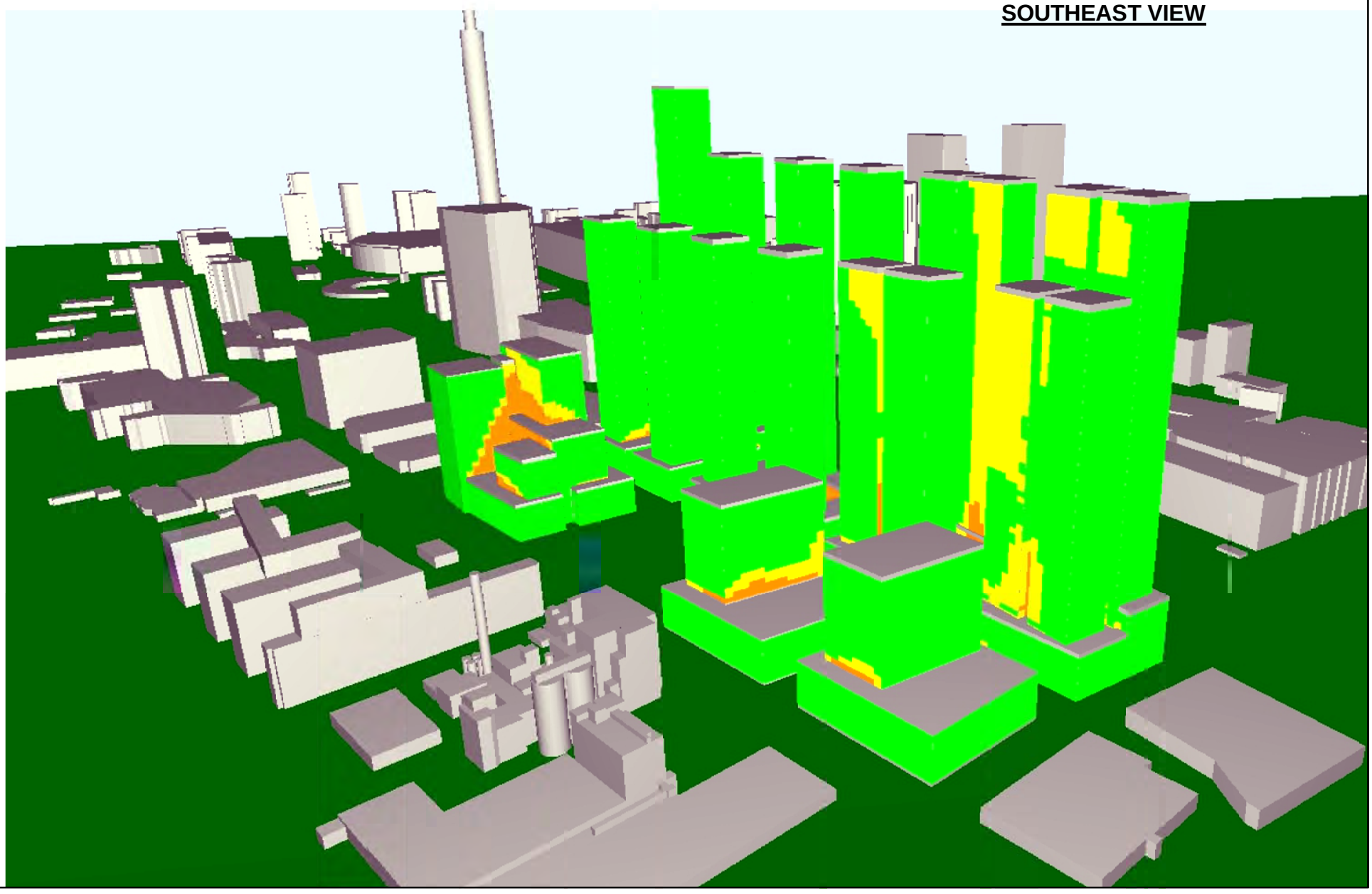
YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	9

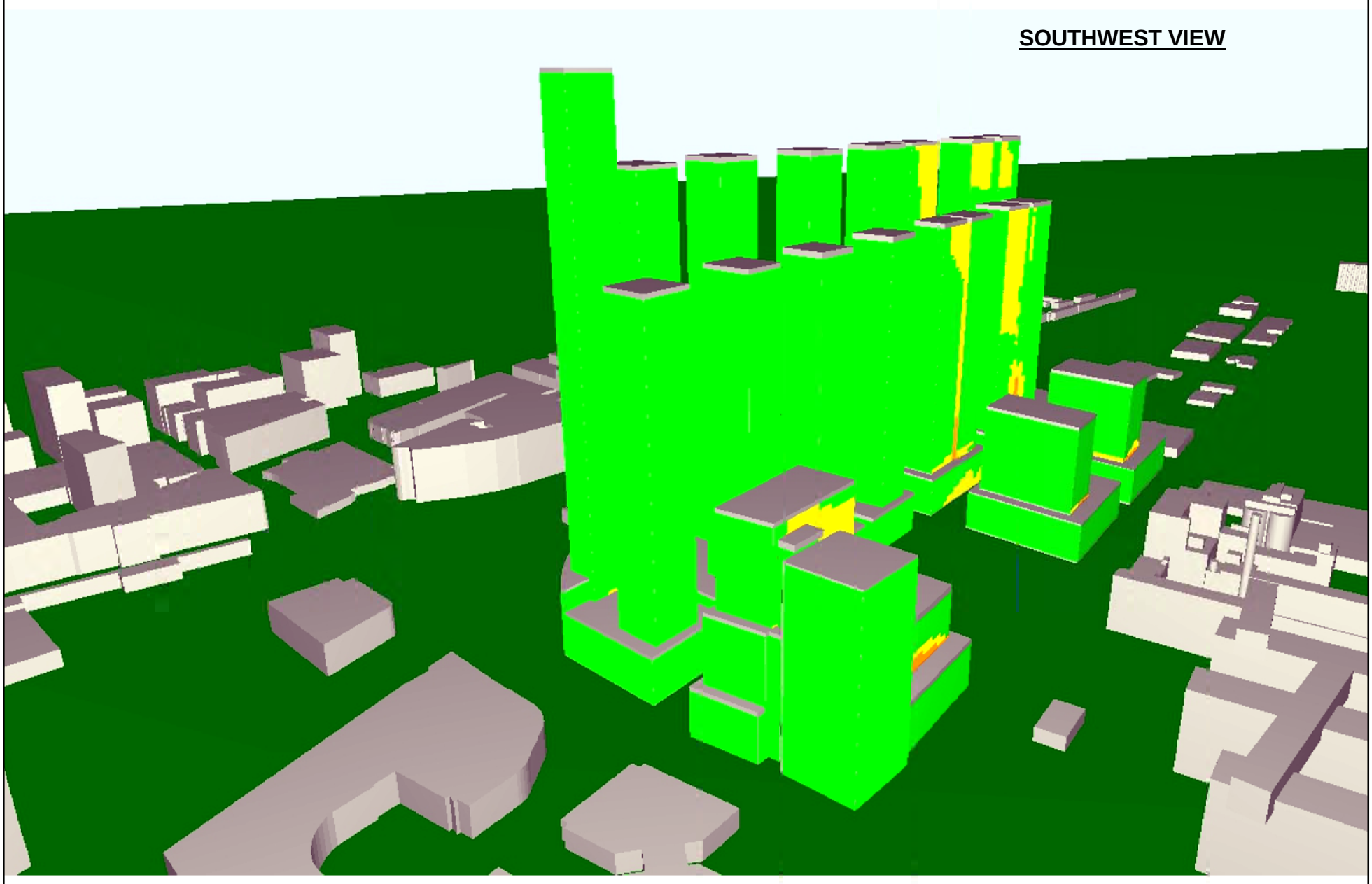
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0010.mxd

SOUTHEAST VIEW



SOUTHWEST VIEW



Land Use Noise Mitigation Requirements - Road Traffic Daytime Noise Levels (dBA) *

Noise Level			STC Rating
0 < x ≤ 61.0		Level 1 Mitigation Required (Lowest)	STC ≤ 35
61.0 < x ≤ 64.0		Level 2 Mitigation Required	35 < STC ≤ 38
> 64.0		Level 3 Mitigation Required (Highest)	STC > 38

**Refer to Section 3.1 in the NOAQA*

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

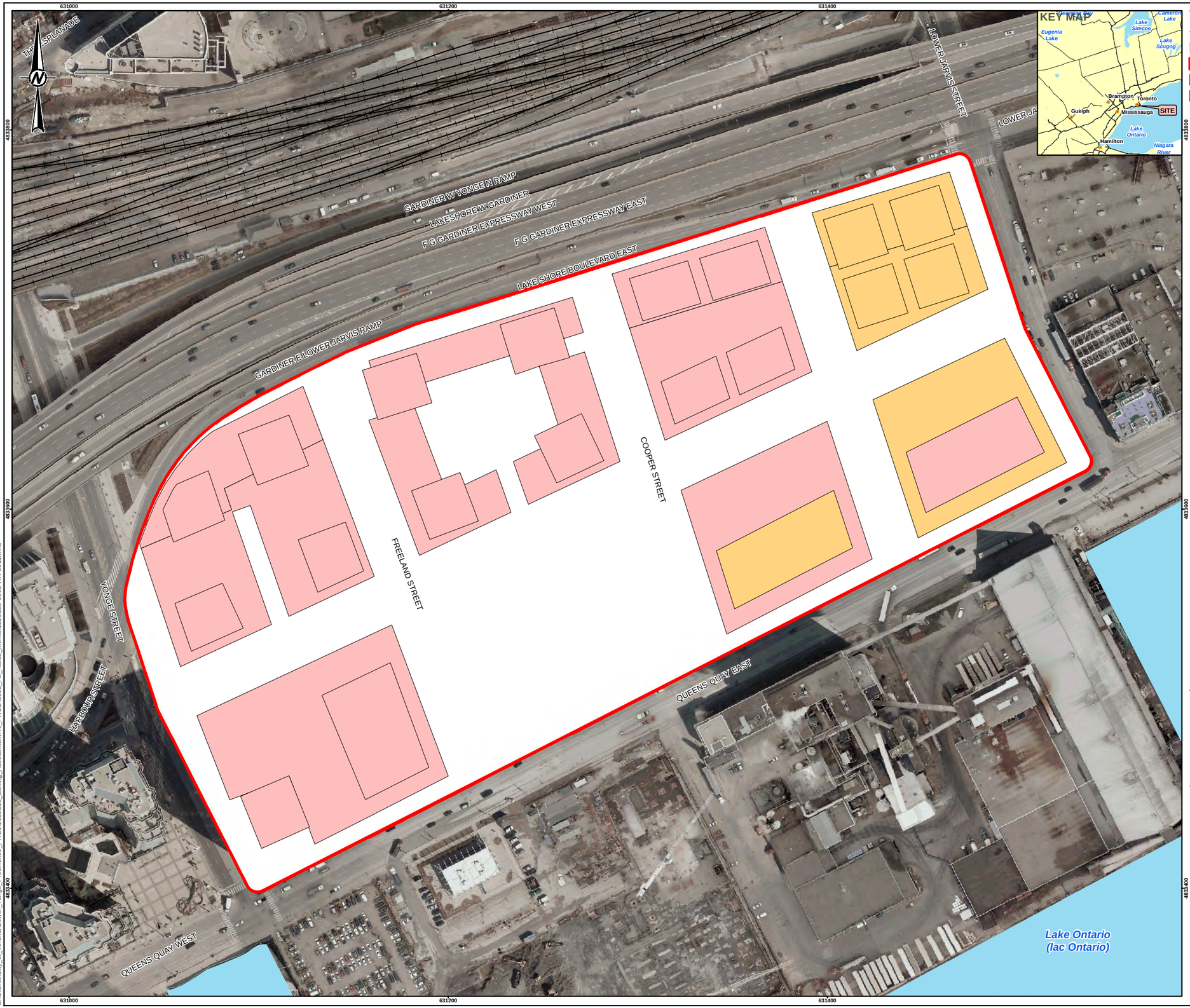
TITLE
PREDICTED NOISE LEVELS – LAND USE – ROAD TRAFFIC ONLY – SCENARIO B – DAYTIME

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SC
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm



LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct
- Level 3 Odour Nuisance
- Level 4 Odour Nuisance

0 50 100 150

1:2,000 METRES

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT GROUND LEVEL FOR SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**11**

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0011.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
LOWER JARVIS STREET
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP

LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct
- Level 3 Odour Nuisance
- Level 4 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 20 STOREYS ABOVE GROUND LEVEL FOR SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**12**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\11525228-0002-RN-0012.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Lake Simcoe
Cameron Lake
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct
- Level 1 Odour Nuisance
- Level 2 Odour Nuisance
- Level 3 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 40 STOREYS ABOVE GROUND LEVEL FOR SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**13**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\11525228-0002-RN-0013.mxd

LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct
- Level 1 Odour Nuisance
- Level 2 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150

1:2,000 METRES

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 60 STOREYS ABOVE GROUND LEVEL FOR SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	14

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0014.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LAKE SHORE BOULEVARD EAST
LOWER JARVIS STREET
LOWER JA
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct
- Level 3 Odour Nuisance
- Level 4 Odour Nuisance

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT GROUND LEVEL FOR SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**15**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0015.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LOWER JA
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY EAST
QUEENS QUAY WEST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct
- Level 3 Odour Nuisance
- Level 4 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 20 STOREYS ABOVE GROUND LEVEL FOR SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**16**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0016.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LAKE SHORE BOULEVARD EAST
LOWER JARVIS STREET
LOWER JA
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Lake Simcoe
Cameron Lake
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct
- Level 1 Odour Nuisance
- Level 2 Odour Nuisance
- Level 3 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 40 STOREYS ABOVE GROUND LEVEL FOR SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	17

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0017.mxd

631000
631200
631400
4833800
4833600

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Lake Simcoe
Cameron Lake
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct
- Level 1 Odour Nuisance
- Level 2 Odour Nuisance
- Proposed Building Does Not Extend this High

0 50 100 150
1:2,000 METRES

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED ODOUR AT 60 STOREYS ABOVE GROUND LEVEL FOR SCENARIO B V2

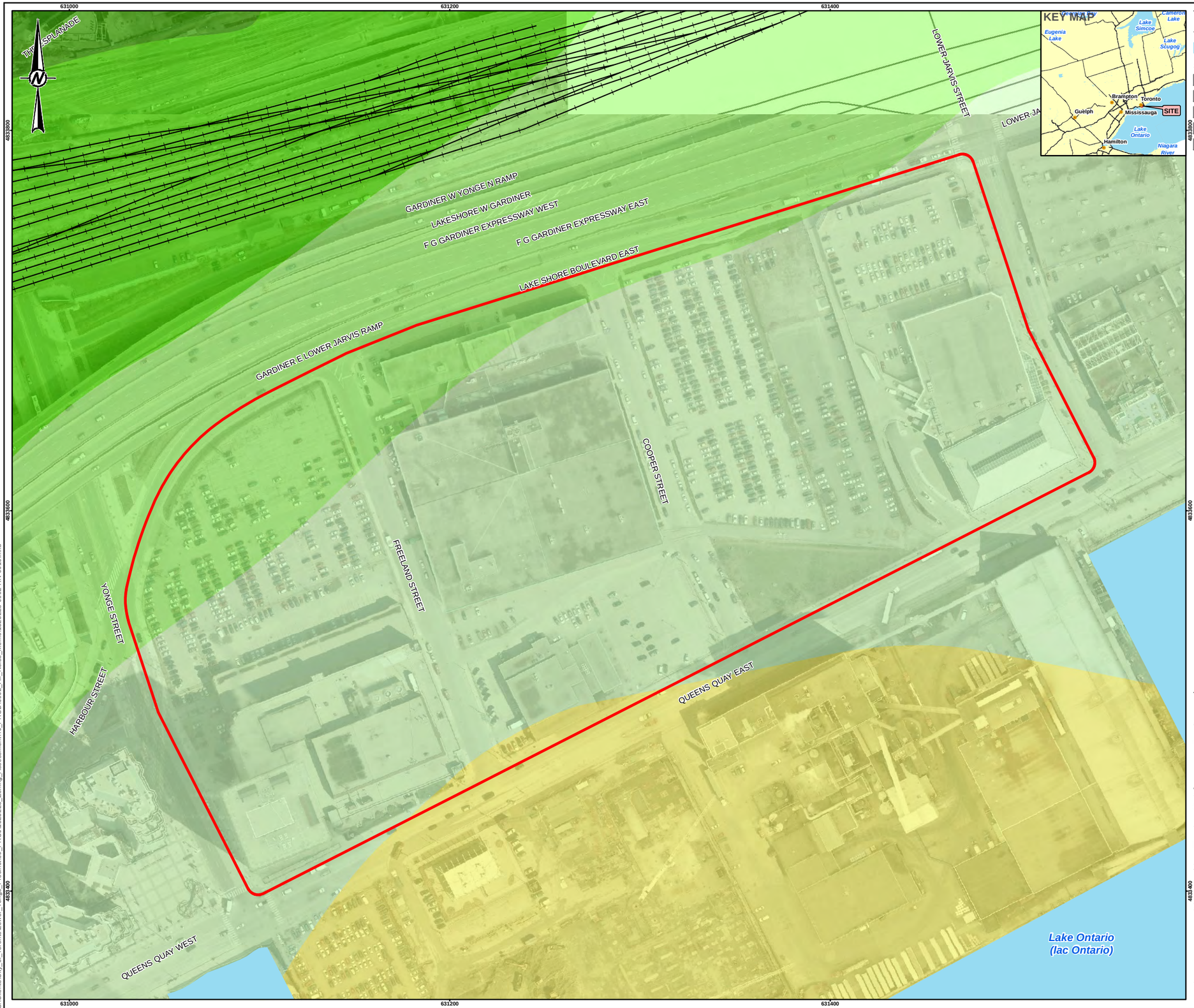
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	18

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0018.mxd



LEGEND

- Railway
- Waterbody

Ambient Concentrations in µg/m³

- 110- 120
- 120 - 130
- 130 - 140
- 140 - 150
- >150

0 50 100 150

1:2,000

Metres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
MAXIMUM ANNUAL AMBIENT GROUND LEVEL CONCENTRATIONS OF NITROGEN OXIDES (AS NO2) IN µg/m³

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	19

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0019.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LAKE SHORE BOULEVARD EAST
LOWER JARVIS STREET
LOWER JA
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

Ambient Concentrations in µg/m³
- 1.4 - 1.6
- 1.6- 1.8
- 1.8 - 2

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
MAXIMUM ANNUAL AMBIENT GROUND LEVEL CONCENTRATIONS OF BENZENE IN µg/m³

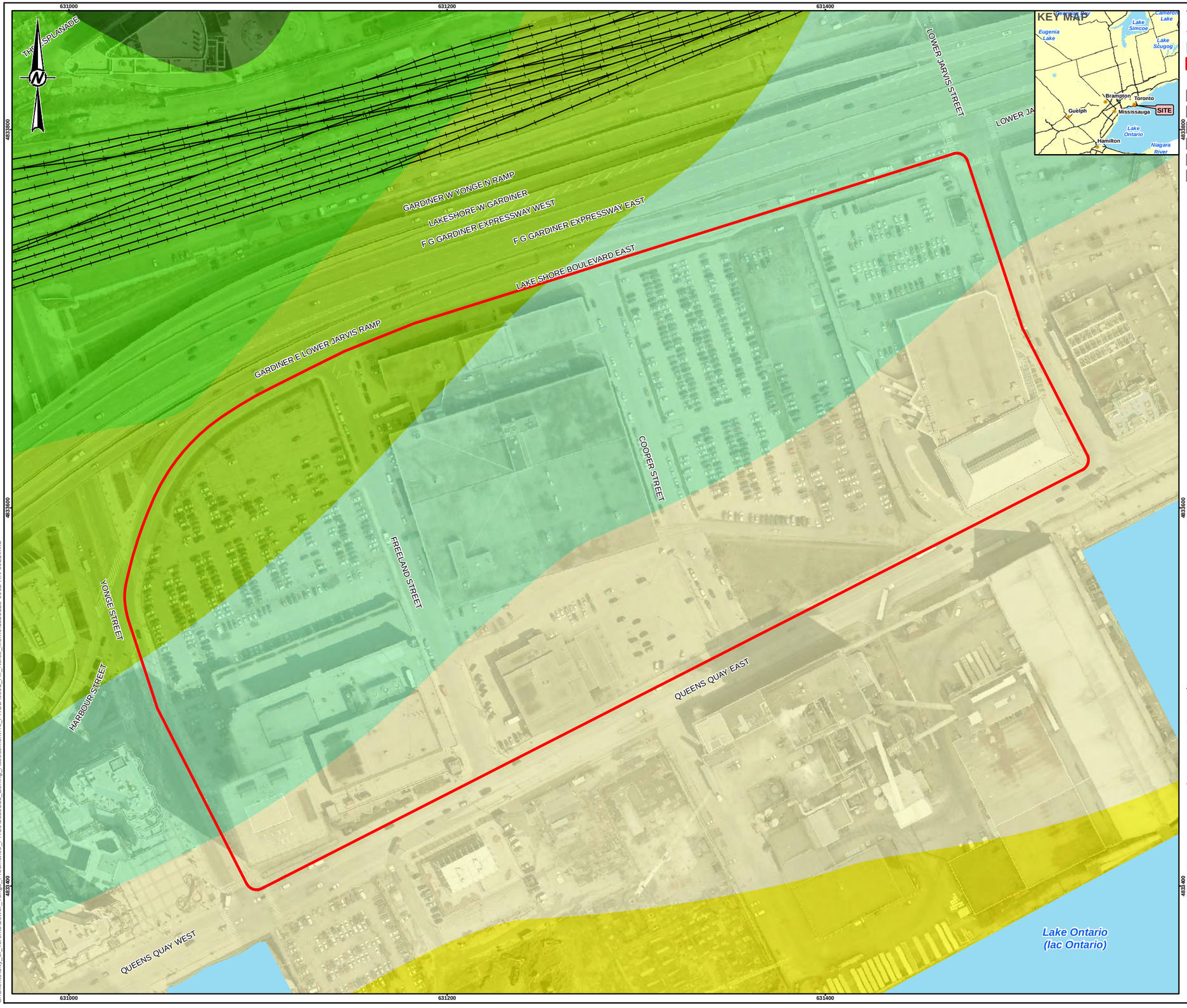
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**20**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
ANSI B
0 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0020.mxd



LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct

Ambient Concentrations in µg/m³

- 12 - 13
- 13 - 14
- 14- 15
- 15 - 16
- 16 - 17
- 17 - 18

0 50 100 150

1:2,000

Metres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
MAXIMUM ANNUAL AMBIENT GROUND LEVEL CONCENTRATIONS OF $PM_{2.5}$ IN µg/m³

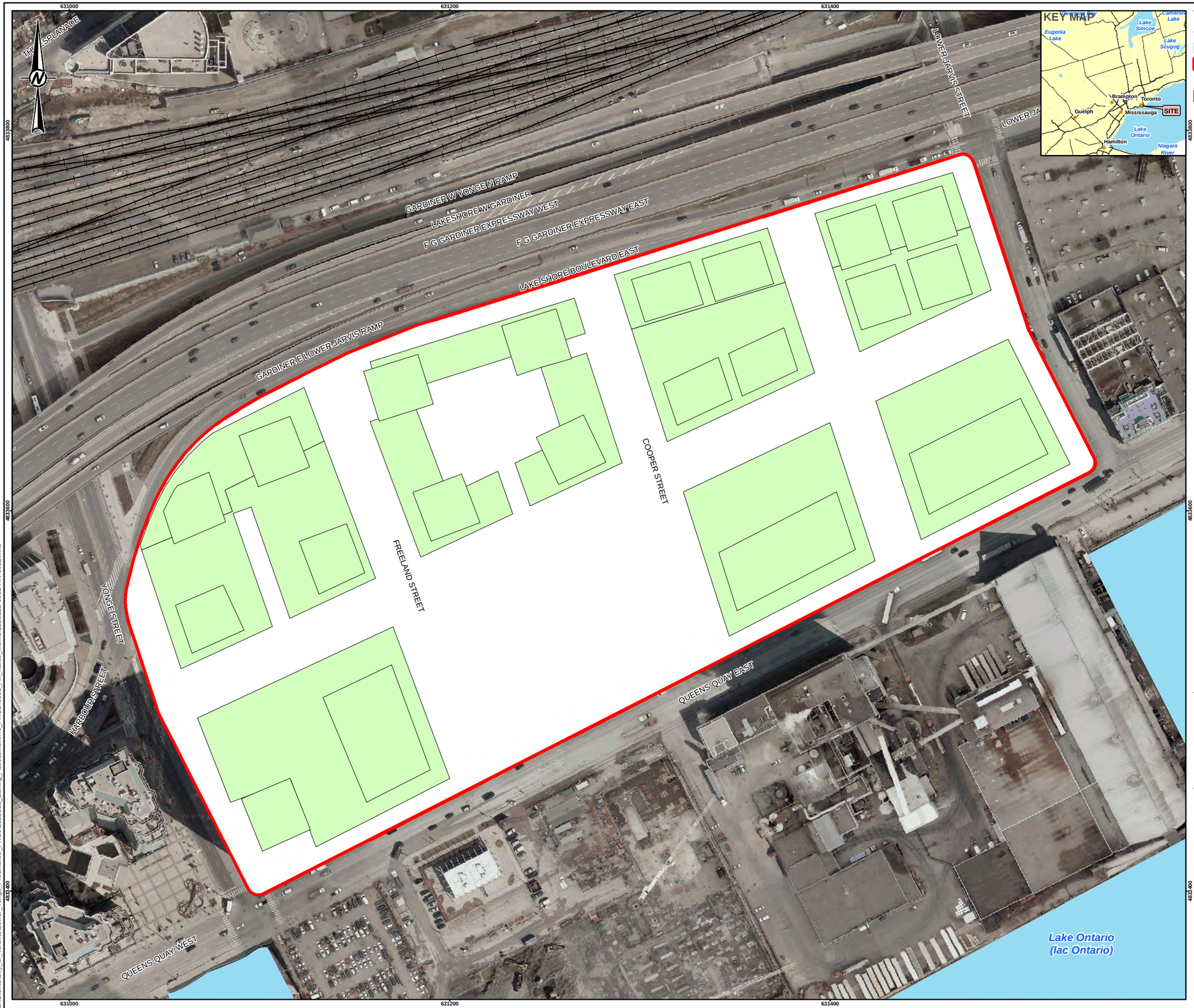
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	21

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0021.mxd



LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct

Ground

- Below MOECC POI Limits

0 50 100 150

1:2,000

Metres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT GROUND LEVEL FOR SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**22**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0022.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LOWER JA
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

20 Storeys
- Proposed Building that does not Extend this High
- Below MOECC POI Limits

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 20 STOREYS ABOVE GROUND SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**23**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\11525228-0002-RN-0023.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

33 Storeys
- Proposed Building that does not Extend this High
- Below MOECC POI Limits
- Above MOECC POI Limits

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 33 STOREYS ABOVE GROUND SCENARIO A V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**24**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
0 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\11525228-0002-RN-0024.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LOWER JA
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY WEST
QUEENS QUAY EAST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

_40_Storeys
- Proposed Building that does not Extend this High
- Below MOECC POI Limits

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 40 STOREYS ABOVE GROUND SCENARIO A V2

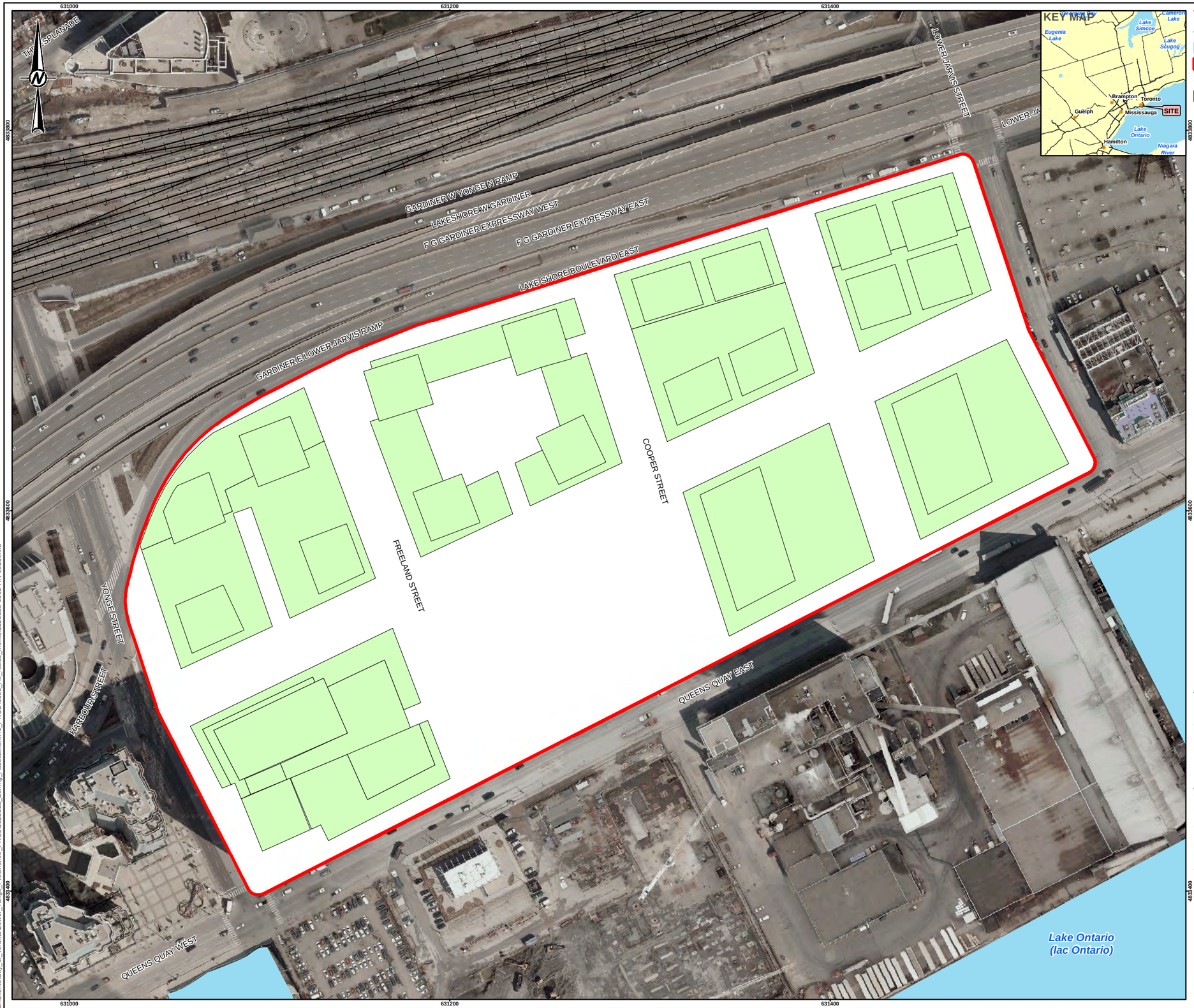
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**25**

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PRO\11525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\11525228-0002-RN-0025.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
250mm
0



LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct

Ground

- Below MOECC POI Limits

0 50 100 150

1:2,000

Metres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT GROUND LEVEL FOR SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**26**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0026.mxd

LEGEND

- Railway
- Waterbody
- Lower Yonge Precinct

20 Storeys

- Proposed Building that does not Extend this High
- Below MOECC POI Limits

0 50 100 150

1:2,000 Metres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 20 STOREYS ABOVE GROUND SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	27

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0027.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
LOWER JARVIS STREET
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY EAST
QUEENS QUAY WEST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Cameron Lake
Lake Simcoe
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

33 Storeys
- Proposed Building that does not Extend this High
- Below MOECC POI Limits
- Above MOECC POI Limits

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 33 STOREYS ABOVE GROUND SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**28**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0028.mxd

631000
631200
631400
4833800
4833600
4833400

THE ESPLANADE
GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS STREET
LOWER JA
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY EAST
QUEENS QUAY WEST
Lake Ontario
(lac Ontario)

KEY MAP
Georgian Bay
Lake Simcoe
Cameron Lake
Eugenia Lake
Lake Scugog
Brampton
Toronto
Guelph
Mississauga
SITE
Lake Ontario
Hamilton
Niagara River

LEGEND
- Railway
- Waterbody
- Lower Yonge Precinct

40 Storeys
- Proposed Building that does not Extend this High
- Below MOECC POI Limits

0 50 100 150
1:2,000
Metres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17
IMAGERY AND PROPERTY POINTS OBTAINED FROM THE CITY OF TORONTO, 20151021.

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
PREDICTED O.REG.419/05 COMPLIANCE AT 40 STOREYS ABOVE GROUND SCENARIO B V2

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-06-06
DESIGNED	SO
PREPARED	SO
REVIEWED	KA
APPROVED	KA

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0002	1.0	**29**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct99_PRO\1525228_Zoning_Assessment\40_PROD\0002_Air_Noise_Memo\1525228-0002-RN-0029.mxd

MEMORANDUM

APPENDIX A

Odour Compliance Charts for the Proposed Built Form Scenarios

Date: June 8, 2016
Project No. 1525228
To: Willie Macrae

Odour Scenario 39NRP03 –Current emissions, with carbonatation vents

Height [Storeys]	BLDG_A_1_1	BLDG_A_1_2	BLDG_A_1_3	BLDG_A_2_1	BLDG_A_2_2	BLDG_A_3_1	BLDG_A_3_2	BLDG_B_1_1	BLDG_B_1_2	BLDG_B_1_3	BLDG_B_1_4
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81											
80											
79											
78											
77											
76											
75											
74											
73											
72											
71											
70											
69											
68											
67											
66											
65											
64											
63											
62											
61											
60											
59											
58											
57											
56											
55											
54											
53											
52											
51											
50											
49											
48											
47											
46											
45											
44											
43											
42											
41											
40											
39											
38											
37											
36											
35											
34											
33											
32											
31											
30											
29				Level 4		Level 4					
28	Level 3			Level 4		Level 4					
27	Level 3			Level 4		Level 4					
26	Level 3			Level 4		Level 4					
25	Level 3			Level 4		Level 4					
24	Level 4			Level 4		Level 4					
23	Level 4			Level 4		Level 4					
22	Level 4			Level 4		Level 4					Level 3
21	Level 4			Level 4		Level 4					Level 3
20	Level 4			Level 4		Level 4					Level 4
19	Level 4			Level 4		Level 4				Level 4	Level 4
18	Level 4			Level 4		Level 4				Level 4	Level 4
17	Level 4			Level 4		Level 4				Level 4	Level 4
16	Level 4			Level 4		Level 4				Level 4	Level 4
15	Level 4			Level 4		Level 4				Level 4	Level 4
14	Level 4			Level 4		Level 4	Level 4			Level 4	Level 4
13	Level 4			Level 4		Level 4	Level 4			Level 4	Level 4
12	Level 4			Level 4		Level 4	Level 4			Level 4	Level 4
11	Level 4			Level 4		Level 4	Level 4			Level 4	Level 4
10	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 39NRP03 –Current emissions, with carbonatation vents

Height [Storeys]	BLDG_B_1_5	BLDG_B_1_6	BLDG_B_1_7	BLDG_B_1_8	BLDG_B_2_1	BLDG_B_2_2	BLDG_B_3_1	BLDG_B_3_2	BLDG_C_1_1	BLDG_C_1_2	BLDG_C_1_3
96											Level 1
95											Level 1
94											Level 1
93											Level 1
92											Level 1
91											Level 1
90											Level 1
89											Level 1
88											Level 1
87											Level 1
86											Level 1
85											Level 1
84											Level 1
83											Level 1
82											Level 1
81											Level 2
80											Level 2
79											Level 2
78											Level 2
77											Level 2
76											Level 2
75											Level 2
74											Level 2
73											Level 2
72											Level 2
71											Level 2
70											Level 2
69											Level 2
68											Level 2
67											Level 2
66											Level 2
65											Level 2
64											Level 2
63											Level 2
62											Level 2
61											Level 2
60											Level 2
59											Level 2
58											Level 2
57											Level 2
56											Level 2
55											Level 2
54											Level 2
53											Level 2
52											Level 2
51											Level 2
50											Level 2
49											Level 2
48											Level 2
47											Level 2
46											Level 2
45											Level 2
44											Level 2
43											Level 2
42											Level 2
41											Level 2
40											Level 2
39											Level 2
38			Level 2								Level 2
37			Level 2								Level 2
36			Level 2								Level 2
35		Level 1	Level 2								Level 2
34		Level 2	Level 2								Level 2
33		Level 2	Level 2								Level 2
32		Level 2	Level 2								Level 2
31		Level 2	Level 2								Level 3
30		Level 2	Level 2								Level 3
29		Level 2	Level 2			Level 4		Level 4			Level 3
28		Level 2	Level 2			Level 4		Level 4			Level 3
27		Level 2	Level 2			Level 4		Level 4			Level 3
26		Level 2	Level 2			Level 4		Level 4			Level 3
25		Level 2	Level 3			Level 4		Level 4			Level 3
24		Level 3	Level 3			Level 4		Level 4			Level 3
23		Level 3	Level 3			Level 4		Level 4			Level 3
22	Level 4	Level 3	Level 4			Level 4		Level 4			Level 3
21	Level 4	Level 4	Level 4			Level 4		Level 4			Level 3
20	Level 4	Level 4	Level 4			Level 4		Level 4			Level 3
19	Level 4	Level 4	Level 4			Level 4		Level 4			Level 3
18	Level 4	Level 4	Level 4			Level 4		Level 4			Level 3
17	Level 4	Level 4	Level 4			Level 4		Level 4			Level 3
16	Level 4	Level 4	Level 4			Level 4		Level 4			Level 4
15	Level 4	Level 4	Level 4			Level 4		Level 4			Level 4
14	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4		Level 4
13	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4		Level 4
12	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4		Level 4
11	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4		Level 4
10	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4

Odour Scenario 39NRP03 –Current emissions, with carbonatation vents

Height [Storeys]	BLDG_C_1_4	BLDG_C_1_5	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5	BLDG_C_2_6	BLDG_C_2_7	BLDG_C_3_1
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81	Level 1						Level 1	Level 1			
80	Level 1						Level 1	Level 1			
79	Level 2						Level 1	Level 1			
78	Level 2						Level 1	Level 1			
77	Level 2						Level 2	Level 1			
76	Level 2						Level 2	Level 1			
75	Level 2						Level 2	Level 1			
74	Level 2						Level 2	Level 1			
73	Level 2						Level 2	Level 1			
72	Level 2						Level 2	Level 1			
71	Level 2						Level 2	Level 1			
70	Level 2						Level 2	Level 1			
69	Level 2						Level 2	Level 1			
68	Level 2						Level 2	Level 1			
67	Level 2						Level 2	Level 1			
66	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
65	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
64	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
63	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
62	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
61	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
60	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
59	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
58	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
57	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
56	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
55	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
54	Level 2	Level 1	Level 2				Level 2	Level 1	Level 1	Level 1	
53	Level 2	Level 2	Level 2				Level 2	Level 1	Level 1	Level 1	
52	Level 2	Level 2	Level 2				Level 2	Level 1	Level 1	Level 1	
51	Level 2	Level 2	Level 2				Level 2	Level 1	Level 1	Level 2	
50	Level 2	Level 2	Level 2				Level 2	Level 1	Level 1	Level 2	
49	Level 2	Level 2	Level 2				Level 2	Level 1	Level 1	Level 2	
48	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
47	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
46	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
45	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
44	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
43	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 2	
42	Level 2	Level 2	Level 2				Level 2	Level 1	Level 2	Level 3	
41	Level 2	Level 2	Level 2				Level 2	Level 1	Level 3	Level 3	
40	Level 2	Level 2	Level 2				Level 2	Level 1	Level 3	Level 3	
39	Level 3	Level 2	Level 2				Level 2	Level 1	Level 3	Level 3	
38	Level 3	Level 2	Level 2				Level 3	Level 2	Level 3	Level 4	
37	Level 3	Level 2	Level 2				Level 3	Level 2	Level 3	Level 4	
36	Level 3	Level 2	Level 2				Level 3	Level 2	Level 3	Level 4	
35	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
34	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
33	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
32	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
31	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
30	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
29	Level 3	Level 2	Level 2				Level 3	Level 2	Level 4	Level 4	
28	Level 3	Level 2	Level 2				Level 3	Level 3	Level 4	Level 4	
27	Level 3	Level 2	Level 2				Level 3	Level 3	Level 4	Level 4	
26	Level 3	Level 2	Level 2				Level 3	Level 4	Level 4	Level 4	
25	Level 3	Level 2	Level 3				Level 4	Level 4	Level 4	Level 4	
24	Level 3	Level 2	Level 3				Level 4	Level 4	Level 4	Level 4	
23	Level 3	Level 2	Level 4				Level 4	Level 4	Level 4	Level 4	
22	Level 3	Level 2	Level 4				Level 4	Level 4	Level 4	Level 4	
21	Level 4	Level 3	Level 4				Level 4	Level 4	Level 4	Level 4	
20	Level 4	Level 3	Level 4				Level 4	Level 4	Level 4	Level 4	
19	Level 4	Level 3	Level 4				Level 4	Level 4	Level 4	Level 4	
18	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	
17	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	
16	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	
15	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	
14	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	Level 4
13	Level 4	Level 4	Level 4				Level 4	Level 4	Level 4	Level 4	Level 4
12	Level 4	Level 4	Level 4				Level 4	Level 3	Level 4	Level 4	Level 4
11	Level 4	Level 4	Level 4				Level 4	Level 3	Level 3	Level 4	Level 4
10	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 3	Level 3	Level 4	Level 4
9	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 4
8	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 39NRP03 –Current emissions, with carbonatation vents

Height [Storeys]	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81		Level 1	Level 1					Level 2	Level 1		
80		Level 1	Level 1					Level 2	Level 1		
79		Level 1	Level 1					Level 2	Level 1		
78		Level 1	Level 1					Level 2	Level 1		
77		Level 1	Level 1					Level 2	Level 1		
76		Level 1	Level 1					Level 2	Level 1		
75		Level 1	Level 1					Level 2	Level 1		
74		Level 2	Level 2					Level 2	Level 1		
73		Level 2	Level 2					Level 2	Level 1		
72		Level 2	Level 2					Level 2	Level 1		
71		Level 2	Level 2					Level 2	Level 1		
70		Level 2	Level 2					Level 2	Level 1		
69		Level 2	Level 2					Level 2	Level 1		
68		Level 2	Level 2					Level 2	Level 1		
67		Level 2	Level 2					Level 2	Level 1		
66		Level 2	Level 2	Level 1	Level 1			Level 2	Level 1	Level 1	Level 1
65		Level 2	Level 2	Level 1	Level 1			Level 2	Level 1	Level 1	Level 1
64		Level 2	Level 2	Level 1	Level 1			Level 2	Level 1	Level 1	Level 1
63		Level 2	Level 2	Level 1	Level 2			Level 2	Level 1	Level 1	Level 1
62		Level 2	Level 2	Level 1	Level 2			Level 2	Level 1	Level 1	Level 1
61		Level 2	Level 2	Level 1	Level 2			Level 2	Level 1	Level 1	Level 1
60		Level 2	Level 2	Level 1	Level 2			Level 2	Level 1	Level 1	Level 1
59		Level 2	Level 2	Level 1	Level 2			Level 2	Level 1	Level 1	Level 1
58		Level 2	Level 2	Level 1	Level 2			Level 2	Level 2	Level 1	Level 1
57		Level 2	Level 2	Level 1	Level 2			Level 2	Level 2	Level 1	Level 1
56		Level 2	Level 2	Level 1	Level 2			Level 2	Level 2	Level 1	Level 1
55		Level 2	Level 2	Level 1	Level 2			Level 2	Level 2	Level 1	Level 1
54		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
53		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
52		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
51		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
50		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
49		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 1	Level 1
48		Level 3	Level 2	Level 2	Level 2			Level 2	Level 2	Level 2	Level 1
47		Level 3	Level 2	Level 2	Level 2			Level 2	Level 2	Level 2	Level 1
46		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 1
45		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 1
44		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
43		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
42		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
41		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
40		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
39		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
38		Level 3	Level 3	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
37		Level 4	Level 3	Level 3	Level 3			Level 2	Level 2	Level 2	Level 2
36		Level 4	Level 4	Level 3	Level 3			Level 2	Level 2	Level 2	Level 2
35		Level 4	Level 4	Level 3	Level 3			Level 2	Level 2	Level 2	Level 2
34		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 2	Level 2
33		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 3	Level 2
32		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 3	Level 2
31		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 3	Level 2
30		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 3	Level 3
29		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 3	Level 3
28		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 4	Level 3
27		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 4	Level 3
26		Level 4	Level 4	Level 4	Level 4			Level 2	Level 2	Level 4	Level 3
25		Level 4	Level 4	Level 4	Level 4			Level 2	Level 3	Level 4	Level 3
24		Level 4	Level 4	Level 4	Level 4			Level 2	Level 3	Level 4	Level 4
23		Level 4	Level 4	Level 4	Level 4			Level 2	Level 3	Level 4	Level 4
22		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
21		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
20		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
19		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
18		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
17		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
16		Level 4	Level 4	Level 4	Level 4			Level 3	Level 4	Level 4	Level 4
15		Level 4	Level 4	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
14		Level 4	Level 4	Level 4	Level 4	Level 3		Level 3	Level 3	Level 4	Level 3
13		Level 4	Level 4	Level 4	Level 4	Level 3		Level 3	Level 3	Level 4	Level 3
12		Level 4	Level 4	Level 4	Level 4	Level 3		Level 3	Level 3	Level 4	Level 2
11		Level 4	Level 4	Level 4	Level 4	Level 3		Level 3	Level 3	Level 3	Level 2
10	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
9	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 4	Level 4
8	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3

Odour Scenario 36NRP03 – Current emissions, without carbonatation vents

Height [Storeys]	BLDG_A_1_1	BLDG_A_1_2	BLDG_A_1_3	BLDG_A_2_1	BLDG_A_2_2	BLDG_A_3_1	BLDG_A_3_2	BLDG_B_1_1	BLDG_B_1_2	BLDG_B_1_3	BLDG_B_1_4
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81											
80											
79											
78											
77											
76											
75											
74											
73											
72											
71											
70											
69											
68											
67											
66											
65											
64											
63											
62											
61											
60											
59											
58											
57											
56											
55											
54											
53											
52											
51											
50											
49											
48											
47											
46											
45											
44											
43											
42											
41											
40											
39											
38											
37											
36											
35											
34											
33											
32											
31											
30											
29				Level 4		Level 4					
28	Level 2			Level 4		Level 4					
27	Level 2			Level 4		Level 4					
26	Level 2			Level 4		Level 4					
25	Level 2			Level 4		Level 4					
24	Level 2			Level 4		Level 4					
23	Level 2			Level 4		Level 4					
22	Level 2			Level 4		Level 4					Level 2
21	Level 2			Level 4		Level 4					Level 2
20	Level 2			Level 4		Level 4					Level 2
19	Level 2			Level 4		Level 4				Level 2	Level 2
18	Level 2			Level 4		Level 4				Level 2	Level 2
17	Level 3			Level 4		Level 4				Level 3	Level 2
16	Level 3			Level 4		Level 4				Level 3	Level 2
15	Level 3			Level 4		Level 4				Level 3	Level 3
14	Level 3			Level 4		Level 4	Level 2			Level 3	Level 3
13	Level 3			Level 4		Level 4	Level 3			Level 3	Level 3
12	Level 3			Level 4		Level 3	Level 3			Level 3	Level 3
11	Level 3			Level 4		Level 2	Level 3			Level 3	Level 3
10	Level 3		Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
9	Level 4		Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 3	Level 3	Level 3
8	Level 4		Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 3
7	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 36NRP03 – Current emissions, without carbonatation vents

Height [Storeys]	BLDG_B_1_5	BLDG_B_1_6	BLDG_B_1_7	BLDG_B_1_8	BLDG_B_2_1	BLDG_B_2_2	BLDG_B_3_1	BLDG_B_3_2	BLDG_C_1_1	BLDG_C_1_2	BLDG_C_1_3
96											Level 1
95											Level 1
94											Level 1
93											Level 1
92											Level 1
91											Level 1
90											Level 1
89											Level 1
88											Level 1
87											Level 1
86											Level 1
85											Level 1
84											Level 1
83											Level 1
82											Level 1
81											Level 1
80											Level 1
79											Level 1
78											Level 1
77											Level 1
76											Level 1
75											Level 1
74											Level 1
73											Level 1
72											Level 1
71											Level 1
70											Level 1
69											Level 1
68											Level 1
67											Level 1
66											Level 1
65											Level 1
64											Level 1
63											Level 1
62											Level 1
61											Level 1
60											Level 1
59											Level 1
58											Level 1
57											Level 1
56											Level 1
55											Level 1
54											Level 1
53											Level 1
52											Level 1
51											Level 1
50											Level 1
49											Level 1
48											Level 1
47											Level 1
46											Level 1
45											Level 1
44											Level 1
43											Level 1
42											Level 1
41											Level 1
40											Level 1
39											Level 1
38			Level 1								Level 1
37			Level 1								Level 1
36			Level 1								Level 1
35		Level 1	Level 1								Level 1
34		Level 1	Level 1								Level 1
33		Level 1	Level 1								Level 1
32		Level 1	Level 1								Level 1
31		Level 1	Level 1								Level 1
30		Level 1	Level 1								Level 1
29		Level 1	Level 1			Level 4		Level 4			Level 1
28		Level 1	Level 1			Level 4		Level 4			Level 1
27		Level 1	Level 1			Level 4		Level 4			Level 1
26		Level 1	Level 2			Level 4		Level 4			Level 1
25		Level 1	Level 2			Level 4		Level 4			Level 1
24		Level 1	Level 2			Level 4		Level 4			Level 1
23		Level 2	Level 2			Level 4		Level 4			Level 1
22	Level 2	Level 2	Level 2			Level 4		Level 4			Level 2
21	Level 2	Level 2	Level 2			Level 4		Level 4			Level 2
20	Level 2	Level 2	Level 2			Level 4		Level 4			Level 2
19	Level 2	Level 2	Level 2			Level 4		Level 4			Level 2
18	Level 2	Level 2	Level 2			Level 4		Level 4			Level 2
17	Level 3	Level 2	Level 2			Level 4		Level 4			Level 2
16	Level 3	Level 2	Level 3			Level 4		Level 4			Level 2
15	Level 3	Level 3	Level 3			Level 4		Level 4			Level 2
14	Level 3	Level 3	Level 3			Level 4		Level 4	Level 2		Level 3
13	Level 3	Level 3	Level 3			Level 4		Level 4	Level 3		Level 3
12	Level 3	Level 3	Level 3			Level 4		Level 3	Level 3		Level 3
11	Level 3	Level 3	Level 3			Level 3		Level 2	Level 3		Level 3
10	Level 3	Level 3	Level 3		Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3
9	Level 4	Level 3	Level 3		Level 4	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3
8	Level 4	Level 3	Level 4		Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 3
7	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 36NRP03 – Current emissions, without carbonatation vents

Height [Storeys]	BLDG_C_1_4	BLDG_C_1_5	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5	BLDG_C_2_6	BLDG_C_2_7	BLDG_C_3_1
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81	Level 1						Level 1	Level 1			
80	Level 1						Level 1	Level 1			
79	Level 1						Level 1	Level 1			
78	Level 1						Level 1	Level 1			
77	Level 1						Level 1	Level 1			
76	Level 1						Level 1	Level 1			
75	Level 1						Level 1	Level 1			
74	Level 1						Level 1	Level 1			
73	Level 1						Level 1	Level 1			
72	Level 1						Level 1	Level 1			
71	Level 1						Level 1	Level 1			
70	Level 1						Level 1	Level 1			
69	Level 1						Level 1	Level 1			
68	Level 1						Level 1	Level 1			
67	Level 1						Level 1	Level 1			
66	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
65	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
64	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
63	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
62	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
61	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
60	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
59	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
58	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
57	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
56	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
55	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
54	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
53	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
52	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
51	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
50	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
49	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
48	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
47	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
46	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
45	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
44	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
43	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
42	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
41	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
40	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
39	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
38	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
37	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
36	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
35	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
34	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
33	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
32	Level 1	Level 1	Level 1				Level 1	Level 2	Level 2	Level 2	
31	Level 1	Level 1	Level 1				Level 2	Level 2	Level 2	Level 2	
30	Level 1	Level 1	Level 1				Level 2	Level 2	Level 2	Level 2	
29	Level 1	Level 1	Level 1				Level 2	Level 2	Level 2	Level 2	
28	Level 2	Level 1	Level 1				Level 2	Level 2	Level 2	Level 3	
27	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
26	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
25	Level 2	Level 2	Level 2				Level 2	Level 2	Level 2	Level 3	
24	Level 2	Level 2	Level 2				Level 2	Level 2	Level 2	Level 3	
23	Level 2	Level 2	Level 2				Level 2	Level 2	Level 2	Level 3	
22	Level 2	Level 2	Level 2				Level 2	Level 2	Level 2	Level 3	
21	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
20	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
19	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
18	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
17	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
16	Level 2	Level 2	Level 3				Level 2	Level 3	Level 3	Level 3	
15	Level 2	Level 3	Level 3				Level 2	Level 3	Level 3	Level 3	
14	Level 3	Level 3	Level 3				Level 2	Level 3	Level 3	Level 3	Level 3
13	Level 3	Level 3	Level 3				Level 3	Level 3	Level 3	Level 3	Level 3
12	Level 3	Level 3	Level 3				Level 3	Level 3	Level 3	Level 3	Level 2
11	Level 3	Level 3	Level 3				Level 3	Level 3	Level 3	Level 3	Level 2
10	Level 3	Level 3	Level 3		Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 2
9	Level 3	Level 3	Level 3		Level 3	Level 3	Level 3	Level 3	Level 3	Level 4	Level 3
8	Level 3	Level 4	Level 4		Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
7	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 3	Level 4	Level 3	Level 3
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 3
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 3	Level 4	Level 3	Level 4

Odour Scenario 36NRP03 – Current emissions, without carbonatation vents

Height [Storeys]	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81		Level 1	Level 1					Level 1	Level 1		
80		Level 1	Level 1					Level 1	Level 1		
79		Level 1	Level 1					Level 1	Level 1		
78		Level 1	Level 1					Level 1	Level 1		
77		Level 1	Level 1					Level 1	Level 1		
76		Level 1	Level 1					Level 1	Level 1		
75		Level 1	Level 1					Level 1	Level 1		
74		Level 1	Level 1					Level 1	Level 1		
73		Level 1	Level 1					Level 1	Level 1		
72		Level 1	Level 1					Level 1	Level 1		
71		Level 1	Level 1					Level 1	Level 1		
70		Level 1	Level 1					Level 1	Level 1		
69		Level 1	Level 1					Level 1	Level 1		
68		Level 1	Level 1					Level 1	Level 1		
67		Level 1	Level 1					Level 1	Level 1		
66		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
65		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
64		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
63		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
62		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
61		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
60		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
59		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
58		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
57		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
56		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
55		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
54		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
53		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
52		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
51		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
50		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
49		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
48		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
47		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
46		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
45		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
44		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
43		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
42		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
41		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
40		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
39		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 2	Level 1
38		Level 1	Level 1	Level 1	Level 1			Level 2	Level 1	Level 2	Level 2
37		Level 1	Level 1	Level 1	Level 1			Level 2	Level 2	Level 2	Level 2
36		Level 1	Level 1	Level 1	Level 1			Level 2	Level 2	Level 2	Level 2
35		Level 1	Level 1	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
34		Level 1	Level 2	Level 2	Level 2			Level 2	Level 2	Level 2	Level 2
33		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
32		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
31		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
30		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
29		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 2
28		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 2
27		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 2
26		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 2
25		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 3
24		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 3
23		Level 2	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 3
22		Level 3	Level 2	Level 3	Level 3			Level 2	Level 2	Level 3	Level 3
21		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 3
20		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 3
19		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 4
18		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 4
17		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 4
16		Level 3	Level 3	Level 3	Level 3			Level 3	Level 3	Level 3	Level 4
15		Level 3	Level 3	Level 3	Level 3			Level 3	Level 2	Level 3	Level 3
14		Level 3	Level 3	Level 3	Level 3	Level 3		Level 3	Level 2	Level 3	Level 3
13		Level 3	Level 3	Level 3	Level 3	Level 2		Level 2	Level 2	Level 3	Level 3
12		Level 2	Level 2	Level 3	Level 3	Level 2		Level 2	Level 2	Level 2	Level 2
11		Level 2	Level 2	Level 3	Level 2	Level 2		Level 2	Level 2	Level 2	Level 2
10	Level 3	Level 2	Level 2	Level 3	Level 3	Level 2	Level 2	Level 2	Level 2	Level 2	Level 2
9	Level 4	Level 3	Level 2	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
8	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
7	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
6	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 4	Level 4	Level 3	Level 4	Level 4
5	Level 4	Level 3	Level 3	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 3	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 43NRP03 – Potential future emissions, with carbonatation vents

Height [Storeys]	BLDG_A_1_1	BLDG_A_1_2	BLDG_A_1_3	BLDG_A_2_1	BLDG_A_2_2	BLDG_A_3_1	BLDG_A_3_2	BLDG_B_1_1	BLDG_B_1_2	BLDG_B_1_3
96										
95										
94										
93										
92										
91										
90										
89										
88										
87										
86										
85										
84										
83										
82										
81										
80										
79										
78										
77										
76										
75										
74										
73										
72										
71										
70										
69										
68										
67										
66										
65										
64										
63										
62										
61										
60										
59										
58										
57										
56										
55										
54										
53										
52										
51										
50										
49										
48										
47										
46										
45										
44										
43										
42										
41										
40										
39										
38										
37										
36										
35										
34										
33										
32										
31										
30										
29				Level 4		Level 4				
28	Level 4			Level 4		Level 4				
27	Level 4			Level 4		Level 4				
26	Level 4			Level 4		Level 4				
25	Level 4			Level 4		Level 4				
24	Level 4			Level 4		Level 4				
23	Level 4			Level 4		Level 4				
22	Level 4			Level 4		Level 4				
21	Level 4			Level 4		Level 4				
20	Level 4			Level 4		Level 4				
19	Level 4			Level 4		Level 4				Level 4
18	Level 4			Level 4		Level 4				Level 4
17	Level 4			Level 4		Level 4				Level 4
16	Level 4			Level 4		Level 4				Level 4
15	Level 4			Level 4		Level 4				Level 4
14	Level 4			Level 4		Level 4	Level 4			Level 4
13	Level 4			Level 4		Level 4	Level 4			Level 4
12	Level 4			Level 4		Level 4	Level 4			Level 4
11	Level 4			Level 4		Level 4	Level 4			Level 4
10	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 43NRP03 – Potential future emissions, with carbonatation vents

Height [Storeys]	BLDG_B_1_4	BLDG_B_1_5	BLDG_B_1_6	BLDG_B_1_7	BLDG_B_1_8	BLDG_B_2_1	BLDG_B_2_2	BLDG_B_3_1	BLDG_B_3_2	BLDG_C_1_1
96										
95										
94										
93										
92										
91										
90										
89										
88										
87										
86										
85										
84										
83										
82										
81										
80										
79										
78										
77										
76										
75										
74										
73										
72										
71										
70										
69										
68										
67										
66										
65										
64										
63										
62										
61										
60										
59										
58										
57										
56										
55										
54										
53										
52										
51										
50										
49										
48										
47										
46										
45										
44										
43										
42										
41										
40										
39										
38				Level 3						
37				Level 3						
36				Level 3						
35			Level 2	Level 3						
34			Level 2	Level 3						
33			Level 2	Level 3						
32			Level 3	Level 3						
31			Level 3	Level 3						
30			Level 3	Level 3						
29			Level 3	Level 4			Level 4		Level 4	
28			Level 3	Level 4			Level 4		Level 4	
27			Level 3	Level 4			Level 4		Level 4	
26			Level 4	Level 4			Level 4		Level 4	
25			Level 4	Level 4			Level 4		Level 4	
24			Level 4	Level 4			Level 4		Level 4	
23			Level 4	Level 4			Level 4		Level 4	
22	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
21	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
20	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
19	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
18	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
17	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
16	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
15	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	
14	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4
13	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4
12	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4
11	Level 4	Level 4	Level 4	Level 4			Level 4		Level 4	Level 4
10	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3	Level 4	Level 4

Odour Scenario 43NRP03 – Potential future emissions, with carbonatation vents

Height [Storeys]	BLDG_C_1_2	BLDG_C_1_3	BLDG_C_1_4	BLDG_C_1_5	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5
96		Level 1								
95		Level 1								
94		Level 1								
93		Level 1								
92		Level 1								
91		Level 1								
90		Level 1								
89		Level 1								
88		Level 1								
87		Level 1								
86		Level 1								
85		Level 1								
84		Level 1								
83		Level 1								
82		Level 1								
81		Level 2	Level 1						Level 1	Level 1
80		Level 3	Level 1						Level 1	Level 1
79		Level 3	Level 3						Level 1	Level 1
78		Level 3	Level 3						Level 1	Level 1
77		Level 3	Level 3						Level 3	Level 1
76		Level 3	Level 3						Level 3	Level 1
75		Level 3	Level 3						Level 3	Level 1
74		Level 3	Level 3						Level 3	Level 1
73		Level 3	Level 3						Level 3	Level 1
72		Level 3	Level 3						Level 3	Level 2
71		Level 3	Level 3						Level 3	Level 2
70		Level 3	Level 3						Level 3	Level 2
69		Level 3	Level 3						Level 3	Level 2
68		Level 3	Level 3						Level 3	Level 2
67		Level 3	Level 3						Level 3	Level 2
66		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
65		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
64		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
63		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
62		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
61		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
60		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
59		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
58		Level 3	Level 3	Level 2	Level 3				Level 3	Level 2
57		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
56		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
55		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
54		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
53		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
52		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
51		Level 3	Level 4	Level 2	Level 3				Level 3	Level 2
50		Level 3	Level 4	Level 2	Level 3				Level 4	Level 2
49		Level 3	Level 4	Level 2	Level 3				Level 4	Level 2
48		Level 3	Level 4	Level 2	Level 3				Level 4	Level 2
47		Level 3	Level 4	Level 2	Level 3				Level 4	Level 2
46		Level 3	Level 4	Level 3	Level 3				Level 4	Level 2
45		Level 3	Level 4	Level 3	Level 3				Level 4	Level 2
44		Level 3	Level 4	Level 3	Level 3				Level 4	Level 2
43		Level 3	Level 4	Level 3	Level 3				Level 4	Level 2
42		Level 3	Level 4	Level 3	Level 3				Level 4	Level 2
41		Level 4	Level 4	Level 3	Level 3				Level 4	Level 2
40		Level 4	Level 4	Level 3	Level 3				Level 4	Level 2
39		Level 4	Level 4	Level 3	Level 3				Level 4	Level 2
38		Level 4	Level 4	Level 3	Level 3				Level 4	Level 2
37		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
36		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
35		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
34		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
33		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
32		Level 4	Level 4	Level 3	Level 3				Level 4	Level 3
31		Level 4	Level 4	Level 3	Level 4				Level 4	Level 3
30		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
29		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
28		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
27		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
26		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
25		Level 4	Level 4	Level 3	Level 4				Level 4	Level 4
24		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
23		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
22		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
21		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
20		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
19		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
18		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
17		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
16		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
15		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
14		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
13		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
12		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
11		Level 4	Level 4	Level 4	Level 4				Level 4	Level 4
10	Level 4	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4
9	Level 4	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 43NRP03 – Potential future emissions, with carbonatation vents

Height [Storeys]	BLDG_C_2_6	BLDG_C_2_7	BLDG_C_3_1	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2
96										
95										
94										
93										
92										
91										
90										
89										
88										
87										
86										
85										
84										
83										
82										
81					Level 2	Level 2				
80					Level 2	Level 2				
79					Level 2	Level 2				
78					Level 2	Level 2				
77					Level 2	Level 2				
76					Level 2	Level 2				
75					Level 2	Level 2				
74					Level 3	Level 3				
73					Level 4	Level 4				
72					Level 4	Level 4				
71					Level 4	Level 4				
70					Level 4	Level 4				
69					Level 4	Level 4				
68					Level 4	Level 4				
67					Level 4	Level 4				
66	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
65	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
64	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
63	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
62	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
61	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
60	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
59	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
58	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
57	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
56	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
55	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
54	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
53	Level 2	Level 2			Level 4	Level 4	Level 2	Level 2		
52	Level 2	Level 2			Level 4	Level 4	Level 2	Level 3		
51	Level 2	Level 2			Level 4	Level 4	Level 2	Level 3		
50	Level 2	Level 2			Level 4	Level 4	Level 2	Level 3		
49	Level 2	Level 3			Level 4	Level 4	Level 2	Level 3		
48	Level 3	Level 3			Level 4	Level 4	Level 2	Level 3		
47	Level 3	Level 3			Level 4	Level 4	Level 2	Level 3		
46	Level 3	Level 3			Level 4	Level 4	Level 3	Level 3		
45	Level 3	Level 3			Level 4	Level 4	Level 3	Level 3		
44	Level 4	Level 4			Level 4	Level 4	Level 3	Level 3		
43	Level 4	Level 4			Level 4	Level 4	Level 3	Level 3		
42	Level 4	Level 4			Level 4	Level 4	Level 3	Level 3		
41	Level 4	Level 4			Level 4	Level 4	Level 3	Level 3		
40	Level 4	Level 4			Level 4	Level 4	Level 3	Level 3		
39	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
38	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
37	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
36	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
35	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
34	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
33	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
32	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
31	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
30	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
29	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
28	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
27	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
26	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
25	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
24	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
23	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
22	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
21	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
20	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
19	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
18	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
17	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
16	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
15	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4		
14	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	
13	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	
12	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	
11	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	
10	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Height [Storeys]	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96				
95				
94				
93				
92				
91				
90				
89				
88				
87				
86				
85				
84				
83				
82				
81	Level 3	Level 2		
80	Level 3	Level 2		
79	Level 3	Level 2		
78	Level 3	Level 2		
77	Level 3	Level 2		
76	Level 3	Level 2		
75	Level 3	Level 2		
74	Level 3	Level 2		
73	Level 3	Level 2		
72	Level 3	Level 2		
71	Level 3	Level 2		
70	Level 3	Level 2		
69	Level 3	Level 2		
68	Level 3	Level 2		
67	Level 3	Level 2		
66	Level 3	Level 2	Level 2	Level 1
65	Level 3	Level 2	Level 2	Level 1
64	Level 3	Level 2	Level 2	Level 1
63	Level 3	Level 2	Level 2	Level 1
62	Level 3	Level 2	Level 2	Level 1
61	Level 3	Level 2	Level 2	Level 2
60	Level 3	Level 2	Level 2	Level 2
59	Level 3	Level 2	Level 2	Level 2
58	Level 3	Level 2	Level 2	Level 2
57	Level 3	Level 2	Level 2	Level 2
56	Level 3	Level 2	Level 2	Level 2
55	Level 3	Level 2	Level 2	Level 2
54	Level 3	Level 2	Level 2	Level 2
53	Level 3	Level 2	Level 2	Level 2
52	Level 3	Level 2	Level 2	Level 2
51	Level 3	Level 2	Level 2	Level 2
50	Level 3	Level 2	Level 2	Level 2
49	Level 3	Level 2	Level 2	Level 2
48	Level 3	Level 2	Level 2	Level 2
47	Level 3	Level 3	Level 2	Level 2
46	Level 3	Level 3	Level 3	Level 2
45	Level 3	Level 3	Level 3	Level 2
44	Level 3	Level 3	Level 3	Level 2
43	Level 3	Level 3	Level 3	Level 3
42	Level 3	Level 3	Level 3	Level 3
41	Level 3	Level 3	Level 3	Level 3
40	Level 3	Level 3	Level 3	Level 3
39	Level 3	Level 3	Level 3	Level 3
38	Level 3	Level 3	Level 3	Level 3
37	Level 3	Level 3	Level 3	Level 3
36	Level 3	Level 3	Level 4	Level 4
35	Level 3	Level 3	Level 4	Level 4
34	Level 3	Level 3	Level 4	Level 4
33	Level 3	Level 3	Level 4	Level 4
32	Level 3	Level 3	Level 4	Level 4
31	Level 4	Level 3	Level 4	Level 4
30	Level 4	Level 3	Level 4	Level 4
29	Level 4	Level 3	Level 4	Level 4
28	Level 4	Level 3	Level 4	Level 4
27	Level 4	Level 4	Level 4	Level 4
26	Level 4	Level 4	Level 4	Level 4
25	Level 4	Level 4	Level 4	Level 4
24	Level 4	Level 4	Level 4	Level 4
23	Level 4	Level 4	Level 4	Level 4
22	Level 4	Level 4	Level 4	Level 4
21	Level 4	Level 4	Level 4	Level 4
20	Level 4	Level 4	Level 4	Level 4
19	Level 4	Level 4	Level 4	Level 4
18	Level 4	Level 4	Level 4	Level 4
17	Level 4	Level 4	Level 4	Level 4
16	Level 4	Level 4	Level 4	Level 4
15	Level 4	Level 4	Level 4	Level 4
14	Level 4	Level 4	Level 4	Level 4
13	Level 4	Level 4	Level 4	Level 4
12	Level 4	Level 4	Level 4	Level 3
11	Level 4	Level 4	Level 4	Level 3
10	Level 4	Level 4	Level 4	Level 3
9	Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4	Level 3
4	Level 4	Level 4	Level 4	Level 3
3	Level 4	Level 4	Level 4	Level 3
2	Level 4	Level 4	Level 4	Level 3
1	Level 4	Level 4	Level 4	Level 3

Odour Scenario 38NRP03 – Potential future emissions, without carbonatation vents

Height [Storeys]	BLDG_A_1_1	BLDG_A_1_2	BLDG_A_1_3	BLDG_A_2_1	BLDG_A_2_2	BLDG_A_3_1	BLDG_A_3_2	BLDG_B_1_1	BLDG_B_1_2	BLDG_B_1_3	BLDG_B_1_4
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81											
80											
79											
78											
77											
76											
75											
74											
73											
72											
71											
70											
69											
68											
67											
66											
65											
64											
63											
62											
61											
60											
59											
58											
57											
56											
55											
54											
53											
52											
51											
50											
49											
48											
47											
46											
45											
44											
43											
42											
41											
40											
39											
38											
37											
36											
35											
34											
33											
32											
31											
30											
29				Level 4		Level 4					
28	Level 2			Level 4		Level 4					
27	Level 2			Level 4		Level 4					
26	Level 2			Level 4		Level 4					
25	Level 2			Level 4		Level 4					
24	Level 3			Level 4		Level 4					
23	Level 3			Level 4		Level 4					
22	Level 3			Level 4		Level 4					Level 2
21	Level 3			Level 4		Level 4					Level 2
20	Level 3			Level 4		Level 4					Level 3
19	Level 3			Level 4		Level 4				Level 3	Level 3
18	Level 3			Level 4		Level 4				Level 3	Level 3
17	Level 3			Level 4		Level 4				Level 3	Level 3
16	Level 4			Level 4		Level 4				Level 4	Level 3
15	Level 4			Level 4		Level 4				Level 4	Level 3
14	Level 4			Level 4		Level 4	Level 3			Level 4	Level 3
13	Level 4			Level 4		Level 4	Level 3			Level 4	Level 4
12	Level 4			Level 4		Level 4	Level 3			Level 4	Level 4
11	Level 4			Level 4		Level 3	Level 4			Level 4	Level 4
10	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 38NRP03 – Potential future emissions, without carbonatation vents

Height [Storeys]	BLDG_B_1_5	BLDG_B_1_6	BLDG_B_1_7	BLDG_B_1_8	BLDG_B_2_1	BLDG_B_2_2	BLDG_B_3_1	BLDG_B_3_2	BLDG_C_1_1	BLDG_C_1_2	BLDG_C_1_3
96											Level 1
95											Level 1
94											Level 1
93											Level 1
92											Level 1
91											Level 1
90											Level 1
89											Level 1
88											Level 1
87											Level 1
86											Level 1
85											Level 1
84											Level 1
83											Level 1
82											Level 1
81											Level 1
80											Level 1
79											Level 1
78											Level 1
77											Level 1
76											Level 1
75											Level 1
74											Level 1
73											Level 1
72											Level 1
71											Level 1
70											Level 1
69											Level 1
68											Level 1
67											Level 1
66											Level 1
65											Level 1
64											Level 1
63											Level 1
62											Level 1
61											Level 1
60											Level 1
59											Level 1
58											Level 1
57											Level 1
56											Level 1
55											Level 1
54											Level 1
53											Level 1
52											Level 1
51											Level 1
50											Level 1
49											Level 1
48											Level 1
47											Level 1
46											Level 1
45											Level 1
44											Level 1
43											Level 1
42											Level 1
41											Level 1
40											Level 1
39											Level 1
38			Level 1								Level 1
37			Level 1								Level 1
36			Level 1								Level 1
35		Level 1	Level 1								Level 1
34		Level 1	Level 1								Level 1
33		Level 1	Level 1								Level 1
32		Level 1	Level 1								Level 1
31		Level 1	Level 1								Level 1
30		Level 1	Level 2								Level 1
29		Level 2	Level 2			Level 4		Level 4			Level 2
28		Level 2	Level 2			Level 4		Level 4			Level 2
27		Level 2	Level 2			Level 4		Level 4			Level 2
26		Level 2	Level 2			Level 4		Level 4			Level 2
25		Level 2	Level 2			Level 4		Level 4			Level 2
24		Level 2	Level 2			Level 4		Level 4			Level 2
23		Level 2	Level 2			Level 4		Level 4			Level 2
22	Level 3	Level 2	Level 2			Level 4		Level 4			Level 2
21	Level 3	Level 2	Level 3			Level 4		Level 4			Level 2
20	Level 3	Level 2	Level 3			Level 4		Level 4			Level 2
19	Level 3	Level 2	Level 3			Level 4		Level 4			Level 2
18	Level 3	Level 3	Level 3			Level 4		Level 4			Level 2
17	Level 3	Level 3	Level 3			Level 4		Level 4			Level 3
16	Level 4	Level 3	Level 3			Level 4		Level 4			Level 3
15	Level 4	Level 3	Level 4			Level 4		Level 4			Level 3
14	Level 4	Level 3	Level 4			Level 4		Level 4	Level 3		Level 3
13	Level 4	Level 3	Level 4			Level 4		Level 4	Level 3		Level 3
12	Level 4	Level 4	Level 4			Level 4		Level 4	Level 3		Level 4
11	Level 4	Level 4	Level 4			Level 4		Level 3	Level 4		Level 4
10	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
9	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
8	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
7	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
6	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
5	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 38NRP03 – Potential future emissions, without carbonatation vents

Height [Storeys]	BLDG_C_1_4	BLDG_C_1_5	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5	BLDG_C_2_6	BLDG_C_2_7	BLDG_C_3_1
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81	Level 1						Level 1	Level 1			
80	Level 1						Level 1	Level 1			
79	Level 1						Level 1	Level 1			
78	Level 1						Level 1	Level 1			
77	Level 1						Level 1	Level 1			
76	Level 1						Level 1	Level 1			
75	Level 1						Level 1	Level 1			
74	Level 1						Level 1	Level 1			
73	Level 1						Level 1	Level 1			
72	Level 1						Level 1	Level 1			
71	Level 1						Level 1	Level 1			
70	Level 1						Level 1	Level 1			
69	Level 1						Level 1	Level 1			
68	Level 1						Level 1	Level 1			
67	Level 1						Level 1	Level 1			
66	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
65	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
64	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
63	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
62	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
61	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
60	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
59	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
58	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
57	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
56	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
55	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
54	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
53	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
52	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
51	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
50	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
49	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
48	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
47	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
46	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
45	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
44	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
43	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
42	Level 1	Level 1	Level 1				Level 1	Level 1	Level 1	Level 1	
41	Level 1	Level 1	Level 1				Level 1	Level 1	Level 2	Level 2	
40	Level 1	Level 1	Level 1				Level 2	Level 1	Level 2	Level 2	
39	Level 1	Level 1	Level 1				Level 2	Level 1	Level 2	Level 2	
38	Level 1	Level 1	Level 1				Level 2	Level 1	Level 2	Level 2	
37	Level 2	Level 1	Level 1				Level 2	Level 1	Level 2	Level 2	
36	Level 2	Level 1	Level 1				Level 2	Level 1	Level 2	Level 2	
35	Level 2	Level 1	Level 1				Level 2	Level 2	Level 2	Level 2	
34	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
33	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
32	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
31	Level 2	Level 1	Level 2				Level 2	Level 2	Level 2	Level 3	
30	Level 2	Level 1	Level 2				Level 2	Level 2	Level 3	Level 3	
29	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 3	
28	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 4	
27	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 4	
26	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 4	
25	Level 2	Level 2	Level 2				Level 2	Level 3	Level 3	Level 4	
24	Level 2	Level 2	Level 2				Level 3	Level 3	Level 3	Level 4	
23	Level 2	Level 2	Level 2				Level 3	Level 3	Level 3	Level 4	
22	Level 2	Level 2	Level 2				Level 3	Level 3	Level 3	Level 4	
21	Level 2	Level 2	Level 2				Level 3	Level 3	Level 3	Level 4	
20	Level 2	Level 2	Level 3				Level 3	Level 3	Level 3	Level 4	
19	Level 3	Level 2	Level 3				Level 3	Level 3	Level 3	Level 4	
18	Level 3	Level 3	Level 3				Level 3	Level 3	Level 3	Level 4	
17	Level 3	Level 3	Level 3				Level 3	Level 4	Level 3	Level 4	
16	Level 3	Level 3	Level 3				Level 3	Level 4	Level 4	Level 4	
15	Level 3	Level 3	Level 3				Level 3	Level 4	Level 4	Level 4	
14	Level 3	Level 3	Level 4				Level 3	Level 4	Level 4	Level 4	Level 4
13	Level 3	Level 4	Level 4				Level 3	Level 4	Level 4	Level 4	Level 3
12	Level 4	Level 4	Level 4				Level 3	Level 4	Level 4	Level 4	Level 3
11	Level 4	Level 4	Level 4				Level 3	Level 4	Level 4	Level 4	Level 3
10	Level 4	Level 4	Level 4		Level 4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 3
9	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3
8	Level 4	Level 4	Level 4		Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3
7	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3
6	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3
5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

Odour Scenario 38NRP03 – Potential future emissions, without carbonatation vents

Height [Storeys]	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96											
95											
94											
93											
92											
91											
90											
89											
88											
87											
86											
85											
84											
83											
82											
81		Level 1	Level 1					Level 1	Level 1		
80		Level 1	Level 1					Level 1	Level 1		
79		Level 1	Level 1					Level 1	Level 1		
78		Level 1	Level 1					Level 1	Level 1		
77		Level 1	Level 1					Level 1	Level 1		
76		Level 1	Level 1					Level 1	Level 1		
75		Level 1	Level 1					Level 1	Level 1		
74		Level 1	Level 1					Level 1	Level 1		
73		Level 1	Level 1					Level 1	Level 1		
72		Level 1	Level 1					Level 1	Level 1		
71		Level 1	Level 1					Level 1	Level 1		
70		Level 1	Level 1					Level 1	Level 1		
69		Level 1	Level 1					Level 1	Level 1		
68		Level 1	Level 1					Level 1	Level 1		
67		Level 1	Level 1					Level 1	Level 1		
66		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
65		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
64		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
63		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
62		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
61		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
60		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
59		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
58		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
57		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
56		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
55		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
54		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
53		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
52		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
51		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
50		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
49		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
48		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
47		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
46		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
45		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
44		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
43		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
42		Level 1	Level 1	Level 1	Level 1			Level 1	Level 1	Level 1	Level 1
41		Level 1	Level 1	Level 1	Level 1			Level 2	Level 2	Level 2	Level 2
40		Level 1	Level 1	Level 1	Level 1			Level 2	Level 2	Level 2	Level 2
39		Level 1	Level 1	Level 1	Level 1			Level 2	Level 2	Level 2	Level 2
38		Level 1	Level 1	Level 2	Level 1			Level 2	Level 2	Level 2	Level 2
37		Level 1	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
36		Level 2	Level 2	Level 2	Level 2			Level 2	Level 2	Level 3	Level 2
35		Level 2	Level 2	Level 2	Level 2			Level 3	Level 2	Level 3	Level 2
34		Level 2	Level 2	Level 2	Level 2			Level 3	Level 2	Level 3	Level 3
33		Level 2	Level 2	Level 3	Level 3			Level 3	Level 3	Level 4	Level 3
32		Level 2	Level 2	Level 3	Level 3			Level 3	Level 3	Level 4	Level 3
31		Level 2	Level 2	Level 3	Level 3			Level 3	Level 3	Level 4	Level 3
30		Level 2	Level 3	Level 3	Level 3			Level 3	Level 3	Level 4	Level 3
29		Level 3	Level 3	Level 4	Level 3			Level 3	Level 3	Level 4	Level 3
28		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 3
27		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 3
26		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 3
25		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
24		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
23		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
22		Level 3	Level 3	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
21		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
20		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
19		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
18		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
17		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
16		Level 4	Level 4	Level 4	Level 4			Level 4	Level 4	Level 4	Level 4
15		Level 4	Level 4	Level 4	Level 4			Level 3	Level 3	Level 4	Level 4
14		Level 4	Level 4	Level 4	Level 4	Level 3		Level 3	Level 3	Level 4	Level 4
13		Level 3	Level 3	Level 4	Level 4	Level 3		Level 3	Level 3	Level 3	Level 3
12		Level 3	Level 3	Level 3	Level 3	Level 3		Level 3	Level 3	Level 3	Level 3
11		Level 3	Level 3	Level 3	Level 3	Level 3		Level 3	Level 3	Level 3	Level 3
10	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
9	Level 4	Level 3	Level 3	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
8	Level 4	Level 3	Level 3	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
7	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3	Level 3
6	Level 4	Level 3	Level 3	Level 4	Level 3	Level 3	Level 4	Level 4	Level 3	Level 4	Level 4
5	Level 4	Level 3	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
4	Level 4	Level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
2	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
1	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

MEMORANDUM

APPENDIX B

O.Reg. 419/05 Compliance Charts for the Proposed Built Form Scenarios

Date: June 8, 2016
Project No. 1525228
To: Willie Macrae

Golder Associates

Scenario A

Storey	BLDG_A_1_1	BLDG_A_1_2	BLDG_A_1_3	BLDG_A_2_1	BLDG_A_2_2	BLDG_A_3_1	BLDG_A_3_2	BLDG_C_1_1	BLDG_C_1_2	BLDG_C_1_3	BLDG_C_1_4	BLDG_C_1_5
96										<80%		
95										<80%		
94										<80%		
93										<80%		
92										<80%		
91										<80%		
90										<80%		
89										<80%		
88										<80%		
87										<80%		
86										<80%		
85										<80%		
84										<80%		
83										<80%		
82										<80%		
81										<80%	<80%	
80										<80%	<80%	
79										<80%	<80%	
78										<80%	<80%	
77										<80%	<80%	
76										<80%	<80%	
75										<80%	<80%	
74										<80%	<80%	
73										<80%	<80%	
72										<80%	<80%	
71										<80%	<80%	
70										<80%	<80%	
69										<80%	<80%	
68										<80%	<80%	
67										<80%	<80%	
66										<80%	<80%	<80%
65										<80%	<80%	<80%
64										<80%	<80%	<80%
63										<80%	<80%	<80%
62										<80%	<80%	<80%
61										<80%	<80%	<80%
60										<80%	<80%	<80%
59										<80%	<80%	<80%
58										<80%	<80%	<80%
57										<80%	<80%	<80%
56										<80%	<80%	<80%
55										<80%	<80%	<80%
54										<80%	<80%	<80%
53										<80%	<80%	<80%
52										<80%	<80%	<80%
51										<80%	<80%	<80%
50										<80%	<80%	<80%
49										<80%	<80%	<80%
48										<80%	<80%	<80%
47										<80%	<80%	<80%
46										<80%	<80%	<80%
45										<80%	<80%	<80%
44										<80%	<80%	<80%
43										<80%	<80%	<80%
42										<80%	<80%	<80%
41										<80%	<80%	<80%
40										<80%	<80%	<80%
39										<80%	<80%	<80%
38										<80%	<80%	<80%
37										<80%	<80%	<80%
36										<80%	<80%	<80%
35										<80%	<80%	<80%
34										<80%	<80%	<80%
33										<80%	<80%	<80%
32										<80%	<80%	<80%
31										<80%	<80%	<80%
30										<80%	<80%	<80%
29					>100%		>100%			<80%	<80%	<80%
28		<80%			>100%		>80%			<80%	<80%	<80%
27		<80%			>100%		<80%			<80%	<80%	<80%
26		<80%			>100%		<80%			<80%	<80%	<80%
25		<80%			>80%		<80%			<80%	<80%	<80%
24		<80%			>80%		<80%			<80%	<80%	<80%
23		<80%			<80%		<80%			<80%	<80%	<80%
22		<80%			<80%		<80%			<80%	<80%	<80%
21		<80%			<80%		<80%			<80%	<80%	<80%
20		<80%			<80%		<80%			<80%	<80%	<80%
19		<80%			<80%		<80%			<80%	<80%	<80%
18		<80%			<80%		<80%			<80%	<80%	<80%
17		<80%			<80%		<80%			<80%	<80%	<80%
16		<80%			<80%		<80%			<80%	<80%	<80%
15		<80%			<80%		<80%			<80%	<80%	<80%
14		<80%			<80%		<80%	<80%		<80%	<80%	<80%
13		<80%			<80%		<80%	<80%		<80%	<80%	<80%
12		<80%			<80%		<80%	<80%		<80%	<80%	<80%
11		<80%			<80%		<80%	<80%		<80%	<80%	<80%
10	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
9	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
8	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
7	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
6	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
5	<80%	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

Scenario A

Storey	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5	BLDG_C_2_6	BLDG_C_2_7	BLDG_C_3_1	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4
96												
95												
94												
93												
92												
91												
90												
89												
88												
87												
86												
85												
84												
83												
82												
81					<80%	<80%					<80%	<80%
80					<80%	<80%					<80%	<80%
79					<80%	<80%					<80%	<80%
78					<80%	<80%					<80%	<80%
77					<80%	<80%					<80%	<80%
76					<80%	<80%					<80%	<80%
75					<80%	<80%					<80%	<80%
74					<80%	<80%					<80%	<80%
73					<80%	<80%					<80%	<80%
72					<80%	<80%					<80%	<80%
71					<80%	<80%					<80%	<80%
70					<80%	<80%					<80%	<80%
69					<80%	<80%					<80%	<80%
68					<80%	<80%					<80%	<80%
67					<80%	<80%					<80%	<80%
66	<80%				<80%	<80%	<80%	<80%			<80%	<80%
65	<80%				<80%	<80%	<80%	<80%			<80%	<80%
64	<80%				<80%	<80%	<80%	<80%			<80%	<80%
63	<80%				<80%	<80%	<80%	<80%			<80%	<80%
62	<80%				<80%	<80%	<80%	<80%			<80%	<80%
61	<80%				<80%	<80%	<80%	<80%			<80%	<80%
60	<80%				<80%	<80%	<80%	<80%			<80%	<80%
59	<80%				<80%	<80%	<80%	<80%			<80%	<80%
58	<80%				<80%	<80%	<80%	<80%			<80%	<80%
57	<80%				<80%	<80%	<80%	<80%			<80%	<80%
56	<80%				<80%	<80%	<80%	<80%			<80%	<80%
55	<80%				<80%	<80%	<80%	<80%			<80%	<80%
54	<80%				<80%	<80%	<80%	<80%			<80%	<80%
53	<80%				<80%	<80%	<80%	<80%			<80%	<80%
52	<80%				<80%	<80%	<80%	<80%			<80%	<80%
51	<80%				<80%	<80%	<80%	<80%			<80%	<80%
50	<80%				<80%	<80%	<80%	<80%			<80%	<80%
49	<80%				<80%	<80%	<80%	<80%			<80%	<80%
48	<80%				<80%	<80%	<80%	<80%			<80%	<80%
47	<80%				<80%	<80%	<80%	<80%			<80%	<80%
46	<80%				<80%	<80%	<80%	<80%			<80%	<80%
45	<80%				<80%	<80%	<80%	<80%			<80%	<80%
44	<80%				<80%	<80%	<80%	<80%			<80%	<80%
43	<80%				<80%	<80%	<80%	<80%			<80%	<80%
42	<80%				<80%	<80%	<80%	<80%			<80%	<80%
41	<80%				<80%	<80%	<80%	>80%			<80%	<80%
40	<80%				<80%	<80%	<80%	>80%			<80%	<80%
39	<80%				<80%	<80%	<80%	>80%			<80%	<80%
38	<80%				<80%	<80%	<80%	>80%			<80%	<80%
37	<80%				<80%	<80%	>80%	>80%			<80%	<80%
36	<80%				<80%	<80%	>80%	>80%			<80%	<80%
35	<80%				<80%	<80%	>100%	>80%			<80%	<80%
34	<80%				<80%	<80%	>100%	>80%			<80%	<80%
33	<80%				<80%	<80%	>100%	>100%			<80%	<80%
32	<80%				<80%	<80%	>80%	>100%			<80%	<80%
31	<80%				<80%	<80%	<80%	>100%			<80%	<80%
30	<80%				<80%	<80%	<80%	>80%			<80%	<80%
29	<80%				<80%	<80%	<80%	>80%			<80%	<80%
28	<80%				<80%	<80%	<80%	<80%			<80%	<80%
27	<80%				<80%	<80%	<80%	<80%			<80%	<80%
26	<80%				<80%	<80%	<80%	<80%			<80%	<80%
25	<80%				<80%	<80%	<80%	<80%			<80%	<80%
24	<80%				<80%	<80%	<80%	<80%			<80%	<80%
23	<80%				<80%	<80%	<80%	<80%			<80%	<80%
22	<80%				<80%	<80%	<80%	<80%			<80%	<80%
21	<80%				<80%	<80%	<80%	<80%			<80%	<80%
20	<80%				<80%	<80%	<80%	<80%			<80%	<80%
19	<80%				<80%	<80%	<80%	<80%			<80%	<80%
18	<80%				<80%	<80%	<80%	<80%			<80%	<80%
17	<80%				<80%	<80%	<80%	<80%			<80%	<80%
16	<80%				<80%	<80%	<80%	<80%			<80%	<80%
15	<80%				<80%	<80%	<80%	<80%			<80%	<80%
14	<80%				<80%	<80%	<80%	<80%	<80%		<80%	<80%
13	<80%				<80%	<80%	<80%	<80%	<80%		<80%	<80%
12	<80%				<80%	<80%	<80%	<80%	<80%		<80%	<80%
11	<80%				<80%	<80%	<80%	<80%	<80%		<80%	<80%
10	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
9	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
8	<80%		<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
7	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
6	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
5	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

Scenario A

Storey	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96								
95								
94								
93								
92								
91								
90								
89								
88								
87								
86								
85								
84								
83								
82								
81					<80%	<80%		
80					<80%	<80%		
79					<80%	<80%		
78					<80%	<80%		
77					<80%	<80%		
76					<80%	<80%		
75					<80%	<80%		
74					<80%	<80%		
73					<80%	<80%		
72					<80%	<80%		
71					<80%	<80%		
70					<80%	<80%		
69					<80%	<80%		
68					<80%	<80%		
67					<80%	<80%		
66	<80%	<80%			<80%	<80%	<80%	<80%
65	<80%	<80%			<80%	<80%	<80%	<80%
64	<80%	<80%			<80%	<80%	<80%	<80%
63	<80%	<80%			<80%	<80%	<80%	<80%
62	<80%	<80%			<80%	<80%	<80%	<80%
61	<80%	<80%			<80%	<80%	<80%	<80%
60	<80%	<80%			<80%	<80%	<80%	<80%
59	<80%	<80%			<80%	<80%	<80%	<80%
58	<80%	<80%			<80%	<80%	<80%	<80%
57	<80%	<80%			<80%	<80%	<80%	<80%
56	<80%	<80%			<80%	<80%	<80%	<80%
55	<80%	<80%			<80%	<80%	<80%	<80%
54	<80%	<80%			<80%	<80%	<80%	<80%
53	<80%	<80%			<80%	<80%	<80%	<80%
52	<80%	<80%			<80%	<80%	<80%	<80%
51	<80%	<80%			<80%	<80%	<80%	<80%
50	<80%	<80%			<80%	<80%	<80%	<80%
49	<80%	<80%			<80%	<80%	<80%	<80%
48	<80%	<80%			<80%	<80%	<80%	<80%
47	<80%	<80%			<80%	<80%	<80%	<80%
46	<80%	<80%			<80%	<80%	<80%	<80%
45	<80%	<80%			<80%	<80%	<80%	<80%
44	<80%	<80%			<80%	<80%	<80%	<80%
43	<80%	<80%			<80%	<80%	<80%	<80%
42	>80%	<80%			<80%	<80%	<80%	<80%
41	>80%	<80%			<80%	<80%	<80%	<80%
40	>80%	<80%			<80%	<80%	<80%	<80%
39	>80%	<80%			<80%	<80%	<80%	<80%
38	<80%	<80%			<80%	<80%	<80%	<80%
37	<80%	>80%			<80%	<80%	<80%	<80%
36	>80%	>80%			<80%	<80%	<80%	<80%
35	>80%	>80%			<80%	<80%	<80%	<80%
34	>80%	>80%			<80%	<80%	<80%	<80%
33	>80%	>80%			<80%	<80%	<80%	<80%
32	<80%	>80%			<80%	<80%	<80%	<80%
31	<80%	>80%			<80%	<80%	<80%	<80%
30	<80%	<80%			<80%	<80%	<80%	<80%
29	<80%	<80%			<80%	<80%	<80%	<80%
28	<80%	<80%			<80%	<80%	<80%	<80%
27	<80%	<80%			<80%	<80%	<80%	<80%
26	<80%	<80%			<80%	<80%	<80%	<80%
25	<80%	<80%			<80%	<80%	<80%	<80%
24	<80%	<80%			<80%	<80%	<80%	<80%
23	<80%	<80%			<80%	<80%	<80%	<80%
22	<80%	<80%			<80%	<80%	<80%	<80%
21	<80%	<80%			<80%	<80%	<80%	<80%
20	<80%	<80%			<80%	<80%	<80%	<80%
19	<80%	<80%			<80%	<80%	<80%	<80%
18	<80%	<80%			<80%	<80%	<80%	<80%
17	<80%	<80%			<80%	<80%	<80%	<80%
16	<80%	<80%			<80%	<80%	<80%	<80%
15	<80%	<80%			<80%	<80%	<80%	<80%
14	<80%	<80%	<80%		<80%	<80%	<80%	<80%
13	<80%	<80%	<80%		<80%	<80%	<80%	<80%
12	<80%	<80%	<80%		<80%	<80%	<80%	<80%
11	<80%	<80%	<80%		<80%	<80%	<80%	<80%
10	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
9	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
8	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
7	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
6	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
5	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

Scenario B

Storey	BLDG_B_1_1	BLDG_B_1_2	BLDG_B_1_3	BLDG_B_1_4	BLDG_B_1_5	BLDG_B_1_6	BLDG_B_1_7	BLDG_B_1_8	BLDG_B_2_1	BLDG_B_2_2	BLDG_B_3_1	BLDG_B_3_2	BLDG_C_1_1
96													
95													
94													
93													
92													
91													
90													
89													
88													
87													
86													
85													
84													
83													
82													
81													
80													
79													
78													
77													
76													
75													
74													
73													
72													
71													
70													
69													
68													
67													
66													
65													
64													
63													
62													
61													
60													
59													
58													
57													
56													
55													
54													
53													
52													
51													
50													
49													
48													
47													
46													
45													
44													
43													
42													
41													
40													
39													
38							<80%						
37							>80%						
36							>80%						
35						<80%	>80%						
34						<80%	>80%						
33						<80%	>80%						
32						<80%	<80%						
31						<80%	<80%						
30						<80%	<80%						
29						<80%	<80%			>100%		>100%	
28						<80%	<80%			>100%		>80%	
27						<80%	<80%			>100%		<80%	
26						<80%	<80%			>100%		<80%	
25						<80%	<80%			>100%		<80%	
24						<80%	<80%			>80%		<80%	
23						<80%	<80%			<80%		<80%	
22				<80%	<80%	<80%	<80%			<80%		<80%	
21				<80%	<80%	<80%	<80%			<80%		<80%	
20				<80%	<80%	<80%	<80%			<80%		<80%	
19			<80%	<80%	<80%	<80%	<80%			<80%		<80%	
18			<80%	<80%	<80%	<80%	<80%			<80%		<80%	
17			<80%	<80%	<80%	<80%	<80%			<80%		<80%	
16			<80%	<80%	<80%	<80%	<80%			<80%		<80%	
15			<80%	<80%	<80%	<80%	<80%			<80%		<80%	
14			<80%	<80%	<80%	<80%	<80%			<80%		<80%	<80%
13			<80%	<80%	<80%	<80%	<80%			<80%		<80%	<80%
12			<80%	<80%	<80%	<80%	<80%			<80%		<80%	<80%
11			<80%	<80%	<80%	<80%	<80%			<80%		<80%	<80%
10	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
9	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
8	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
7	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
6	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
5	<80%	<80%	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

Scenario B

Storey	BLDG_C_1_2	BLDG_C_1_3	BLDG_C_1_4	BLDG_C_1_5	BLDG_C_1_6	BLDG_C_2_1	BLDG_C_2_2	BLDG_C_2_3	BLDG_C_2_4	BLDG_C_2_5	BLDG_C_2_6
96		<80%									
95		<80%									
94		<80%									
93		<80%									
92		<80%									
91		<80%									
90		<80%									
89		<80%									
88		<80%									
87		<80%									
86		<80%									
85		<80%									
84		<80%									
83		<80%									
82		<80%									
81		<80%	<80%						<80%	<80%	
80		<80%	<80%						<80%	<80%	
79		<80%	<80%						<80%	<80%	
78		<80%	<80%						<80%	<80%	
77		<80%	<80%						<80%	<80%	
76		<80%	<80%						<80%	<80%	
75		<80%	<80%						<80%	<80%	
74		<80%	<80%						<80%	<80%	
73		<80%	<80%						<80%	<80%	
72		<80%	<80%						<80%	<80%	
71		<80%	<80%						<80%	<80%	
70		<80%	<80%						<80%	<80%	
69		<80%	<80%						<80%	<80%	
68		<80%	<80%						<80%	<80%	
67		<80%	<80%						<80%	<80%	
66		<80%	<80%	<80%	<80%				<80%	<80%	<80%
65		<80%	<80%	<80%	<80%				<80%	<80%	<80%
64		<80%	<80%	<80%	<80%				<80%	<80%	<80%
63		<80%	<80%	<80%	<80%				<80%	<80%	<80%
62		<80%	<80%	<80%	<80%				<80%	<80%	<80%
61		<80%	<80%	<80%	<80%				<80%	<80%	<80%
60		<80%	<80%	<80%	<80%				<80%	<80%	<80%
59		<80%	<80%	<80%	<80%				<80%	<80%	<80%
58		<80%	<80%	<80%	<80%				<80%	<80%	<80%
57		<80%	<80%	<80%	<80%				<80%	<80%	<80%
56		<80%	<80%	<80%	<80%				<80%	<80%	<80%
55		<80%	<80%	<80%	<80%				<80%	<80%	<80%
54		<80%	<80%	<80%	<80%				<80%	<80%	<80%
53		<80%	<80%	<80%	<80%				<80%	<80%	<80%
52		<80%	<80%	<80%	<80%				<80%	<80%	<80%
51		<80%	<80%	<80%	<80%				<80%	<80%	<80%
50		<80%	<80%	<80%	<80%				<80%	<80%	<80%
49		<80%	<80%	<80%	<80%				<80%	<80%	<80%
48		<80%	<80%	<80%	<80%				<80%	<80%	<80%
47		<80%	<80%	<80%	<80%				<80%	<80%	<80%
46		<80%	<80%	<80%	<80%				<80%	<80%	<80%
45		<80%	<80%	<80%	<80%				<80%	<80%	<80%
44		<80%	<80%	<80%	<80%				<80%	<80%	<80%
43		<80%	<80%	<80%	<80%				<80%	<80%	<80%
42		<80%	<80%	<80%	<80%				<80%	<80%	<80%
41		<80%	<80%	<80%	<80%				<80%	<80%	<80%
40		<80%	<80%	<80%	<80%				<80%	<80%	<80%
39		<80%	<80%	<80%	<80%				<80%	<80%	<80%
38		<80%	<80%	<80%	<80%				<80%	<80%	<80%
37		<80%	<80%	<80%	<80%				<80%	<80%	>80%
36		<80%	<80%	<80%	<80%				<80%	<80%	>80%
35		<80%	<80%	<80%	<80%				<80%	<80%	>100%
34		<80%	<80%	<80%	<80%				<80%	<80%	>100%
33		<80%	<80%	<80%	<80%				<80%	<80%	>100%
32		<80%	<80%	<80%	<80%				<80%	<80%	>80%
31		<80%	<80%	<80%	<80%				<80%	<80%	<80%
30		<80%	<80%	<80%	<80%				<80%	<80%	<80%
29		<80%	<80%	<80%	<80%				<80%	<80%	<80%
28		<80%	<80%	<80%	<80%				<80%	<80%	<80%
27		<80%	<80%	<80%	<80%				<80%	<80%	<80%
26		<80%	<80%	<80%	<80%				<80%	<80%	<80%
25		<80%	<80%	<80%	<80%				<80%	<80%	<80%
24		<80%	<80%	<80%	<80%				<80%	<80%	<80%
23		<80%	<80%	<80%	<80%				<80%	<80%	<80%
22		<80%	<80%	<80%	<80%				<80%	<80%	<80%
21		<80%	<80%	<80%	<80%				<80%	<80%	<80%
20		<80%	<80%	<80%	<80%				<80%	<80%	<80%
19		<80%	<80%	<80%	<80%				<80%	<80%	<80%
18		<80%	<80%	<80%	<80%				<80%	<80%	<80%
17		<80%	<80%	<80%	<80%				<80%	<80%	<80%
16		<80%	<80%	<80%	<80%				<80%	<80%	<80%
15		<80%	<80%	<80%	<80%				<80%	<80%	<80%
14		<80%	<80%	<80%	<80%				<80%	<80%	<80%
13		<80%	<80%	<80%	<80%				<80%	<80%	<80%
12		<80%	<80%	<80%	<80%				<80%	<80%	<80%
11		<80%	<80%	<80%	<80%				<80%	<80%	<80%
10	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
9	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
8	<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%	<80%
7	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
6	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
5	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

Scenario B

Storey	BLDG_C_2_7	BLDG_C_3_1	BLDG_C_3_2	BLDG_C_3_3	BLDG_C_3_4	BLDG_C_3_5	BLDG_C_3_6	BLDG_C_4_1	BLDG_C_4_2	BLDG_C_4_3	BLDG_C_4_4	BLDG_C_4_5	BLDG_C_4_6
96													
95													
94													
93													
92													
91													
90													
89													
88													
87													
86													
85													
84													
83													
82													
81				<80%	<80%					<80%	<80%		
80				<80%	<80%					<80%	<80%		
79				<80%	<80%					<80%	<80%		
78				<80%	<80%					<80%	<80%		
77				<80%	<80%					<80%	<80%		
76				<80%	<80%					<80%	<80%		
75				<80%	<80%					<80%	<80%		
74				<80%	<80%					<80%	<80%		
73				<80%	<80%					<80%	<80%		
72				<80%	<80%					<80%	<80%		
71				<80%	<80%					<80%	<80%		
70				<80%	<80%					<80%	<80%		
69				<80%	<80%					<80%	<80%		
68				<80%	<80%					<80%	<80%		
67				<80%	<80%					<80%	<80%		
66	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
65	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
64	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
63	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
62	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
61	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
60	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
59	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
58	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
57	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
56	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
55	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
54	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
53	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
52	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
51	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
50	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
49	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
48	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
47	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
46	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
45	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
44	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
43	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
42	<80%			<80%	<80%	>80%	<80%			<80%	<80%	<80%	<80%
41	>80%			<80%	<80%	>80%	>80%			<80%	<80%	<80%	<80%
40	>80%			<80%	<80%	>100%	>80%			<80%	<80%	<80%	<80%
39	>80%			<80%	<80%	>80%	>80%			<80%	<80%	<80%	<80%
38	>80%			<80%	<80%	>80%	<80%			<80%	<80%	<80%	<80%
37	>80%			<80%	<80%	>80%	>80%			<80%	<80%	<80%	<80%
36	>80%			<80%	<80%	>100%	>80%			<80%	<80%	<80%	<80%
35	>80%			<80%	<80%	>100%	>80%			<80%	<80%	<80%	<80%
34	>100%			<80%	<80%	>100%	>80%			<80%	<80%	<80%	<80%
33	>100%			<80%	<80%	>100%	>80%			<80%	<80%	<80%	<80%
32	>100%			<80%	<80%	>80%	>80%			<80%	<80%	<80%	<80%
31	>100%			<80%	<80%	>80%	>80%			<80%	<80%	<80%	<80%
30	>80%			<80%	<80%	>80%	<80%			<80%	<80%	<80%	<80%
29	>80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
28	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
27	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
26	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
25	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
24	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
23	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
22	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
21	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
20	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
19	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
18	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
17	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
16	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
15	<80%			<80%	<80%	<80%	<80%			<80%	<80%	<80%	<80%
14	<80%	<80%		<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%
13	<80%	<80%		<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%
12	<80%	<80%		<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%
11	<80%	<80%		<80%	<80%	<80%	<80%	<80%		<80%	<80%	<80%	<80%
10	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
9	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
8	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
7	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
6	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
5	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
4	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
3	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
2	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%
1	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%	<80%

MEMORANDUM

APPENDIX C

Building Heights and Reference Dimensions

Date: June 8, 2016
Project No. 1525228
To: Willie Macrae

Golder Associates

LEGEND

- Roads
- Railway
- Waterbody
- 240m Building Height (Relative to Grade)
- 30m Building Facade Length
- 14m Building Setback
- Reference Distance
- Approximate Road Centerline
- Project Area
- Non Sensitive Land Uses
- Sensitive Land Uses

DRAFT

0 50 100

1:2,000 METRES

NOTE(S)

1. THIS IS A NON-SURVEYED DRAWING, ALL DIMENSIONS ARE APPROXIMATE
2. THIS FIGURE MUST BE READ IN CONJUNCTION WITH NOAQA PREPARED BY GOLDER

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
SCENARIO A V2 LYP PROPOSED BUILDING LAYOUT WITH REFERENCE DIMENSIONS

CONSULTANT

Golder Associates

YYYY-MM-DD	2016-02-08
DESIGNED	SO
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0003	1.0	C1

631000

GARDINER W YONGE N RAMP
LAKESHORE W GARDINER
F G GARDINER EXPRESSWAY WEST
F G GARDINER EXPRESSWAY EAST
LOWER JARVIS GARDINER RAMP
RICHARDSON STREET
LAKE SHORE BOULEVARD EAST
GARDINER E LOWER JARVIS RAMP
LOWER JARVIS STREET
COOPER STREET
FREELAND STREET
YONGE STREET
HARBOUR STREET
QUEENS QUAY EAST
QUEENS QUAY WEST
Lake Ontario
(lac Ontario)

240m 38m 240m 240m 26m 195m 117m 15m
240m 38m 240m 195m 26m 195m
18m 240m 26m 195m 229m 373m
240m 26m 195m
38m 240m 285m 26m 195m 26m 195m
116m 14m
77m 38m 26m 76m 73m 83m 60m
122m 85m 35m 26m 76m 63m 83m 64m 79m 123m 167m 61m 38m 88m 50m 15m 25m
375m 127m 34m 86m 18m 28m
130m 118m 3m 26m 42m 64m 33m 64m 31m 62m 38m 10m
30m 33m 37m 62m 5m 110m 65m 97m 97m 20m 9m 9m 102m 39m 54m 23m 33m 26m 26m 40m 50m
9m 29m 39m 30m 39m 28m 5m 9m 100m 39m 72m 27m 16m

LEGEND

- Roads
- Railway
- Waterbody
- 240m — Building Height (Relative to Grade)
- 30m — Building Facade Length
- 14m — Building Setback
- Reference Distance
- Road Reference
- Project Area

DRAFT

0 50 100
1:2,000 METRES

NOTE(S)
1. THIS IS A NON-SURVEYED DRAWING, ALL DIMENSIONS ARE APPROXIMATE
2. THIS FIGURE MUST BE READ IN CONJUNCTION WITH NOAQA PREPARED BY GOLDER

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2015
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17

CLIENT
CITY OF TORONTO

PROJECT
LOWER YONGE PRECINCT

TITLE
SCENARIO B V2 LYP PROPOSED BUILDING LAYOUT WITH REFERENCE DIMENSIONS

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-02-08
DESIGNED	SO
PREPARED	SO
REVIEWED	SC
APPROVED	SC

PROJECT NO.	CONTROL	REV.	FIGURE
1525228	0003	1.0	C2

S:\Clients\City_of_Toronto\Lower_Yonge_Precinct\99_PROJ\1525228_Zoning_Assessment\40_PROD\0003_Appendix_A\1525228-0003-RN-0002.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm