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NOISE IMPACT STUDY - Project: 22496.00

Derry Green Business Park

Derry Green Business Park Whitby, Ontario

Prepared for:

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Revision History

Version	Description	Author	Reviewed	Date
	Initial Report	DH	DF	June 14, 2023
R1	Updated site plan	HF	DH	May 6, 2025

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Executive Summary

Aercoustics Engineering Limited has been retained by The Remington Group Inc. to prepare a Noise Impact Study to support an application for Zoning Bylaw Amendment for a proposed business park development in the Town of Milton, Ontario.

The proposed development is to be located east of the intersection of Derry Road and Fifth Line. The development will comprise several industrial and commercial warehouse buildings as well as a community park space. The location of the proposed facility and nearby noise-sensitive points of reception are shown in Figure 1.

The facility will support regular and refrigerated truck deliveries to loading bays across all warehouse buildings. Noisy operations are anticipated to include truck movements, dock leveling, trailer coupling, and rooftop mechanical HVAC equipment. Figure 2 shows the proposed development and locations of the stationary noise sources.

The purpose of this study is to assess the existing and future noise environment in the development area and to evaluate the impact of the proposed development on nearby noise-sensitive receptors. The predicted impact on noise-sensitive receptors has been calculated in accordance with the noise guidelines of the Ministry of the Environment, Conservation and Parks publication NPC-300 "Stationary and Transportation Sources – Approval and Planning" (August 2013).

Based on the analysis discussed herein and summarized in Table 5 and Table 6, the predicted sound levels at the noise-sensitive receptors will not exceed the sound level limits specified in NPC-300 with noise mitigation measures as detailed in Section 4. These noise controls include two acoustic barriers.

The proposed facility is in an area currently zoned as Future Development, and it is understood that a zoning bylaw amendment would be required to support this new development. With the zoning amendment, and the noise controls provided in this report, the operations of the facility are expected to comply with the Town of Milton noise by-law, By-law # 133-2012.



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1 Introduction

Aercoustics Engineering Limited (Aercoustics) has been retained by The Remington Group Inc. ("the Client") to prepare a Noise Impact Study (NIS) in support of an application for Zoning Bylaw Amendment (ZBA) for a proposed business park development in the Town of Milton, Ontario.

The purpose of this study is to assess the noise impact from the stationary sources in the proposed development on the noise-sensitive receptors in the area. This report considered the Ontario Ministry of the Environment, Conservation, and Parks (MECP) guideline NPC-300 "Stationary and Transportation Sources – Approval and Planning" (August 2013) and the Town of Whitby noise by-law, BY-LAW NO. 6917-14 and the Town of Milton Engineering and Parks Standards Manual.

The proposed development is located east of the intersection of Derry Road and Fifth Line in Milton, Ontario, and consists of light industrial areas, a community park, and associated parking areas. This study was based on the following site-specific documents provided by the Client. The conceptual site plan indicated below has been included in Appendix A.

Conceptual Site Plan, dated March 7, 2025;

Surrounding land is primarily designated as Future Development Zone or Natural Heritage System Zone, with Agricultural-zoned parcels located to the south. The Town of Milton Official Plan has the facility area and its surroundings identified as a Business Park Area¹.

Figure 1 provides a key plan showing the development location and the surrounding area. Figure 2 shows the proposed development and location of the stationary noise sources. A Town of Milton zoning map for the area is provided in Appendix B.

Noise modelling and mitigation outlined in this report has been prepared prior to the site grading and final site layout being available. It is recommended that the noise controls outlined in this report be re-evaluated when this information becomes available.

2 Guidelines and Criteria

Sound levels are assessed at the noise-sensitive receptors surrounding the site predicted to experience the highest sound impact from the proposed facility.

Points of reception considered in this study include existing dwellings and their corresponding outdoor points of reception. The height and location of all receptors have



¹ Town of Milton Official Plan – Schedule B, August 2008

been selected in accordance with NPC-300. A list of the receptors considered in this study is provided in Table 1.

Table 1: Receptor Location Summary

Receptor ID	Description	Location ¹
R01	Existing 2-storey dwelling	260m NW
R01g	Outdoor Receptor for R01	240m NW
R02	Existing 2-storey dwelling	210m NW
R02g	Outdoor Receptor for R02	190m NW
R03	Existing 1-storey dwelling	170m NW
R03g	Outdoor Receptor for R03	150m NW
R04	Existing 3-storey dwelling	140m N
R04g	Outdoor Receptor for R04	115m N
R05	Existing 3-storey dwelling	100m NE
R05g	Outdoor Receptor for R05	70m NE
R06	Existing 2-storey dwelling	70m SE
R06g	Outdoor Receptor for R06	45m SE
R07	Existing 2-storey dwelling	60m SE
R07g	Outdoor Receptor for R07	40m SE
R08	Existing 2-storey dwelling	60m S
R08g	Outdoor Receptor for R08	45m S
R09	Existing 1-storey dwelling	160m NW
R09g	Outdoor Receptor for R09	160m NW
RI1	Existing Institutional Building (1 storey) ²	50m SW
RI2	Existing Institutional Building (2 storey)	260m SW

Distances from receptor to closest stationary source; directions from source to receiver.

Institutional receptors RI1 and RI2 are understood to be part of the Radha Soami Society Beas Canada organization. Specific details of these buildings could not be verified by Aercoustics, however information provided by the Client indicated that RI1 does not have sleeping quarters while RI2 does. Locations of the highest operable windows have been estimated using publicly available images.

The applicable sound level limits at the receptors surrounding this facility have been established based on MECP publication NPC-300. For sound from a stationary source, the sound level limit at a point of reception, expressed in terms of the one-hour equivalent sound level ($L_{\rm eq}$ -1hr), is the higher of the applicable exclusion limit value given in Table 2, or the background sound level for that point of reception.



² Building is taller than 1-storey, but operable windows are at 1-storey height

Time of Day	Sound Level Exclusion Limit Class 1 Area	Sound Level Exclusion Limit Class 2 Area	Sound Level Exclusion Limit Class 3 Area	Sound Level Exclusion Limit Class 4 Area
	Outdoor Points	of Reception		
Day (07:00 to 19:00)	50 dBA	50 dBA	45 dBA	55 dBA
Evening (19:00 to 23:00)	50 dBA	45 dBA	40 dBA	55 dBA
Plane of	Window of Nois	se Sensitive Spa	aces	
Day (07:00 to 19:00)	50 dBA	50 dBA	45 dBA	60 dBA
Evening (19:00 to 23:00)	50 dBA	50 dBA	40 dBA	60 dBA
Night (23:00 to 07:00)	45 dBA	45 dBA	40 dBA	55 dBA

Table 2: Noise Exclusion Limits – Stationary Noise Sources – Classes 1, 2, 3, and 4

The area surrounding the facility is considered MECP Class 2 in this study. In a Class 2 area, the background sound levels during the daytime (07:00 to 19:00) are defined by man-made sources; in this case, noise is generated primarily by road traffic on Derry Road and Fifth Line. Sound levels at evening time (19:00 to 23:00) and nighttime (23:00 to 07:00) are primarily defined by the natural environment and infrequent human activity. The sound level limits for a Class 2 area are highlighted in Table 2.

Sound Level Criteria from the Town of Milton Engineering and Parks Standards Manual (Appendix F) have also been considered for the proposed community park area. An excerpt from that manual indicating the objective sound level is copied in Figure 1 below.

The objective sound level is Leq day time (7:00 am to 11:00 pm) 60 dBA after attenuation.
 Areas subject to noise levels lower than 60 dBA during the day within the OLA will not qualify for attenuation features.

Figure 1: Excerpt from the Town of Milton Engineering and Parks Standard Manual (2019)

It is noted that the context of this sound level criterion is related to noise impacts from transportation sources. Nonetheless, it has been adopted as a design objective in this report for the community park area of the proposed site, which is normally not considered noise sensitive.

3 Stationary Noise Sources

The stationary noise source prediction model was generated using Datakustik's CadnaA Noise Prediction Software. This model is based on established noise prediction methods outlined in the ISO 9613-2 standard "Acoustics - Attenuation of sound during propagation outdoors — Part 2: General method of calculation". Noise levels were predicted using conditions of downwind propagation, with hard ground in paved areas or bodies of water.



This assessment was based on the facility operating 24 hours per day. The number and paths for heavy trucks have been roughly estimated based on size and shape of each commercial/light industrial area. Heavy truck deliveries will occur at Building 1 (North), Building 6, Building 7, and Building 8. Deliveries to all other buildings are expected to be carried out by cube vans, which were determined to be acoustically insignificant.

Refrigerated trucks are assumed to make up one quarter of total heavy truck traffic. It is assumed that while at a loading dock, regular truck idling will be kept to a minimum such that the contribution can be considered acoustically insignificant. Refrigerated truck idling has been considered, as the truck-mounted chillers are assumed to be running during deliveries. Each refrigerated truck has been assumed to idle for the full hour.

Table 3: Worst-case hourly heavy truck passes

Truck Type	Daytime (07:00-19:00)	Evening (19:00-23:00)	Nighttime (23:00-7:00)
Regular Trucks	56	10	22
Refrigerated Trucks	19	3	7
Total Heavy Trucks	75	13	29

The impulsive noise sources of dock levelling and truck/trailer coupling have also been considered. The locations of the impulses have been modelled in three scenarios with impulses concentrated to loading bays with approximate line of site to each of the nearby receptors. The number of cumulative impulses from all loading bays has been assumed to exceed 9 in one hour, and therefore the increased exclusion limits outlined in Table B-3 and B-4 of NPC-300 do not apply.

Equipment selections and specific layouts of rooftop mechanical equipment have not yet been finalized at the time of this study, and therefore a typical distribution of mechanical equipment has been assumed in all commercial/industrial areas. Operation of rooftop mechanical equipment was based on an assumed duty cycle of 50% at nighttime and evening (19:00 – 07:00) and 100% during the daytime (07:00 – 19:00).

The sound power levels for all noise sources are provided in Appendix C.

4 Summary of Noise Control Recommendations

Noise mitigation is required for this facility and the recommendations are discussed below. It is noted that an "acoustic barrier" can take many different forms (berm, engineered wall, solid fence, etc.). The criteria an acoustic barrier must satisfy are that the surface density must exceed 20 kg/m², the barrier must be free of cracks or gaps, and the dimensions (length and height) are met or exceeded. Beyond these requirements, the specific implementation is left to the facility to ensure flexibility to meet the criteria in a practical way.



Acoustic barriers are required to shield RI1 and RI2, as described in Table 4.

The noise controls outlined below are based on assumed commercial and industrial areas and should be re-evaluated once the final layout design is available.

Table 4: Acoustic Barrier Dimensions

Barrier	Length	Height
Barrier 1a	50 m	3.0 m
Barrier 1b	45 m	5.0 m

Locations of all barriers are provided in Figure 3.

The facility has both steady and impulsive noise sources. Per NPC-300, these noise impacts are modelled separately. Maximum predicted hourly noise impacts from steady noise sources are provided in Table 5. These results include the recommended mitigation measures outlined earlier in this report.

Table 5: Maximum Predicted Sound Levels at Nearby Noise-Sensitive Receptors - Steady Noise

Receptor	Time Period ¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Day	45	50	Yes
R01	Evening	40	50	Yes
	Night	41	45	Yes
	Day	43	50	Yes
R01g	Evening	38	45	Yes
	Night	-	-	-
	Day	46	50	Yes
R02	Evening	41	50	Yes
	Night	42	45	Yes
	Day	44	50	Yes
R02g	Evening	39	50	Yes
	Night	-	-	-
	Day	45	50	Yes
R03	Evening	40	50	Yes
	Night	40	45	Yes
R03g	Day	46	50	Yes
	Evening	40	45	Yes
	Night	-	-	-



Receptor	Time Period ¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Day	47	50	Yes
R04	Evening	43	50	Yes
	Night	43	45	Yes
	Day	45	50	Yes
R04g	Evening	41	45	Yes
	Night	-	-	-
	Day	42	50	Yes
R05	Evening	38	50	Yes
	Night	40	45	Yes
	Day	40	50	Yes
R05g	Evening	35	45	Yes
	Night	-	-	-
	Day	44	50	Yes
R06	Evening	39	50	Yes
	Night	40	45	Yes
	Day	44	50	Yes
R06g	Evening	39	45	Yes
	Night	-	-	-
	Day	46	50	Yes
R07	Evening	40	50	Yes
	Night	43	45	Yes
	Day	47	50	Yes
R07g	Evening	41	45	Yes
	Night	-	-	-
	Day	46	50	Yes
R08	Evening	41	50	Yes
	Night	43	45	Yes
	Day	47	50	Yes
R08g	Evening	42	45	Yes
	Night	-	-	-
	Day	43	50	Yes
R09	Evening	38	50	Yes
	Night	38	45	Yes



Receptor	Time Period¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Day	43	50	Yes
R09g	Evening	38	45	Yes
	Night	-	-	-
	Day	49	50	Yes
RI1	Evening	44	50	Yes
	Night	-	-	-
	Day	37	50	Yes
RI2	Evening	33	50	Yes
	Night	33	45	Yes

¹ Daytime (07:00 – 19:00), Evening (19:00 – 23:00), Nighttime (23:00 – 07:00)

Maximum predicted hourly noise impacts from impulsive noise sources are provided in Table 6.

Table 6: Maximum Predicted Sound Levels at Nearby Noise-Sensitive Receptors - Impulsive Noise

		· · · · · · · · · · · · · · · · · · ·	Communication of the Communica	
Receptor	Time Period ¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Day	44	50	Yes
R01	Evening	44	50	Yes
	Night	44	45	Yes
	Day	39	50	Yes
R01g	Evening	39	45	Yes
	Night	-	-	-
	Day	45	50	Yes
R02	Evening	45	50	Yes
	Night	45	45	Yes
	Day	41	50	Yes
R02g	Evening	41	50	Yes
	Night	-	-	-
	Day	41	50	Yes
R03	Evening	41	50	Yes
	Night	41	45	Yes
D02a	Day	42	50	Yes
R03g	Evening	42	45	Yes



Receptor	Time Period ¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Night	-	-	-
	Day	44	50	Yes
R04	Evening	44	50	Yes
	Night	44	45	Yes
	Day	43	50	Yes
R04g	Evening	43	45	Yes
	Night	-	-	-
	Day	40	50	Yes
R05	Evening	40	50	Yes
	Night	40	45	Yes
	Day	36	50	Yes
R05g	Evening	36	45	Yes
	Night	-	-	-
	Day	41	50	Yes
R06	Evening	41	50	Yes
	Night	41	45	Yes
	Day	39	50	Yes
R06g	Evening	39	45	Yes
	Night	-	-	-
	Day	41	50	Yes
R07	Evening	41	50	Yes
	Night	41	45	Yes
	Day	41	50	Yes
R07g	Evening	41	45	Yes
	Night	-	-	-
	Day	42	50	Yes
R08	Evening	42	50	Yes
	Night	42	45	Yes
	Day	41	50	Yes
R08g	Evening	41	45	Yes
	Night	-	-	-
Doo	Day	41	50	Yes
R09	Evening	41	50	Yes



Receptor	Time Period¹	Predicted Noise Impact (dBA)	Sound Level Limit (dBA)	Compliance (Yes/No)
	Night	41	45	Yes
	Day	41	50	Yes
R09g	Evening	41	45	Yes
	Night	-	-	-
	Day	49	50	Yes
RI1	Evening	49	50	Yes
	Night	-	-	-
	Day	34	50	Yes
RI2	Evening	34	50	Yes
	Night	34	45	Yes

¹ Daytime (07:00 – 19:00), Evening (19:00 – 23:00), Nighttime (23:00 – 07:00)

Per Table 5 and Table 6 above, the applicable MECP sound level limits are not exceeded at any of the noise-sensitive receptors most closely situated to the proposed development. Accordingly, the noise impact of the facility is predicted to comply with the applicable sound level limits at nearby receptors with the implementation of the noise control measures described above.

Figures 4a and 4b illustrate the predicted noise contours from the steady noise sources during daytime and nighttime periods. Figure 5a and 5b illustrate the predicted noise contours from impulsive noise sources; daytime and nighttime impulsive impacts are predicted to be equal and are therefore not separated. All noise contours are provided at a height of 1.5 m, representing the approximate height at first storey window.

5 Conclusion

Aercoustics Engineering Limited was retained by The Remington Group Inc. to prepare a Noise Impact Study to support an application for Zoning Bylaw Amendment for proposed business park development in the Town of Milton, Ontario.

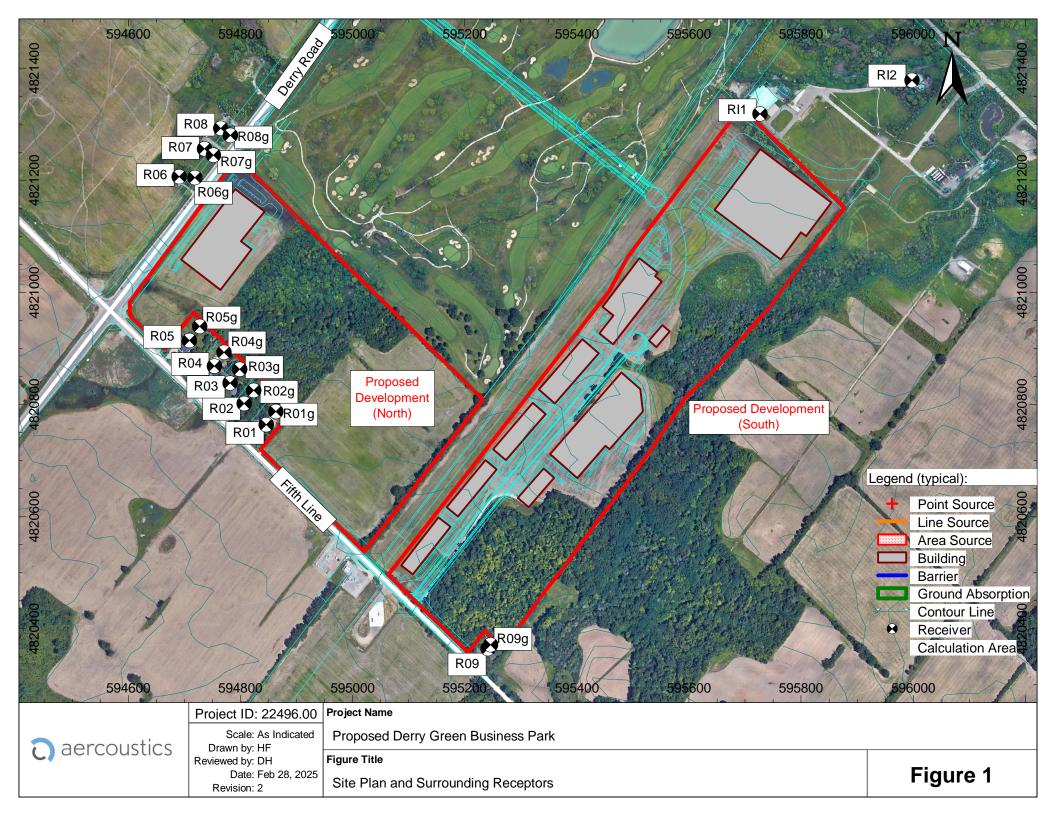
Based on the information available, the conclusions of this report are accurate as of the date it was signed and sealed. This report and associated calculations underwent a comprehensive internal review process to ensure minimization of errors and omissions.

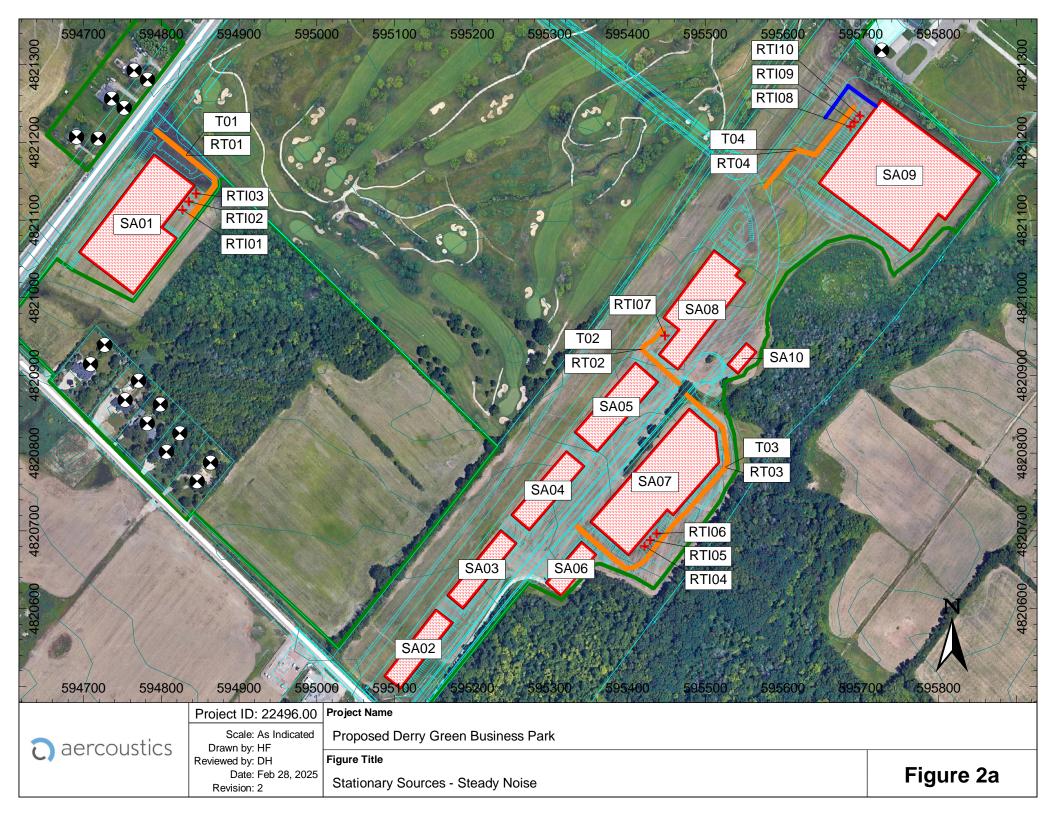
Noise modelling and mitigation outlined in this report has been prepared prior to the site grading and final site layout being available. Aercoustics understands that the specific building layout is not confirmed at this stage, and rather a conceptual site plan has been proposed. As such, conservative assumptions have been made regarding the layout of the stationary sources to ensure site flexibility. It is likely that the mitigation requirements

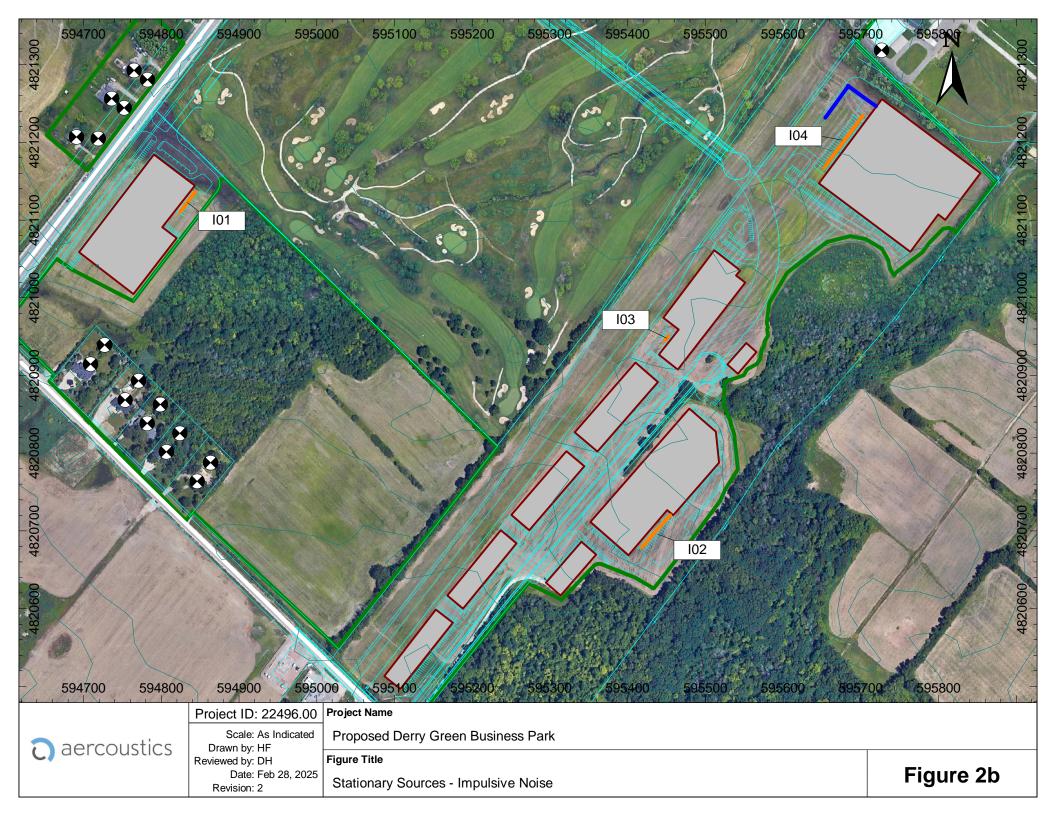


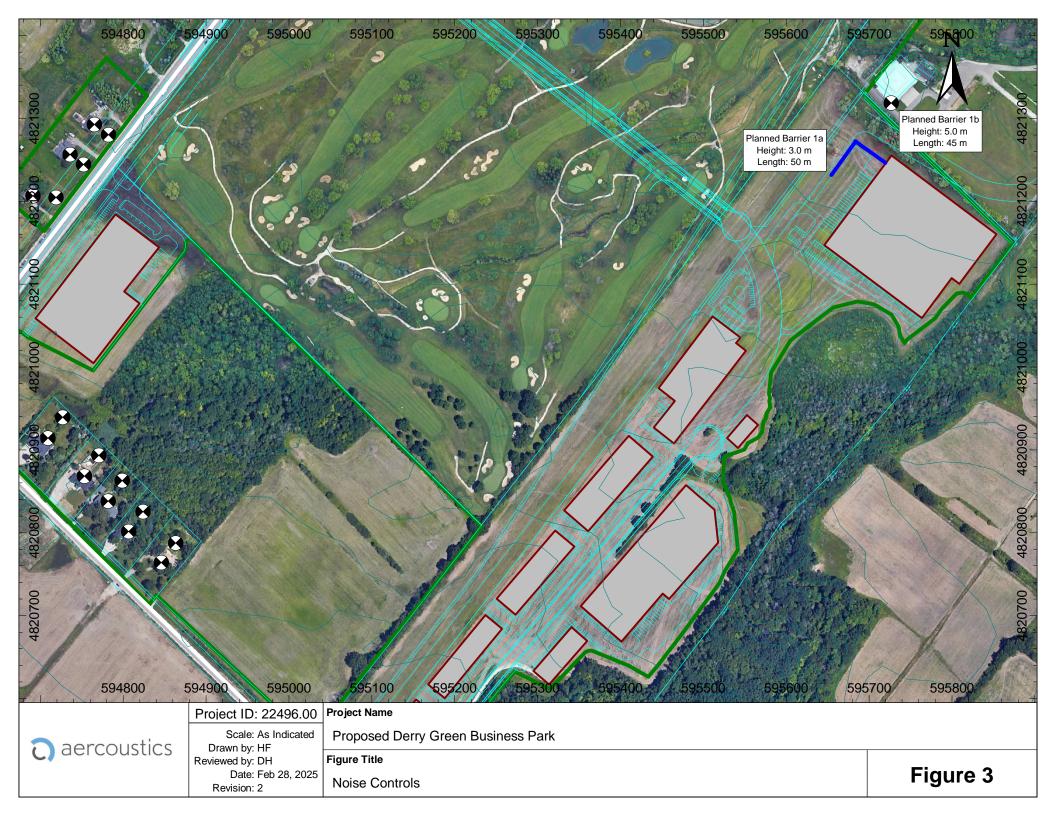
outlined in this report will be able to be reduced once specific site layouts become available. It is recommended that the noise controls outlined in this report be re-evaluated when this information becomes available.

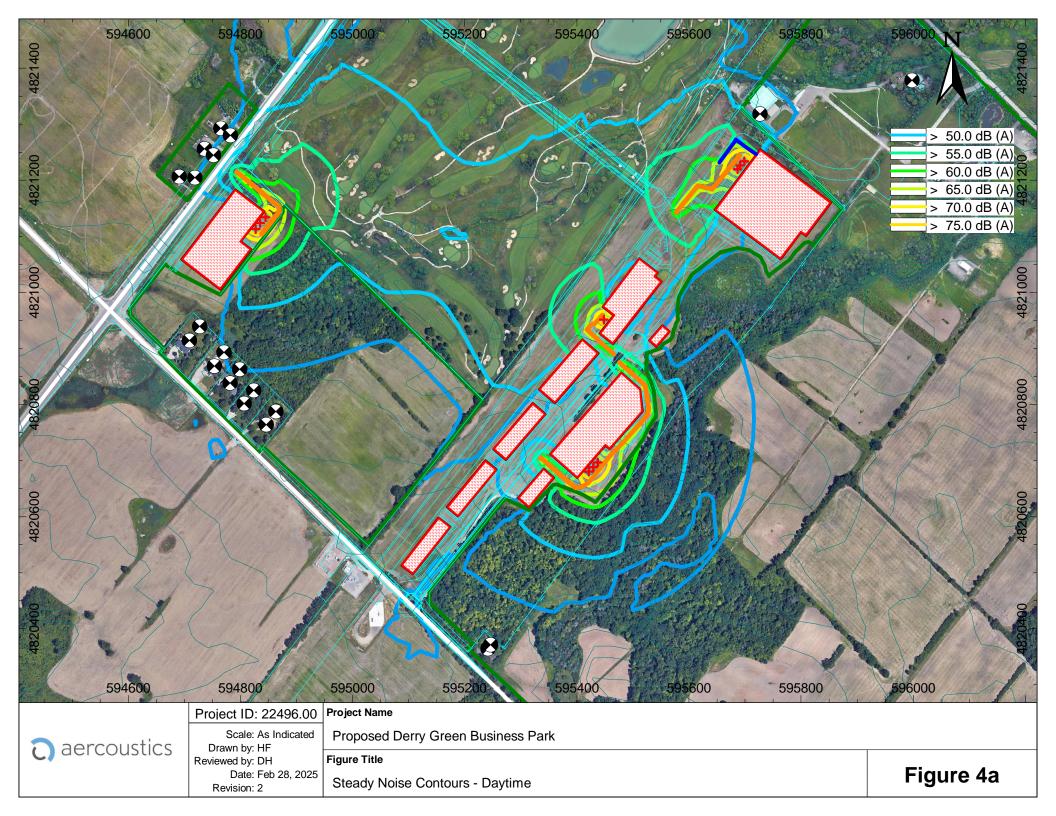
The sound levels at the nearby noise-sensitive receptors are predicted to comply with the noise guidelines of the MECP with the implementation of the noise mitigation measures described in this report.

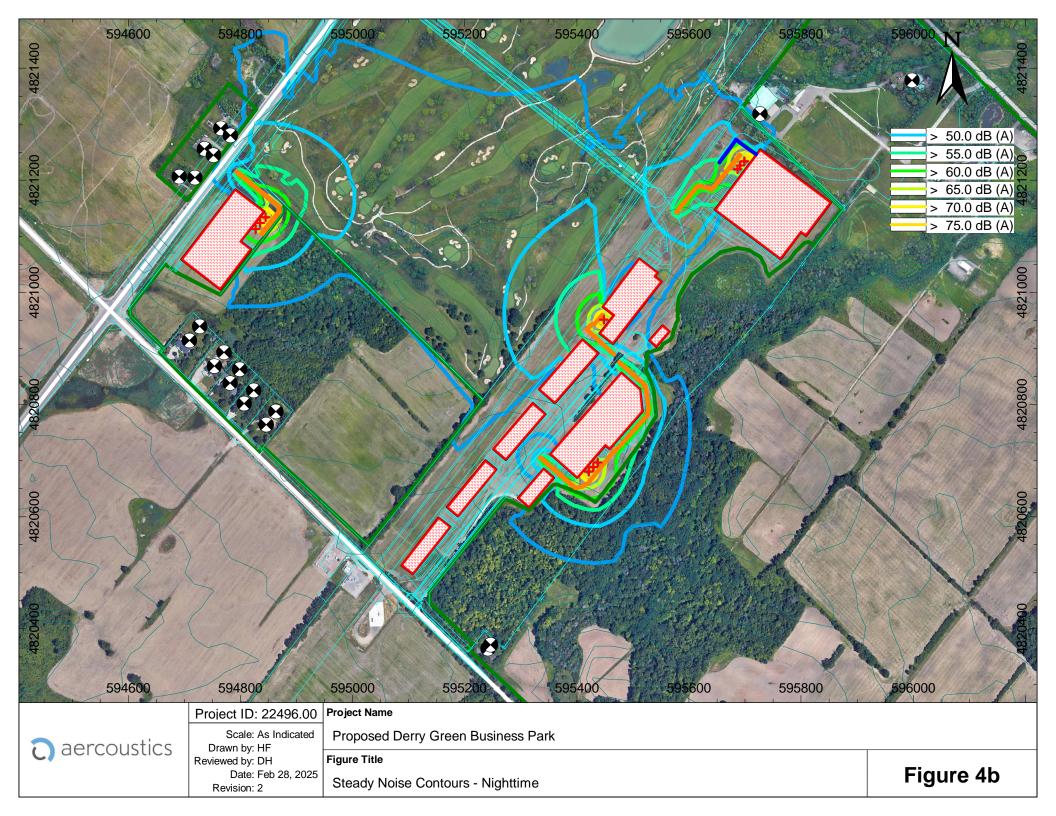


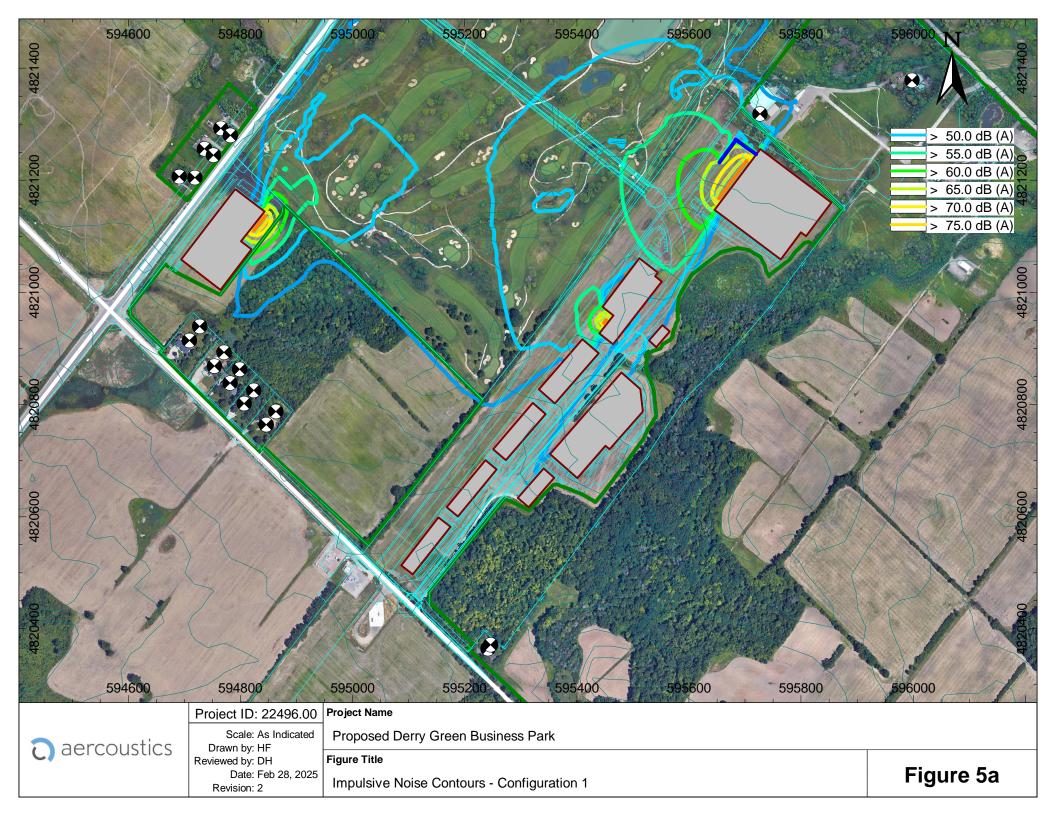


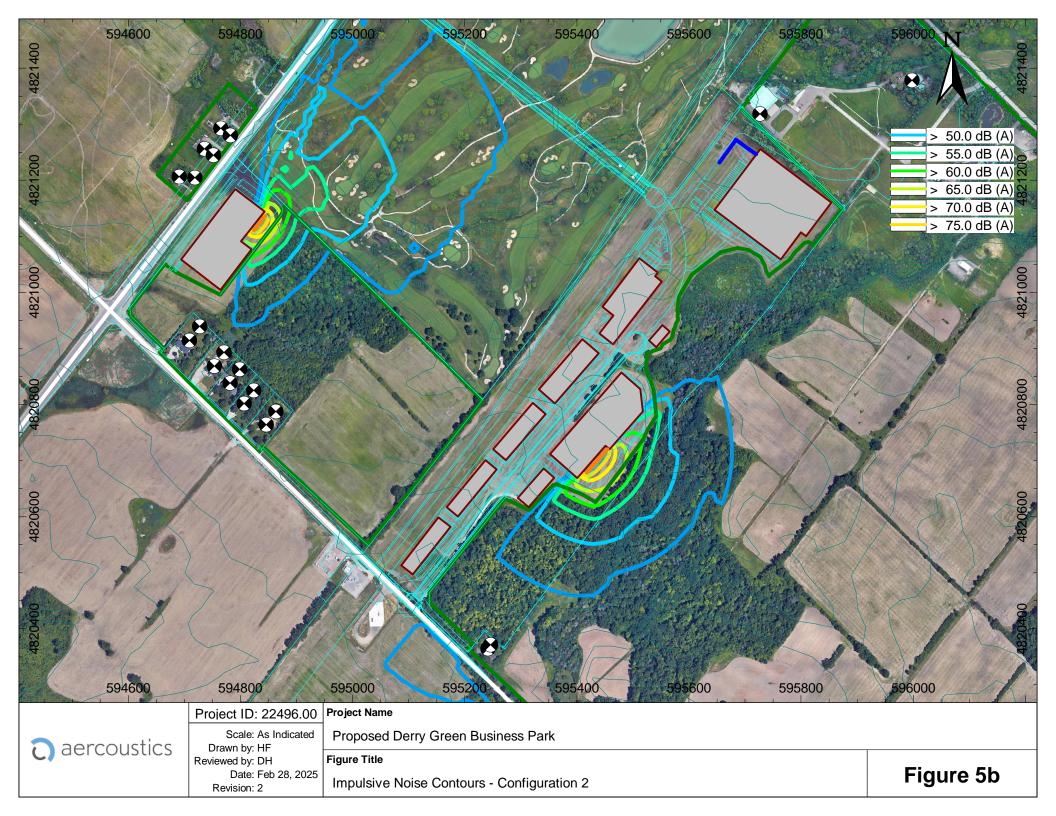


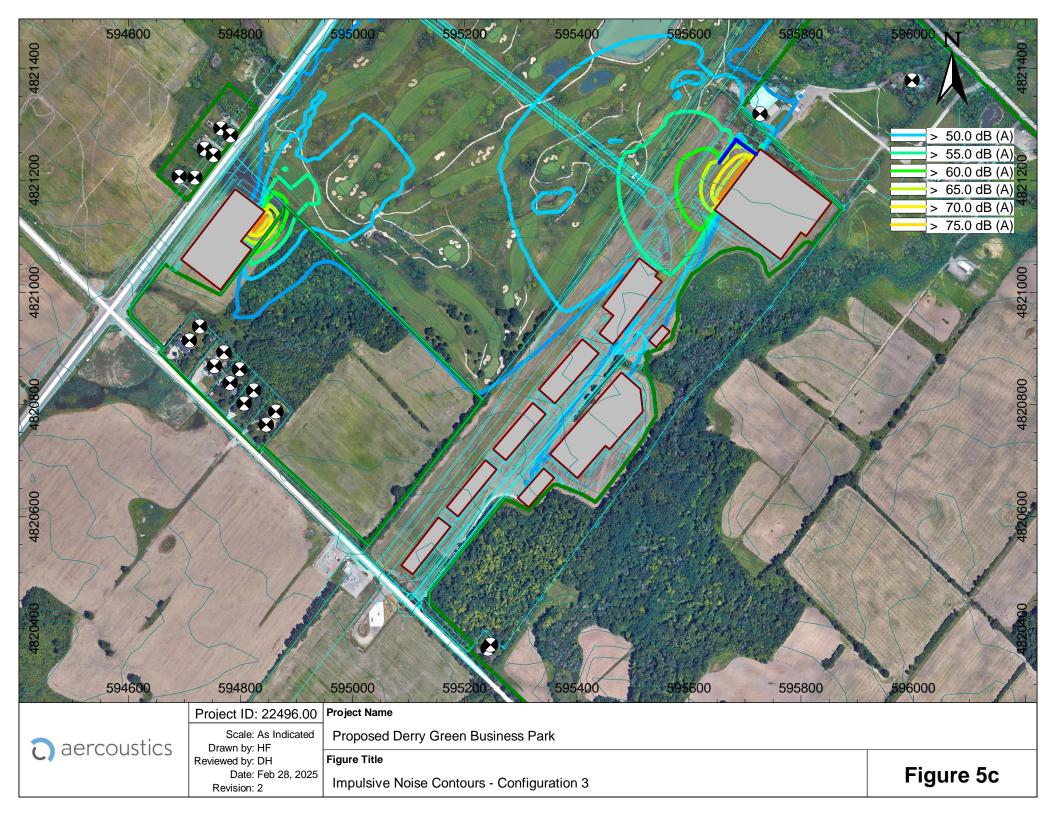








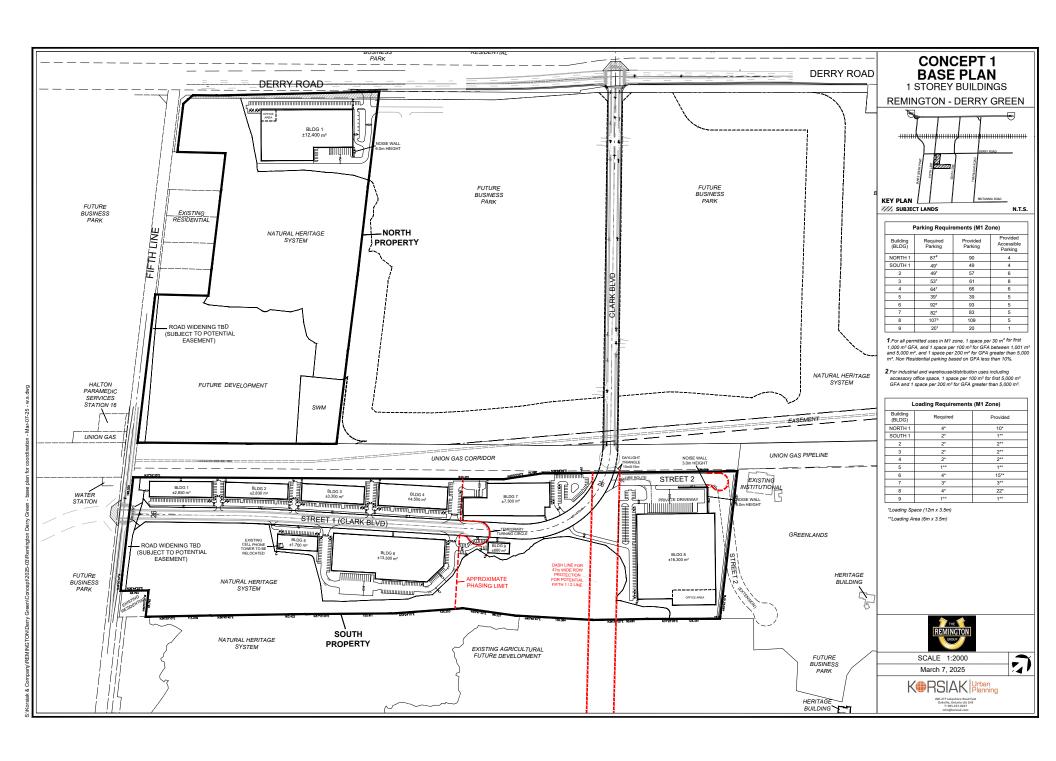






Appendix AConceptual Site Plan





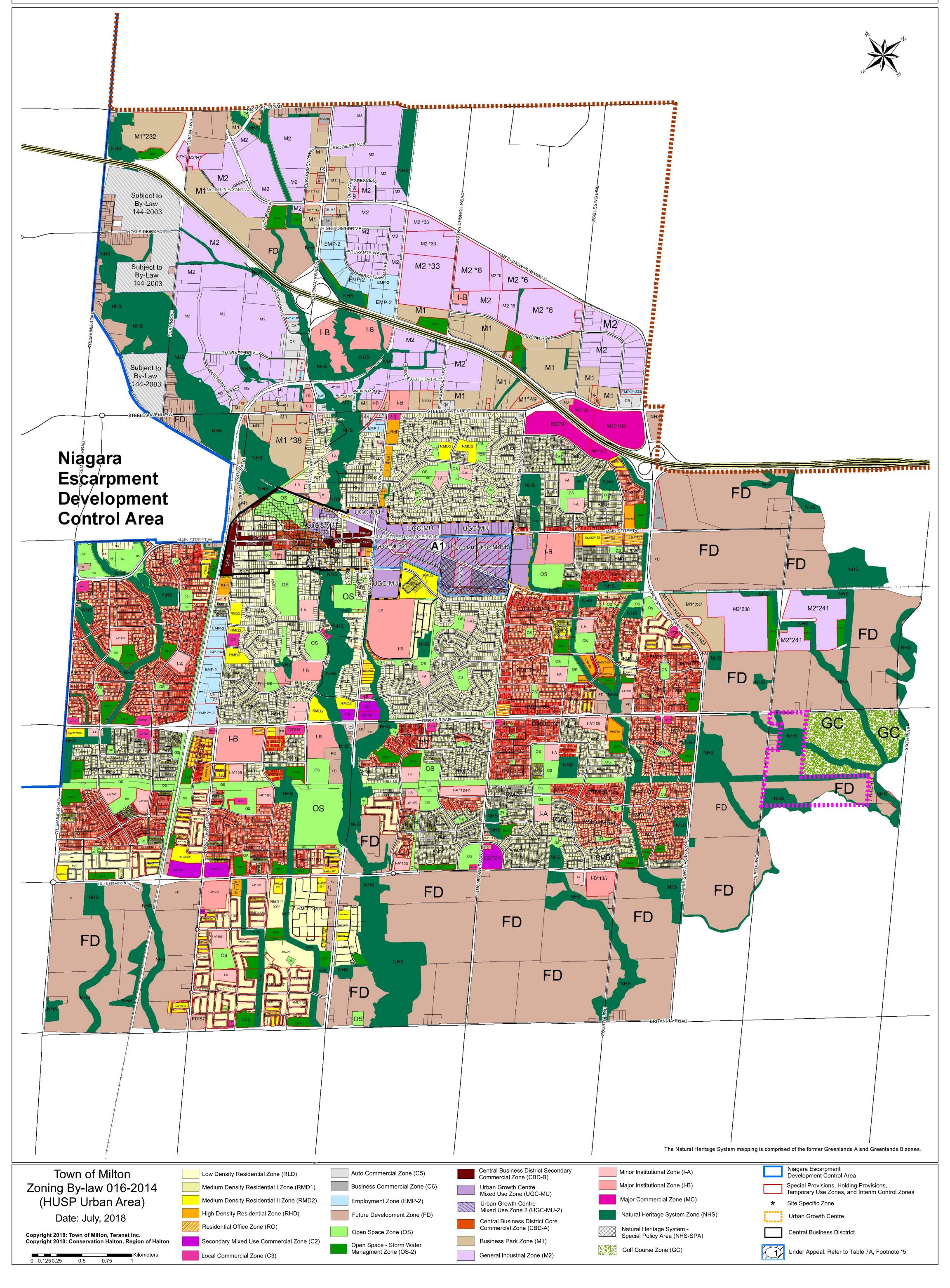
Appendix B

Zoning Map



Schedule A - Urban Area Zoning

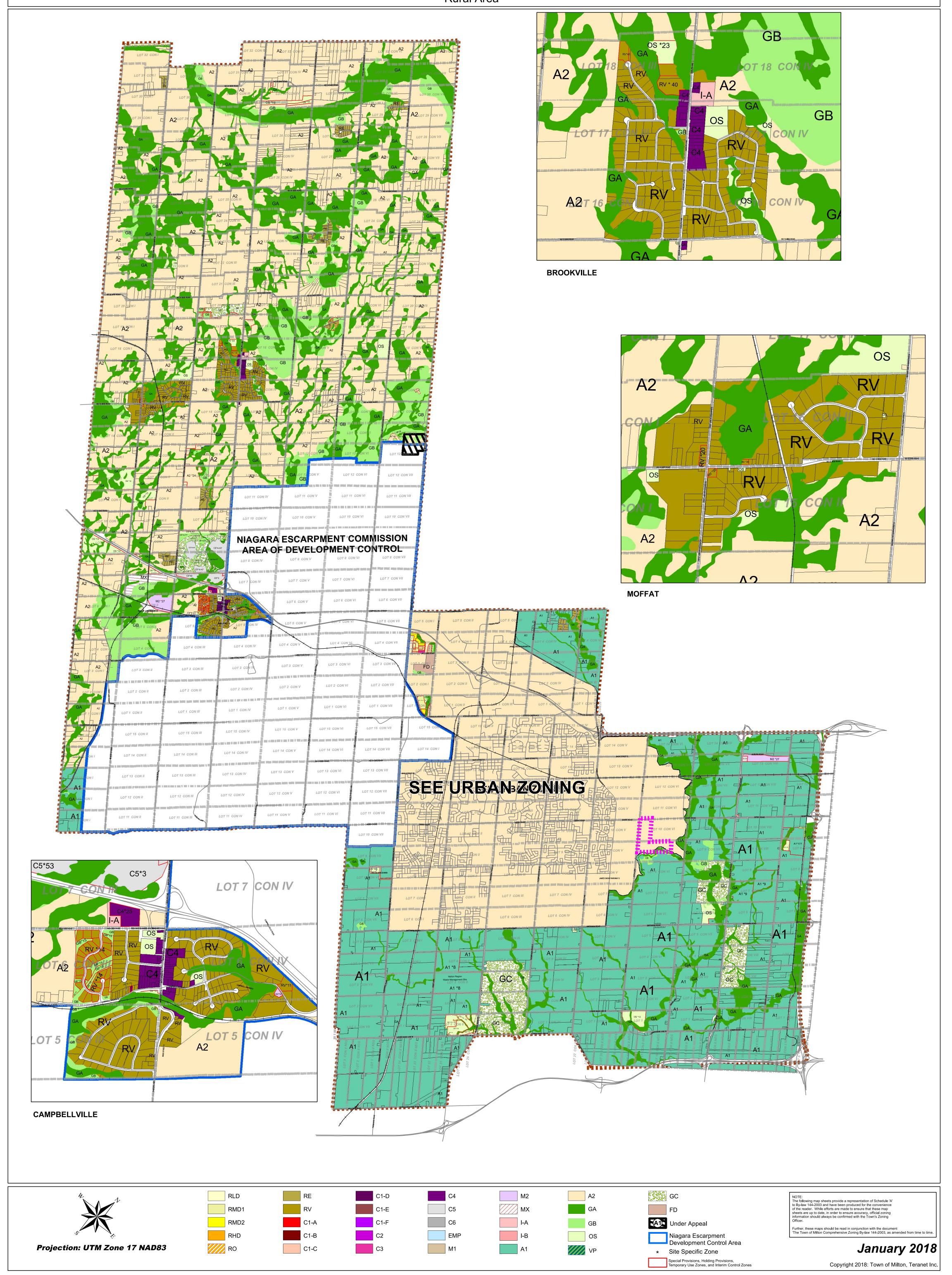






PLANNING AND DEVELOPMENT DEPARTMENT Zoning By-Law 144-2003 Rural Area





Appendix CSound Power Data

Sound Power Data

Source ID	Source Description	Octave Band Centre Frequency (Hz)								Overall Level
		63	125	250	500	1000	2000	4000	8000	dBA
SA01 – SA04	HVAC Equipment	58	57	56	54	52	46	40	34	56*
T01 – T04	Regular Truck	97	101	100	97	93	90	83	76	99
RT01- RT04	Refrigerated Truck	108	106	104	99	96	96	91	85	103
RTI01- RTI12	Refrigerated Truck Idling	104	105	101	100	96	94	88	79	102
101 – 109	Impulsive Source**	-	-	-	-	-	-	-	-	110

^{*} Power per unit area

^{**} Impulsive source sound power is derived from truck coupling (116 dBA) and loading dock leveling (108 dBA) activities in a 1:10 ratio (i.e. 1 truck coupling impulse for every 10 loading dock leveling impulses). Total sound power represents the cumulative sound power of all impulsive sources in the facility.

End of Report