

Reply to the Attention of	Mary Flynn-Guglietti
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Our File No.	6995L-00031
Date	December 4, 2018

DELIVERED BY E-MAIL TO developmentplanning@vaughan.ca

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON
L6A 1T1

Attention: Todd Coles, City Clerk

Dear Chair and Members of the Committee of the Whole:

**Re: Committee of the Whole Meeting of December 5, 2018
Applicant – 2748355 Canada Inc.
File Numbers – OP.18.014, Z.18.021 and 19T-18V008
Submissions on behalf of IKEA Properties Ltd.**

We are the solicitors retained on behalf of IKEA Properties Ltd. (“IKEA”), owners of lands located at the south-west corner of Interchange Way and Exchange Avenue, municipally known as 200 Interchange Way. The IKEA lands immediately abutt lands owned by 2748355 Canada Inc. (the “Applicant”), which lands are the subject of applications for an official plan amendment, rezoning and plan of subdivision.

The Applicant has submitted applications to permit a 993-unit residential development consisting of twenty-two (22) townhouse blocks, two (2) fifteen-storey apartment buildings with 169m² of ground floor commercial uses, and a nine-storey (9) residential apartment building.

The IKEA lands have an area of 8.17 ha (20.2 acres). The IKEA store consists of a two-storey building with an existing gross floor area (“gfa”) of 29,464 square metres (317,148 sq.ft.). IKEA is a major retail anchor in the City of Vaughan and the Region of York providing employment to approximately 350 persons. The IKEA store is located within the Vaughan Metropolitan Centre Secondary Plan (“VMSCP”), which recognizes that the existing use may remain and in fact is permitted to expand up to 10 % of its existing gfa, subject to specified criteria. IKEA intends to maintain its store at this location for many years into the future.

IKEA has reviewed the Applicant’s proposal and the various reports filed in support of the application. IKEA is concerned that a predominantly residential development at the proposed density envisioned may create significant land use compatibility issues. In particular, IKEA has concerns related to land use planning issues, the adequacy of noise mitigation and the impact of the increased traffic on accessibility to its site for its customers, employees, deliveries and service vehicles. In this context IKEA retained the following experts to assist them with their review of the Applicant’s proposal:

1. R.L. Scott Penton, P. Eng. of Novus Environmental;
2. Margot Smeenk, P. Eng. of EXP; and,
3. Alan Young of A. Young Planner Ltd;

1. Peer Review of Noise Assessment:

We are attaching for review and consideration the Novus Environmental Peer Review (“Novus”) of the Noise Assessment Report prepared by HGC Engineering. Novus concludes that the HGC Engineering report does not address actual noise emission data, does not address all potential noise sources and did not take into consideration the potential expansion by 10% of the existing IKEA store, as is permitted in the VMSCP.

The HGC report makes a number of recommendations for noise mitigation, the sufficiency and feasibility of which have not been provided. For example, HGC states that the west facades of the townhouse blocks (Blocks 1 – 4) have been designed such that there are no noise sensitive spaces on the north, west and south facades and therefore mitigation is not required for these blocks. However, designing a three-storey townhouse with no windows or doors attached to noise sensitive spaces on three of the four façades is a significant design challenge, yet no floor plans have been provided to demonstrate how this is achieved. In fact, the façade views provided in the HGC report illustrates operable windows on the front (west) and north (end) elevations, facing IKEA. Further, the drawings illustrate rooftop decks on the units facing westward, which would have a full view of the IKEA operations.

The report does not provide sufficient study or information related to proposed mitigation measures and how the mitigation will be secured.

2. Peer Review of the Traffic Impact Assessment:

We are attaching for review and consideration the EXP Peer Review of the BA Group Transportation Study. The EXP Report concludes that the BA Group Report has a number of deficiencies which may understate the proposed development’s impact on the accessibility of customers, employees, deliveries and service vehicles to the IKEA store. For example, EXP states that no analysis has been conducted during the weekend peak at intersections surrounding the IKEA property. It is imperative that a traffic impact study of a dense residential development immediately abutting a major retail store such as IKEA, cannot be considered adequate if no assessment of weekend traffic has been assessed. The EXP transportation team’s site observations during weekends confirms that the roads surrounding the IKEA site are well occupied by IKEA shoppers. EXP is concerned that the addition of the new development may increase delays significantly enough that queues could extend to adjacent intersections.

In addition, EXP notes that BA has not fully reviewed the spacing of the IKEA accesses and the proposed development to ensure that conflicting turning movements do not create blockage by queue spillback and limited driveway sight distances. As well, adequate consideration of the number of delivery trucks has not been assessed, nor has consideration of safety concerns related to truck turning movements and parked cars on Street “C” been adequately assessed.

EXP concludes that a more fulsome study is required which may result in significant modifications to the proposal in order to mitigate the traffic impacts.

3. Land Use Planning Concerns:

We are attaching for review and consideration a report prepared by Alan Young, a qualified land use planner that summarizes his concerns related to the Applicant's proposal. Mr. Young states that the proposal as currently presented, is not consistent with the Provincial Policy Statement ("PPS") in that major facilities and sensitive lands uses should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise and other contaminants to minimize risk to public health and safety and to ensure the long-term viability of major facilities pursuant to s.1.2.6.1 of the PPS.

Mr. Young also states that the placement of office and commercial uses to address land use compatibility issues is already an important feature of the VMCSPP. The Applicant's proposal for almost 100% residential land uses ignores the importance of using commercial or office uses as a buffer between the proposed residential and the IKEA store. Policy 8.3.1 of the VMCSPP acknowledges that lands within the "South Precinct" are encouraged to have a mix of uses, with a high proportion of offices uses overall and retail on Interchange Way. He concludes that the provision of office uses along Exchange Avenue would assist in resolving the land use compatibility issues identified in the Novus and EXP reports.

4. Conclusions:

We respectfully submit that the Applicant's proposal, in its current form, creates significant land use compatibility issues as identified through the expert reports attached to this letter. The proposal before the Committee of Whole is not consistent with the Provincial Policy Statement, does not conform to the VMCSPP and does not represent good land use planning principles. We request the Committee of the Whole to defer consideration of the applications at this time. We further recommend that appropriate discussions take place between the City, the Applicant and IKEA in an effort to ensure that the identified issues have been appropriately addressed prior to the return of consideration of the applications. Also, please list our Associate, Kailey Sutton as a deputant with respect to this item.

Yours truly,


Mary Flynn-Guglietti

CC: Ikea Properties

Attachments: Planning Report of Alan Young of A. Young Planner Ltd, dated December 4, 2018

Peer Review of Traffic Impact Assessment prepared by EXP, dated December 3, 2018

Peer Review of Noise Assessment prepared by Novus Environmental, dated November 28, 2018

A. Young Planner Ltd.

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December 4, 2018

Ms. Mary Flynn-Guglietti
McMillan LLP
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Toronto M5J 2T3

RE: IKEA Properties Ltd. ("IKEA")
- and -
2748355 Canada Inc. ("Applicant")
City of Vaughan Applications OP.18.014, Z.18.021, 19T-18V008
Interchange Way/Exchange Avenue

A. Young Planner Ltd. has been retained by IKEA to provide planning advice in relation to the above applications affecting lands located immediately behind IKEA's retail store at 200 Interchange Way in the Vaughan Metropolitan Centre.

This letter will provide comments on the Applicant's proposal, and has been informed by the land use compatibility comments provided by Novus Environmental in their letter dated Nov. 28, 2018, and the transportation comments provided by EXP in their letter dated Dec. 3, 2018.

IKEA's property has an area of 8.17 ha (20.2 acres). The store, which opened in 2003, has a gross floor area of 29,464 square metres (317,148 sq.ft.) on two levels. The IKEA store is a major retail anchor in the City of Vaughan and York Region, providing employment for approximately 350 people.

With a height of two storeys and a density of 0.36 FSI, the existing development of the IKEA property is less intense than what the City envisages for this area, but the Vaughan Metropolitan Centre Secondary Plan ("VMSCP") recognizes, appropriately, that existing buildings may remain and allows for their expansion by up to 10% subject to specified criteria being met.

IKEA plans to maintain its store for many years into the future. In this context, the Applicant's proposed residential development is of concern because it would introduce sensitive uses in immediate proximity to IKEA's rear service areas. There is potential for IKEA's ability to use its loading docks and waste/recycling facilities on a 24/7 basis to be prejudiced by future complaints from residents.

As documented by Novus Environmental, the noise study submitted by the Applicant has a number of shortcomings in its approach. Its conclusions rely on noise mitigation measures that have not been fully identified, costed or

reviewed for feasibility by IKEA. The study also relies on specialized townhouse designs which have not been provided for review. In summary, it has not been established that the Applicant's residential project is feasible from a land use compatibility perspective.

As a result, the proposal as currently presented is not consistent with the Provincial Policy Statement which states: *"Major facilities and sensitive land uses should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term viability of major facilities"* (1.2.6.1).

The proposal is also not in conformity with the following (unapproved) policy in the VMCSPP: *"Proposed residential and other sensitive land uses close to existing industrial uses shall demonstrate compatibility and, where necessary, mitigate the impact of the existing use in terms of noise, vibration, air quality, lighting, overlook and traffic generation, in general accordance with all Provincial and municipal guidelines"* (8.1.8).

The Applicant's proposal for almost 100% residential land uses is also problematic in the context of the VMCSPP's land use policies. The Applicant's lands are located within the "South Precinct" where the VMCSPP encourages *"a mix of uses ... with a high proportion of office uses overall and retail on Interchange Way"* (8.3.1). To conform with this policy, at least some office uses should be provided, along with more retail uses along Interchange Way. The provision of the office uses along Exchange Avenue (Street C) could help resolve the land use compatibility issue.

The strategic placement of office and commercial uses to address land use compatibility issues is already a feature of the VMCSPP. In the two designated Neighbourhood Precincts that are expected to have land use compatibility issues *"owing to the close proximity of Highway 400/industrial uses"* (8.4.3), office and ancillary commercial uses are permitted to provide a buffer. A similar concept would be appropriate in relation to the IKEA property, with the applicant locating office and/or commercial uses along the east side of Street C, across from IKEA's loading docks.

The Applicant's residential concept would be more appropriately located in one of the Neighbourhood Precincts which are to be developed primarily for residential uses in a mix of low-rise, mid-rise and high-rise buildings (8.4.1).

The Applicant's proposal for the conversion of Exchange Avenue into a public street (Street C) is appropriate subject to a suitable street cross-section being selected. In their letter dated Dec. 3, 2018, EXP has expressed a concern that the width of the pavement in the standard Local Street cross-section road allowance is insufficient for the turning movements of the trucks that need to access its loading docks. Accordingly, the cross-section for Street C should be modified as shown in EXP's letter. An official plan amendment would not be required since the street cross-sections are in the Appendix to the VMCSPP.

Finally, the EXP letter has identified several deficiencies in the Applicant's traffic analysis which must be addressed. In particular there should be a queue analysis to ensure that no problems are created as a result of the proposed development levels and the limitations of a partial street network which may not be improved for some time to come.

In conclusion, the Applicant's current proposal does not represent good planning because it:

1. is not consistent with the Provincial Policy Statement with respect to land use compatibility;
2. does not conform with VMCSPP policies relating to land use compatibility and land use mix;
3. prejudices the ability of IKEA to conduct its loading operations on a 24/7 basis, because the land use compatibility issue has not been adequately addressed;
4. relies on a cross-section for Street C which does not provide enough space for trucks using IKEA's loading docks; and
5. relies on a traffic impact study which requires further work to provide confidence that the accessibility of IKEA's store will not be unduly prejudiced.

It would be appropriate for discussions to take place between the City, the Applicant and IKEA in an effort to resolve the above issues prior to the return of the official plan and zoning amendment applications to the Committee of the Whole.

Yours truly,

A. Young Planner Ltd.

A handwritten signature in black ink, appearing to read "Alan Young", with a stylized flourish at the end.

Alan Young, BES MSc MCIP RPP MRTPI
President



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T: 1.905.793.9800 • EXP.com

December 3, 2018

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mary.flynn@mcmillan.ca

Project Name: IKEA Vaughan Public Meeting Support
Project Number: BRM-00606072-A0
Subject: **Proposed 30 Interchange Way Development**
Vaughan File Nos. OPA.18.014, ZBA Z.18.021 and 19T-18V008
Peer Review of Traffic Impact Assessment

Dear Mary:

EXP Services Inc. has been retained by IKEA Canada to provide professional transportation engineering services to conduct a peer review of the traffic impact assessment for, and evaluate the impact of, a new development at 30 Interchange Way in the Vaughan Metropolitan Centre (VMC Block 2). The site is located next to IKEA Vaughan at the southeast corner of Interchange Way and Exchange Avenue in the City of Vaughan as illustrated in **Figure 1**.

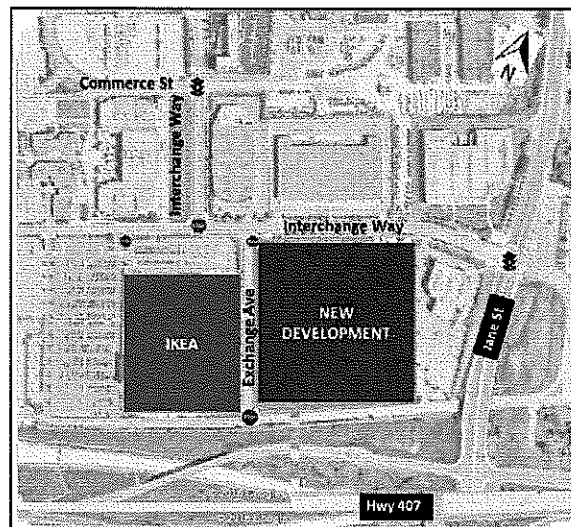


Figure 1 - Environs of 30 Interchange Way and IKEA Vaughan

The following documents were considered:

- City of Vaughan Transportation Master Plan, 2012, Appendix J – Review of Transportation Policies, Road Classification System, and Design Standards and Criteria
- Vaughan Metropolitan Centre (VMC) Secondary Plan
- Vaughan Metropolitan Centre 30 Interchange Way (Block 2) Transportation Study, BA Group, July 2018
- Interchange Way & Exchange Avenue, Vaughan, Site Plan (Ground), Turner Fleischer, July 2018
- Transportation Mobility Plan Guidelines for Development Applications, York Region, 2016

1. Peer Review of BA Group Transportation Study

We have the following concerns regarding the development's transportation study and its ability to fully describe the impact of the proposed development on road users in the area:

- No analysis has been conducted during the weekend peak at intersections surrounding IKEA property. Saturdays and Sundays are very busy shopping days at IKEA and staff report congestion on adjacent roadways. EXP transportation team's site observations during weekends confirms the roads surrounding the site are busy with IKEA shoppers. With the new development, delays may increase significantly with the addition of residential traffic, and queues could extend to adjacent intersections.
- The Site Trip Distribution is based on 2016 TTS data. After opening the new subway station at Jane and Hwy 7 in December 2017, it is expected to include the effect of new station in the trip distribution. In addition, site traffic has been distributed solely eastbound at the Interchange Way/ Street "C" intersection, in contrast to the high proportion turning westbound from background traffic.
- The following intersections have been excluded from the analysis. The first two intersections play an important role in comparing existing condition versus future condition with the development in place especially after the opening of subway station at Jane and Hwy 7:
 - Interchange Way at Commerce
 - Interchange Way at Hwy 7
 - IKEA access west of Interchange Way at Interchange Way
- According to the York Region's "Mobility Plan Guideline for Development Applications", the study should evaluate traffic condition for existing, opening day, 5-year after, and 10-year after. The BA group's report has considered analysis for existing, 2023 and 2031.
- It is not clear how the Active Transportation components have been included in the future analysis and how the additional pedestrian/bike/transit volumes will affect intersection operations. (Note that there is 10% existing active transportation and a future increase has been assumed.)
- No queue analysis has been provided for horizon year forecast. Due to proximity of intersections, extended queues may cause serious problems in the study area.

- No traffic signal warrant analysis has been conducted at the existing all-way stop controlled intersections
- Future background volumes were derived by applying maximum volumes by road classification. Only one additional background development has been included up to 2031. More investigation is required to determine the potential impact of other planned developments and to ensure consistency with the VMC plans.

Overall, the BA Group study has some deficiencies which may understate the proposed development's impact on easy accessibility of customers, employees, deliveries and service vehicles to the IKEA Vaughan store.

2. Additional Transportation Concerns

The current site plan shows Street "C" adjacent to the IKEA Vaughan loading area, as a Local Road with parking on both sides of the roadway and 22 m ROW. This designation is also an alternative provided in the VMC Secondary Plan.

This classification of roadway and cross-section is incompatible with the adjacent commercial usage. Truck movements will be constricted by parking and may pose safety concerns, as shown on the attached turning movement diagram.

Typically, a road with established truck movements would have wider lane widths and limited driveway access and parking. The City of Vaughan's Transportation Master Plan reviewed the road classification system and eliminated the previous 23.0m Industrial Road cross-section (which appears to be in place on Street "C") in favour of general 23.0m Minor Collector cross-section. Both standards are attached.

It may be most appropriate to retain Street "C" as a 22m ROW Local Street, with modifications as permitted by the VMC Secondary Plan without amendment. As shown in Figure 2 (with modifications shown in red), this cross-section should incorporate wider through lanes to accommodate heavy vehicles and at most one side parking.

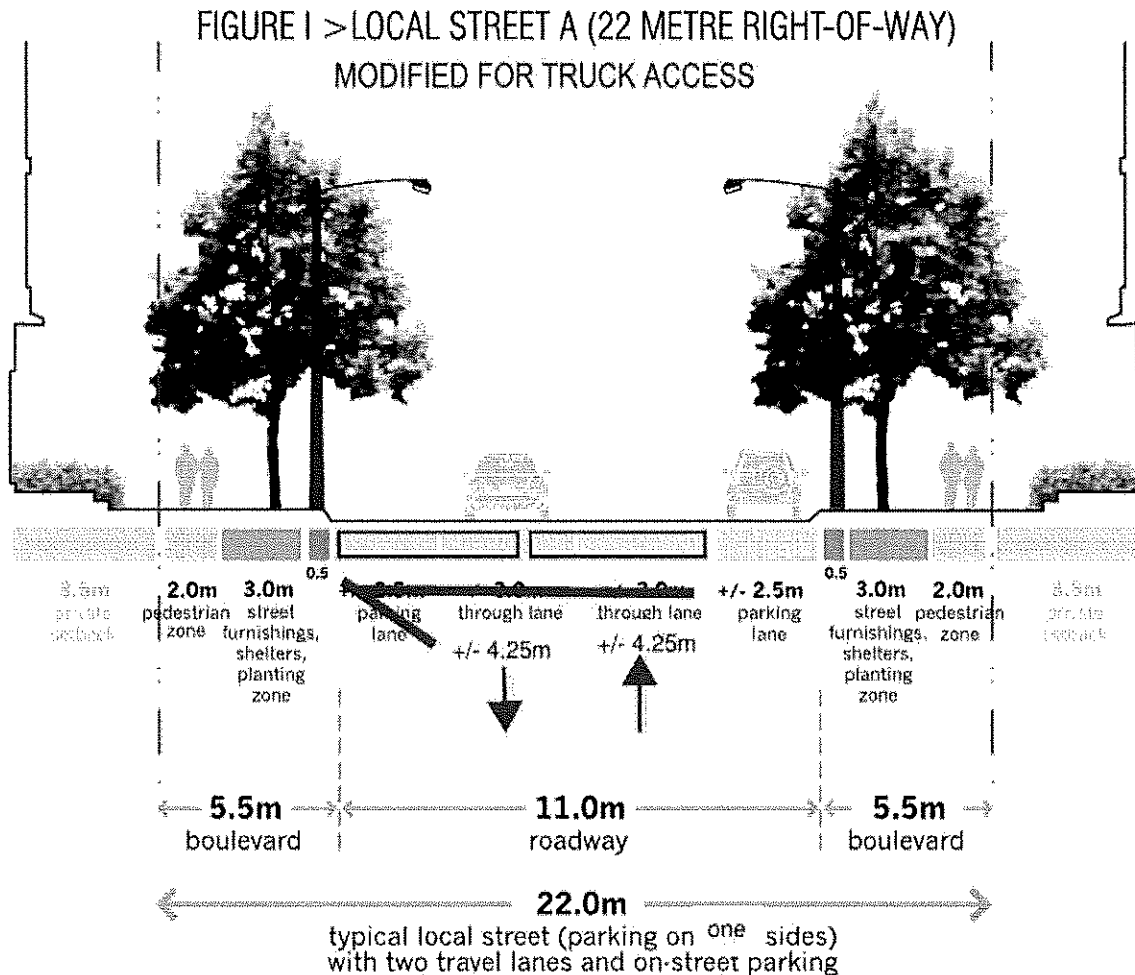


Figure 2 - Proposed Street "C" Modified Local Street Cross-Section

Spacing of IKEA accesses and proposed development private driveways need to be carefully considered. Potential conflicting turning movements, blockage by queue spillback and limited driveway sight distance of all conflicted vehicles are of concern. The current number of delivery trucks are provided as following:

- During off peak times: on average 3-4 trailers per day
- During peak times: on average 5-7 trailers per day

In addition, shunting, cascade arrivals and XPO truck movements occur daily at these accesses.

3. Conclusion

In summary, the proposed development at 30 Interchange Way poses the following potential traffic impacts to the IKEA Vaughan store customers, employees and operations which must be resolved:

1. Additional vehicular traffic volumes on adjacent streets on weekends, which has been observed to be an already congested time period. Additional traffic to the network expected to have significant effect on IKEA customers and their accessibility to the store.
2. Queuing back from congested intersections, impacting movements into and out of the IKEA Vaughan site.
3. Requirements for changes in traffic control which have not been explored.
4. Safety concerns regarding truck turning movements and parked cars on Street "C".
5. Significant increases in pedestrian and bicycle traffic requiring changes in traffic operations and potential safety concerns.

In conclusion, the BA Group study has some deficiencies which may understate the proposed development's impact on easy accessibility of customers, employees, deliveries and service vehicles to the IKEA Vaughan store. Changes to the development's site plan, including Street "C" cross-section and land use designation may be required to mitigate impact.

Best Regards,



Margot Smeenk, P.Eng., PTOE
Practice Lead, Transportation

c.c.: Kristina Preece (IKEA); Alan Young (A. Young Planner Ltd)

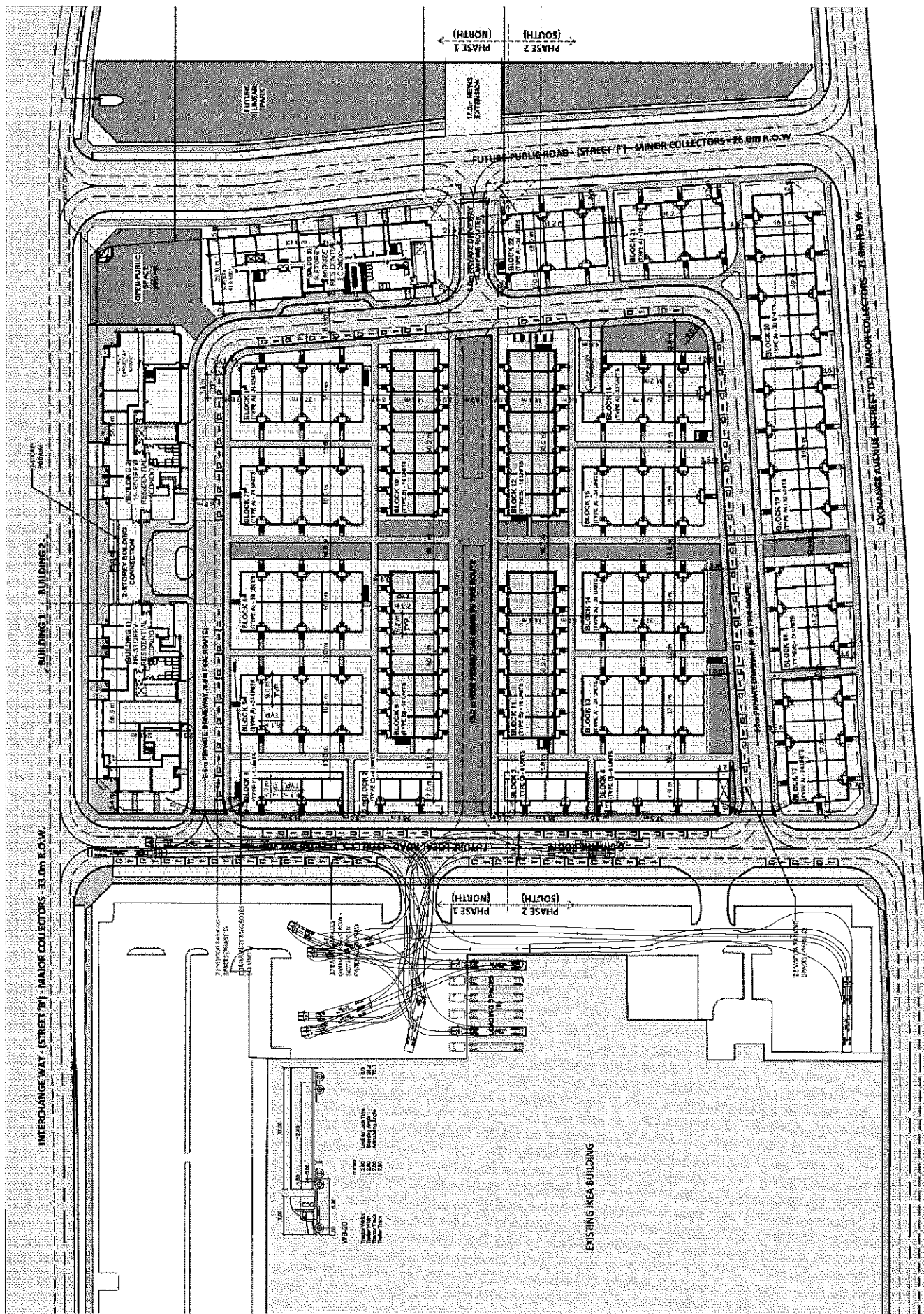


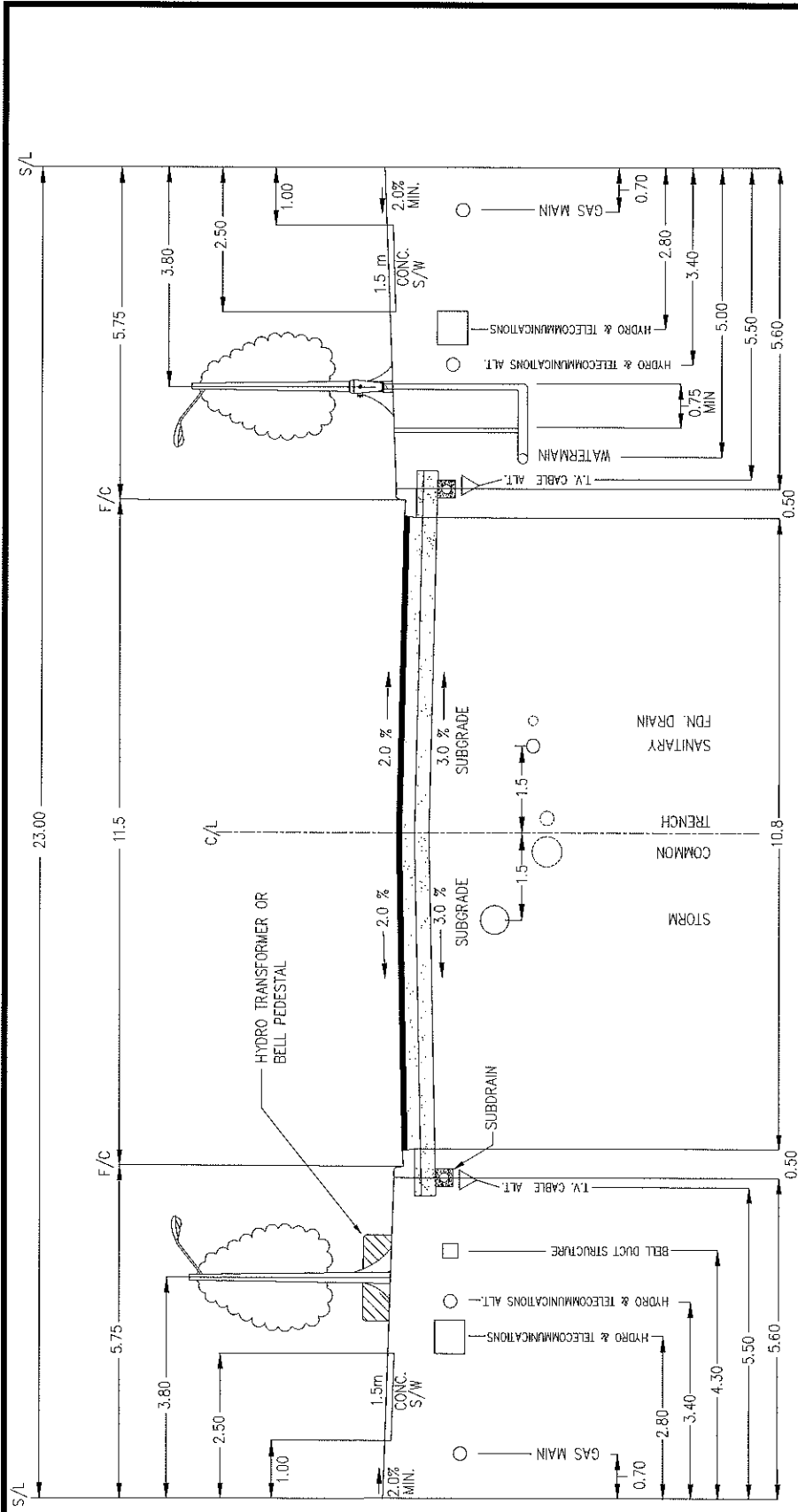
APPENDICES:

TRUCK TURNING MOVEMENTS ON STREET “C” WITH ON-STREET PARKING

CITY OF VAUGHAN INDUSTRIAL ROAD CROSS-SECTION (PRIOR TO 2012)

VAUGHAN METROPOLITAN CENTRE ROAD CROSS-SECTIONS (COLLECTOR AND LOCAL
ROADS)





NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 2 TRAVEL LANES WITH 1 PARKING LANE.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.

m DIMENSIONS IN METRES
EXCEPT AS NOTED

REVISIONS	DATE
4.	
3.	
2.	
1.	

City of Vaughan
The City Above Toronto

**ENGINEERING
DEPARTMENT**

CITY OF VAUGHAN ENGINEERING STANDARD

**INDUSTRIAL ROAD
23m R.O.W.**

NOT TO SCALE
DESIGNED: ENG. DEPT.
REVISION: _____ DATE: MARCH 2004

STD. DWG.
B - 4

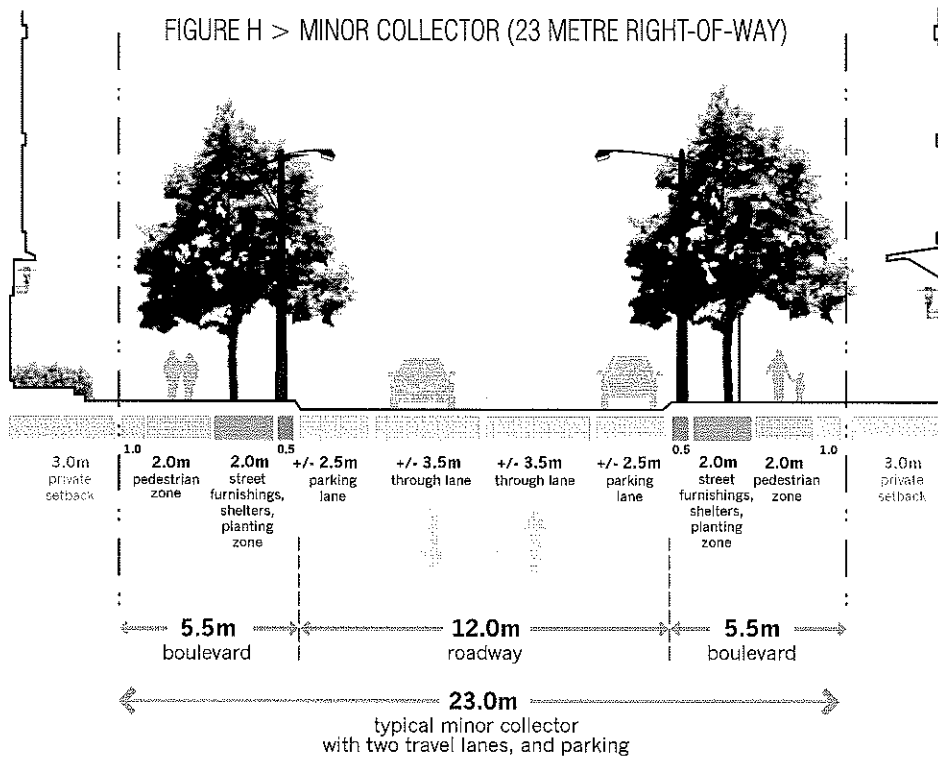
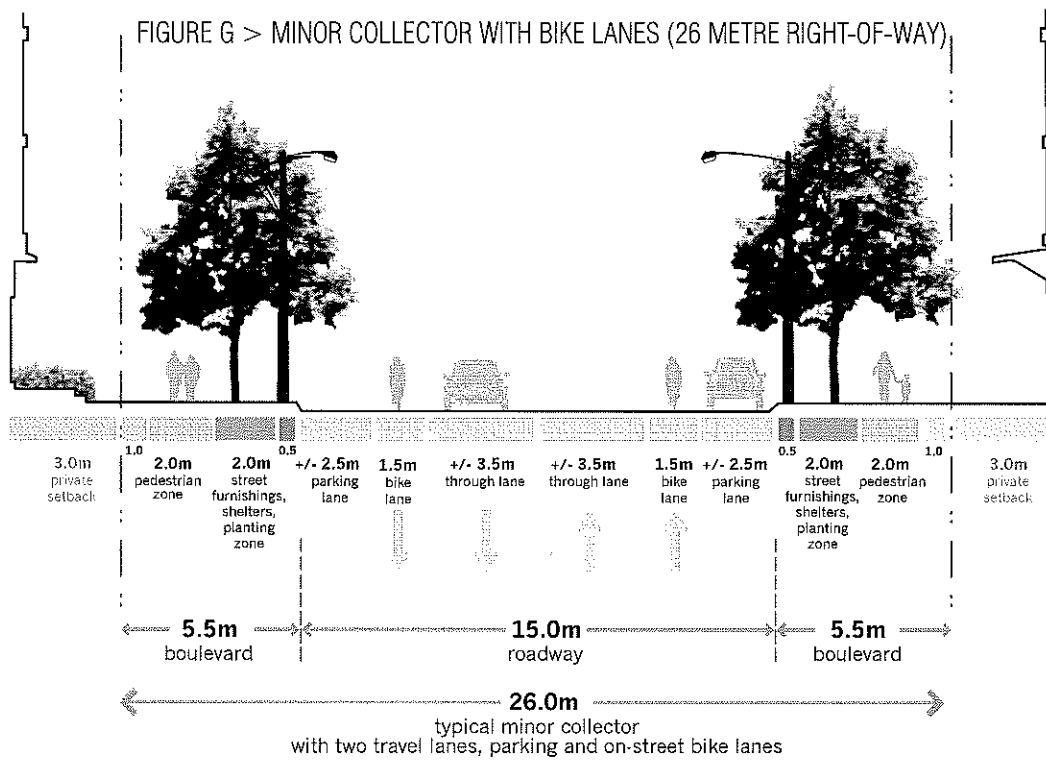


FIGURE I > LOCAL STREET A (22 METRE RIGHT-OF-WAY)

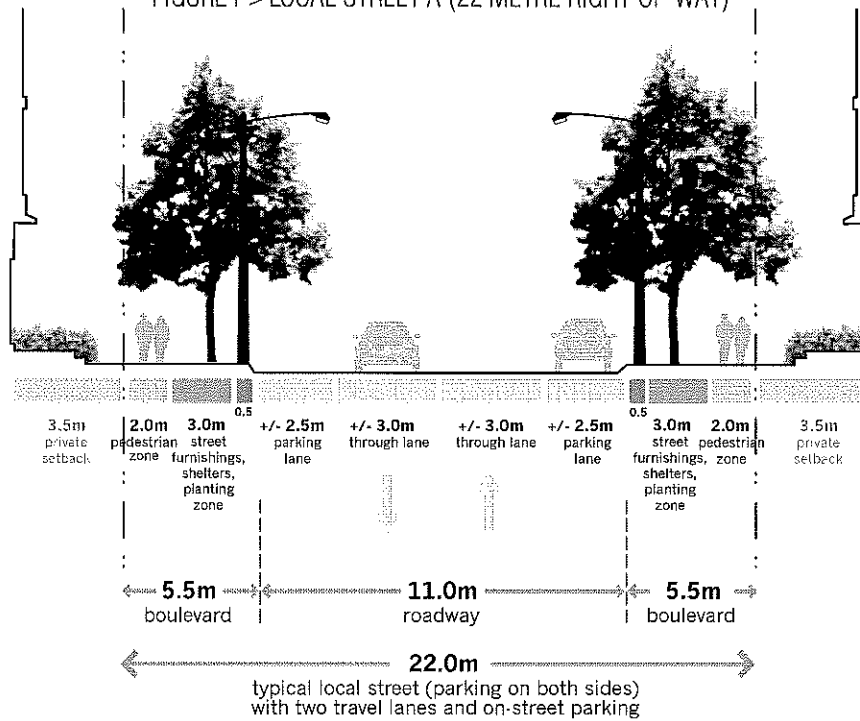
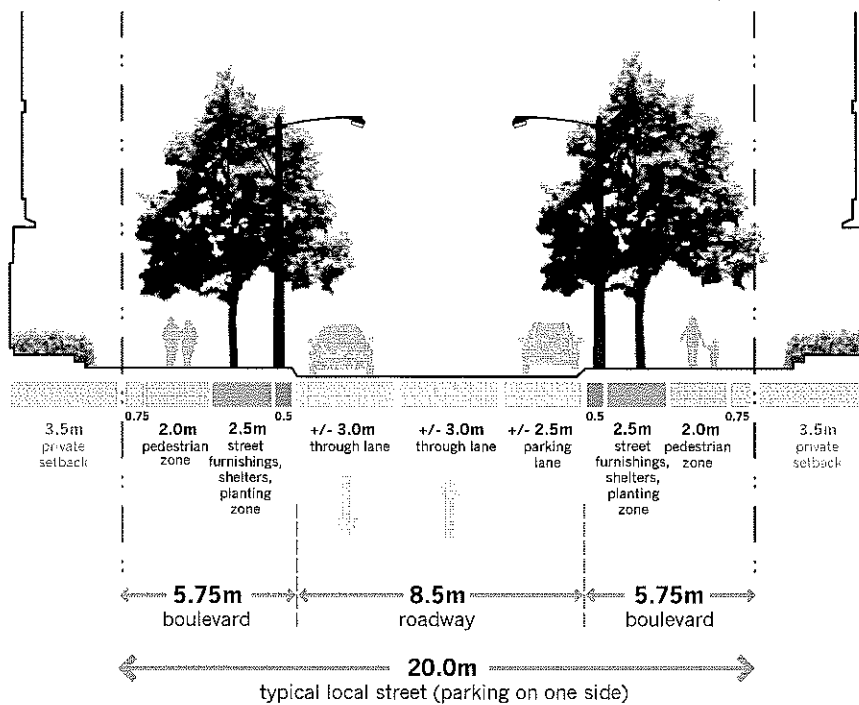


FIGURE J > LOCAL STREET B (20 METRE RIGHT-OF-WAY)





November 28, 2018

Ms. Mary Flynn-Guglietti
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Toronto, Ontario
Canada M5J 2T3

**Re: Proposed 30 Interchange Way Development
Vaughan File Nos. OPA.18.014, ZBA Z.18.021, and 19T-18V008
Peer Review of Noise Assessment
Novus File No. 18.0368**

Novus Environmental Inc. (Novus) was retained by IKEA Properties Ltd. ("IKEA") to conduct a peer review of the noise assessment conducted in support of the proposed residential development to be located at 30 Interchange Way, in Vaughan, Ontario. This report presents the results of our findings.

The following documents were considered:

- Ministry of the Environment, Conservation & Parks ("MECP") noise guideline Publication NPC-300;
- MECP Guideline D-6 - Compatibility Between Industrial Facilities And Sensitive Land Uses;
- City of Vaughan Noise By-law 062-2018;
- The Vaughan Metropolitan Centre (VMC) Secondary Plan;
- Site Plan RZ-2.03; and
- HGC Engineering ("HGC") report entitled "Noise and Vibration Feasibility Study, Proposed Residential Development, 30 Interchange Way, Block 2, City of Vaughan, Ontario", dated July 24, 2018 (the "Noise Report").

This peer review only considers the "stationary" industrial / commercial noise assessment which was completed in the Noise Report. It does not consider the transportation noise or transportation vibration assessment work.

1.0 Proposed Development

The proposed development is located between Interchange Way to the north, and Exchange Avenue to the south, with IKEA forming the western boundary and Teledyne Digital Imaging, Inc (“Optech”) the eastern boundary. South of Exchange Way lies Highway 407, with Highway 400 located approximately 800 m to the west.

The proposed development will consist of 3 mid-rise buildings located along the north and east corner of the property (9 to 15 storeys, totalling 574 units) and 22 blocks of townhomes (totalling 419 units) covering the remainder of the property (993 units in total).

2.0 Scope of the Noise Report

The only “stationary” industrial / commercial source of sound considered in the assessment is IKEA. The proposed development site is surrounded by other industrial uses, including Optech to the east, and Mircon, ND Graphics, Toromont CAT, and Mobile Climate Control Corp., to the north, across Interchange Way. Regardless, only noise impacts from IKEA are considered in the Noise Report.

Section 8 of the Noise Report presents an assessment under MECP Guideline D-6. Although they note the presence of the Optech facility, no noise assessment is included in the Noise Report. Optech would be a Class I Light industry under Guideline D-6, with a 20 m Recommended Minimum Separation Distance, and a 70 m Area of Influence. As residences will lie within 70 of the Optech site, a noise assessment is required under Guideline D-6. As well as mechanical equipment, there are loading and unloading docks on the south façade of this building, which specifically have the potential to affect the eastern side of the development.

3.0 Assessment of Noise Impacts From IKEA

HGC classifies IKEA as a Class I Light industry under Guideline D-6, with a 20 m Recommended Minimum Separation Distance, and a 70 m Area of Influence. However, based on the frequent movements of heavy trucks, including during the overnight-period, and the use of refrigeration units (“reefers”) for outside storage, IKEA is better described as a Class II Medium industry, with a Recommended Minimum Separation Distance of 70 m, and an Area of Influence of 300 m. As such portions of the western side of the development lie within the Recommended Minimum Separation Distance of IKEA.

Development within the Recommended Minimum Separation Distance is allowed under Guideline D-6, in accordance with Section 4.10 of the guideline, provided that a detailed noise study is conducted, and appropriate noise mitigation measures are identified and secured. As will be outlined below, we do not believe that this is currently the case.

3.1 MECP Guidelines and Limits

We agree that the NPC-300 “Class 1 area” noise limits are the applicable guidelines for the proposed development. The traffic data used in Tables VI to predict ambient sound levels appears to be reasonable.

However, as shown in the Noise Report Figure 6, Only a limited number of receptor locations (6) were chosen. These locations do not necessarily represent the locations with the potential for worst-case impacts from IKEA (which would result from the highest predicted sound levels from IKEA versus lowest predicted ambient sound levels/resulting guideline limits). Consider Receptor R2, which is on the south façade of Block 9. The south façade of Block 9 has a relatively high ambient sound levels due to its exposure to noise from Highway 407 to the south, which result in guideline limits of 60 dBA during the daytime, and 52 dBA at night. The north façade of Block 11 (immediately to the south) would have lower ambient sound levels and lower resulting guideline limits, since it faces away from Highway 407. However, both locations would have similar noise levels from IKEA, as both have a similar view of the loading docks. As a result it is highly likely that predicted steady source sound levels (see Table IX), which are shown to be in compliance at Receptor R2/Block 9, are not in compliance at Block 11.

The Cadna/A noise model used by HGC in the assessment allows for the prediction of sound levels at all locations on the facades of the proposed development, using the “Building Evaluation” feature of the model. HGC should redo the analysis, using a Building Evaluation approach to predict both ambient and IKEA sound levels, and to determine the actual extent of guideline excesses at all proposed development buildings.

Given the issues identified above, it is likely that the HGC Noise Report overestimates the ambient sound levels and resulting guideline limits, and therefore underestimates the potential noise impacts on the proposed development.

Section 81.9 of the VMC Secondary Plan (not yet approved) would allow for the use of a “Class 4” designation for the development site, if recommended by “a qualified acoustic professional”. HGC did not make a recommendation for the use of a Class 4 area in the Noise Report.

The Class 4 criteria allows for slightly higher noise guideline limits (+10 DB at facades and +5 dB at outdoor amenity areas). However, predicted ambient sound levels in some affected locations are already above the elevated Class 4 guideline minimums, and in the absence of a more fulsome study using Building Evaluations, it is uncertain if the use of a Class 4 designation would alter the noise mitigation requirements.

3.2 Assessment Scenarios

The Noise Report considered both impulsive noise (from tractor trailer coupling and uncoupling as well as unloading); and non-impulsive “steady state” noise (from truck movements, HVAC systems, reefers, etc.), which is appropriate. The general methodologies used are appropriate. However, some key modelling parameters which have significant potential to affect predicted sound levels are not provided, including ground attenuation, air temperature, relative humidity, and order of reflection. As discussed above, a Building Evaluation approach should be used.

Per Section 9 of the Noise Report, the noise modelling is based on assumed sound power levels (i.e., noise emission rates) rather than on measurements of specific IKEA equipment/ activities. Given that noise mitigation is shown to be required, it would have been appropriate to use actual data. The assumed sound levels shown in Table VIII truck activity, reefers and compactors are much lower than those measured by Novus for similar projects.

The assessment of impulsive noise is based on a blended sound power level of 108 dBAI, consisting of an average of impulsive noise from tractor trailer coupling/uncoupling and forklift noise from unloading. No detail is provided on how this number was obtained (e.g., how many forklift events versus uncoupling events).

The assessment does not include an assessment of noise from the emergency electrical generator located at IKEA.

The noise assessment makes a number of assumptions on IKEA activities. We understand from IKEA that HGC has only recently approached them, after the issuance of their report, asking to confirm facility activities.

The assessment assumes three compactors operate for 20 minutes during a worst-case hour, and only during daytime hours. In fact, there are 5 compactors, and the compactors do run overnight.

Given the issues identified above, it is likely that the HGC Noise Report underestimates the potential noise levels from IKEA operations, and therefore the potential noise impacts on the proposed development.

3.3 Required Noise Mitigation Measures

To address the predicted noise impacts, the HGC Noise Report makes a number of recommendations for noise mitigation, the sufficiency and feasibility of which have not been shown. From Section 9.2:

- “The west facades of the townhouse blocks (Blocks 1 – 4) have been designed such that there are no noise sensitive spaces on the north, west and south facades. Further mitigation is not required for these blocks.”

Noise sensitive spaces under Publication NPC-300 include bedrooms, dens, living rooms, and kitchens. Façade points of reception under the guideline include windows and doors. Non-sensitive points of reception include corridors, staircases, bathrooms, utility and laundry rooms, but only if they are “fully partitioned” from noise sensitive spaces (e.g., by a door). In addition, sealed, inoperable windows cannot be used as a noise control measure for stationary noise.

Designing a three storey townhouse with no windows or doors attached to noise sensitive spaces on three of the four facades is a significant design challenge. In fact, the HGC Noise Report does not provide floor plans for the “Type C” blocks in question, showing that the above requirements are met, and the façade views provided in Appendix B of their report show operable windows on the front (west) and north (end) elevations, facing IKEA.

The drawings also show the presence of rooftop decks on these units, facing westward, which would have a full view of IKEA operations. The HGC Report is silent on potential noise impacts on these locations, and on any required mitigation measures.

The requirement that the developer use such special floor plans cannot typically be included in a zoning by-law. As IKEA is not a party to Site Plan or Building Permit Applications, they would have no ability to oppose or appeal in the Land Use Planning process should the developer decide to change the design at a later stage. In addition, under the NPC-300 noise guidelines, points of reception include “noise sensitive zoned lots”. Therefore, IKEA’s obligations for compliance start immediately once the zoning is set, and absent assurance that the future development will include appropriate special designs, IKEA would be placed out of compliance with MECP requirements.

For this reason, where they have been used in the past, the requirements to use specialty designs have been documented in two- or three-party agreements, between the developer and the industry; or preferably between the developer, industry and municipality. This places legal and contractual obligations to ensure that the on-site mitigation measures are completed. In the absence of such agreements, the rezoning is premature.

- “The southwest corner of Building 1 may be designed such that there are windows to sensitive spaces on the impacted southwest corners.”

Similar to the above, the HGC report identified potential noise impacts at the southwest corner of the 15-storey mid-rise tower Building 1. However, because only a single point of reception (rather than Building Evaluation) approach was used in the assessment, the true extent of

potential noise impacts along the building façade is not known, and very likely extends further eastward on the building. Therefore, much more than the southwest corner of the building may be affected.

Tower designs with no noise sensitive spaces along facades are even more difficult to design than townhouses. Again, no design has been provided for review, and the façade views provided in Appendix B of their report show operable windows on the south and west elevations, facing IKEA.

The use of enclosed noise buffer balconies (as defined in NPC-300) along the exposed/affected facades of the tower may be noise mitigation design option; however, that would require a Class 4 designation for the development.

- “To reduce sounds from decoupling/coupling of cabs from their trailers at the loading area, a wing wall 4 m in height extending approximately 10 m northward as indicated in Figure 8 may be implemented in co-operation with IKEA at the IKEA loading area. The details of the height and extent should be refined during the SPA process.”

There has been no discussion or review with IKEA to determine if such a noise measure is feasible from a traffic / turning radius perspective.

A key concept in noise assessments for land use planning is that if source-based noise mitigation measures are required, then the developer should pay them. Again, this is typically done through two- or three-party agreements, between the developer, industry and municipality. Absent such an agreement, the rezoning is premature.

- “Other property line acoustic barriers of sufficient height should also be considered along the easterly IKEA property line to reduce line of sight to the compactors, trucking routes and other areas where coupling/decoupling of cabs from their trailers may occur. This should be refined through discussion with IKEA personnel regarding their operations.”

“Other property line acoustic barriers” are going to be required. Under NPC-300 noise guidelines, the daytime criteria must be met all outdoor locations on the residential property within 30 m of the residential façade, including front, side and rear yards. As such, the yards of the townhouse are points of reception, and will require noise mitigation, either located on the IKEA property line, and/or at the development. The required locations should be specific at zoning stage, and in the absence of this information, the rezoning is premature.

3.4 Future Expansions

In noise assessments for land use planning, planned future expansions of the industries should be considered. IKEA should be consulted to ensure that any planned expansions are considered, as well as existing operations.

4.0 Vaughan Noise By-law

The HGC Noise Report does not address the City's Noise By-law. Section 4 of the noise by-law includes a number of prohibitions, as outlined below:

4. PROHIBITIONS

(1) No person shall emit or cause to permit the emission of Sound resulting:

(a) from a Stationary Source such that the level of resultant Sound at a Point of Reception located in a Residential Area or Quiet Zone exceeds the applicable Sound level limits prescribed in the applicable NPC Publications listed in Schedule 3;

(b) from any act listed in Schedule 1 - General Prohibitions for which the Sound can be heard at a Point of Reception;

(c) from any act listed in Schedule 2 - Prohibitions by Time and Place, if it can be heard at a Point of Reception in a Residential Area or Quiet Zone at a prohibited time, unless the Sound is generated in an Exempted Employment Area and can be heard in a Class 4 Area, and the act(s) in the Exempted Employment Area are subject to a valid Ministry-issued Environmental Compliance Approval that states that the specific act(s) of Schedule 2 are permitted, and the act(s) being conducted are in compliance with the Environmental Compliance Approval.

Item (a) requires compliance with the MECP Publication NPC-300 guidelines, which the HGC Noise Report does discuss; however, items (b) and (c) also apply. The following prohibitions would apply to IKEA activities:

Schedule 2 - Time and Place Prohibited Periods

No.	Activity	When it is prohibited in the <i>Quiet Zone</i>	When it is prohibited in a <i>Residential Zone</i>
3	Loading, unloading, delivering, packing, unpacking, or otherwise handling any containers, produce, materials, or refuse whatsoever, unless necessary for the maintenance of essential services.	19:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. on Sundays)	19:00 hrs. of one day to 07:00 hrs. next day and all day Sundays and Statutory Holidays
12	The operation of solid waste bulk lifts or <i>Refuse Compacting Equipment</i> .	17:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. on Sundays)	19:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. on Sundays)

Section 11 of the Noise By-law also specifically addresses noise from loading and unloading activities:

1 1. LOADING AND UNLOADING

(1) No person shall load or unload any transport truck, commercial Vehicle, or any other Vehicle used to transport anything whatsoever, including but not limited to goods, materials, fill, debris and waste, between 19:00 of one day and 07:00 of the next day, or at any time on Sundays and Statutory Holidays, so as to make or cause Noises that disturb, or tend to disturb the quiet, peace, rest, enjoyment, comfort or convenience of the neighbourhood in a Residential Area.

Under the definitions of the Noise By-law, the proposed residential development would qualify as a *Residential Area* and would also be a *Point of Reception*. Loading and unloading activities and operation of the garbage compactors at IKEA currently occur 24-hours per day. Noise from these activities would be audible at the development. Therefore, the effect of the addition of the development would be to restrict loading and unloading at IKEA to daytime hours only or place them out of compliance with the noise by-law and therefore subject to prosecution.

Continuing the use of night-time activities may require a combination of a Class 4 designation under Publication NPC-300 for the development lands, and discussions with the City to ensure that IKEA is considered to be in an “*Exempted Employment Area*” under the by-law. This might address Section 4 of the by-law, although IKEA does not have (nor does it require) an MECP Environmental Compliance Approval. Also, such an approach may not adequately address Section 11 of the by-law. A specific exemption from the City may be required.

5.0 Conclusions and Recommendations

In our opinion, based on the issues documented above, the current HGC Noise Report does not show the feasibility of the proposed development.

- The assessment should be re-done using actual noise emission data and addressing all noise sources, and considering planned expansions, if any.
- The assessment should use a “Building Evaluation” approach to examine impacts at all of the proposed tower and townhouse facades, to ensure that the extent of potential noise impacts are properly identified.
- The required locations extent of noise barriers on IKEA and development property, to address ground level yard noise and noise on facades, should be identified and costed. IKEA should review the information to ensure that the noise barriers are feasible from an operational perspective.
- Any receptor-based noise mitigation measures, such as special housing designs or enclosed noise buffer balconies, should also be supplied for review.
- The parties should enter into multi-party agreements, restrictive covenants, etc., to ensure that the required mitigation measures at IKEA will be paid for, and that the required receptor-based mitigation measures will be installed.
- The parties should discuss the issues surrounding the noise by-law with city staff to determine their effects on IKEA operations and what can be done to address these issues.

Should you have any questions or comments, please feel free to contact me.

Sincerely,

Novus Environmental Inc.



R, L. Scott Penton, P.Eng.
Principal / Specialist

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