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March 27, 2023

Hugh Whitcomb
Northfield Properties LP
80 New Bond Street
London, United Kingdom
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**Re: Responses to Post Circulation Comments (Noise) – Document Number: 3886640
Plan of Subdivision 30T-21401, Official Plan Amendment No. 32 and
Zone Change Application Z-21-03
Northfield Properties LP / Northfield Properties (GP) Inc.
525-565 Conestogo Road West
RWDI Reference No. 2002470**

Dear Mr. Whitcomb,

This letter documents RWDI's updates to the noise impacts at the proposed development at 525-565 Conestogo Road following updated massing for the development. These updates should be taken as an addendum to the following documents:

- RWDI's Noise and Vibration Impact Assessment, dated April 27, 2021 titled "525-565 Conestogo Road".
- RWDI's responses to the Region of Waterloo (Region) noise and vibration post circulation comments in a letter dated May 9, 2022.

Overview of Updated Massing

The overall massing of the development was updated to use the parking levels to shield the interior of the development. The development consists of 13 towers up to 35 storeys in height and will be built in two phases. The buildings along highway 85 share a common 3-storey podium that consists of a parking garage. The towers will be residential, with some first-floor residential or daycare uses. There is also a proposed park that will lie in the centre of the development.

The first phase of the development maintains part of the existing warehouse and includes the 7 buildings at the northwest half, while the second phase completes the development. The updated massing for the project is shown in Figure 1 below for the first phase and Figure 2 for the second phase.



Figure 1: Project massing for Phase 1 as included in the CadnaA noise model.



Figure 2: Project massing for Phase 2 as included in the CadnaA noise model.



Transportation Source Assessment - Analysis and Results

Sound levels due to the adjacent road and light-rail traffic were predicted using models in the Cadna/A software package. The analysis methodology, assumptions and traffic volumes used for the prediction are the same as those described in the April 27, 2021, report.

To assess the impact of transportation noise on the updated massing of the project buildings, the maximum sound level on the worst-case façade of each building component was determined with the results summarized in **Table 1**. The worst-case levels of Phase 1 or Phase 2 are presented for the buildings present in Phase 1.

Table 1: Worst-Case Predicted Sound Levels of Transportation Sources

Phase	Building	Daytime L _{EQ} , 16hr / Nighttime L _{EQ} , 8hr Façade Sound Level (dBA)				Recommendations for Sound Insulation Design, Warning Clause and/or Ventilation Requirements	Recommended Minimum Window STC Rating
		Road		GRT Light Rail			
		Day	Night	Day	Night		
1	Block_A_14_Storeys	62	58	40	36	1	OBC
	Block_A_20_Storeys	63	57	44	39	1	OBC
	Block_A_6_Storeys	65	58	46	41	1	OBC
	Block_B_30_Storeys	67	60	47	42	2	28
	Block_B_35_Storeys	69	64	46	42	2	31
	Block_B_7_Storeys	67	61	48	43	2	28
	Block_C_28_Storeys	68	63	40	35	2	30
	Block_C_31_Storeys	68	63	38	34	2	30
	Block_G_25_Storeys_N	62	57	39	34	1	OBC
2	Block_D_28_Storeys	68	63	36	32	2	30
	Block_D_31_Storeys	68	63	37	32	2	30
	Block_E_25_Storeys	64	60	33	29	1	OBC
	Block_E_35_Storeys	70	66	36	32	2	35
	Block_E_6_Storeys	63	58	32	28	1	OBC
	Block_F_18_Storeys	60	55	36	31	1	OBC
	Block_F_6_Storeys	61	55	36	32	1	OBC
	Block_G_25_Storeys_S	59	55	37	33	1	OBC
	Block_G_6_Storeys_S	62	55	39	34	1	OBC

Table 1 Notes:

1. Applicable for low and medium density developments: Provision for future installation of air-conditioning, warning clause "Type C".
Applicable for high density developments: Installation of air-conditioning to allow for windows and doors to remain closed, warning clause "Type D".
2. The acoustical performance of building components must be specified to meet the indoor sound level criteria. Installation of air conditioning to allow for windows and doors to remain closed, warning clause "Type D".

Based on the predicted façade sound the predicted worst case minimum window STC rating for the proposed development is STC 35, which would be feasible with typical high-rise glazing assemblies. It is recommended that the STC rating predictions are confirmed for Site Plan Approval.

To assess the impact of transportation noise on the qualifying OLAs for the development, predicted sound level results are summarized in **Figure 3** and **Figure 4** below for Phase 1 and Phase 2, respectively.

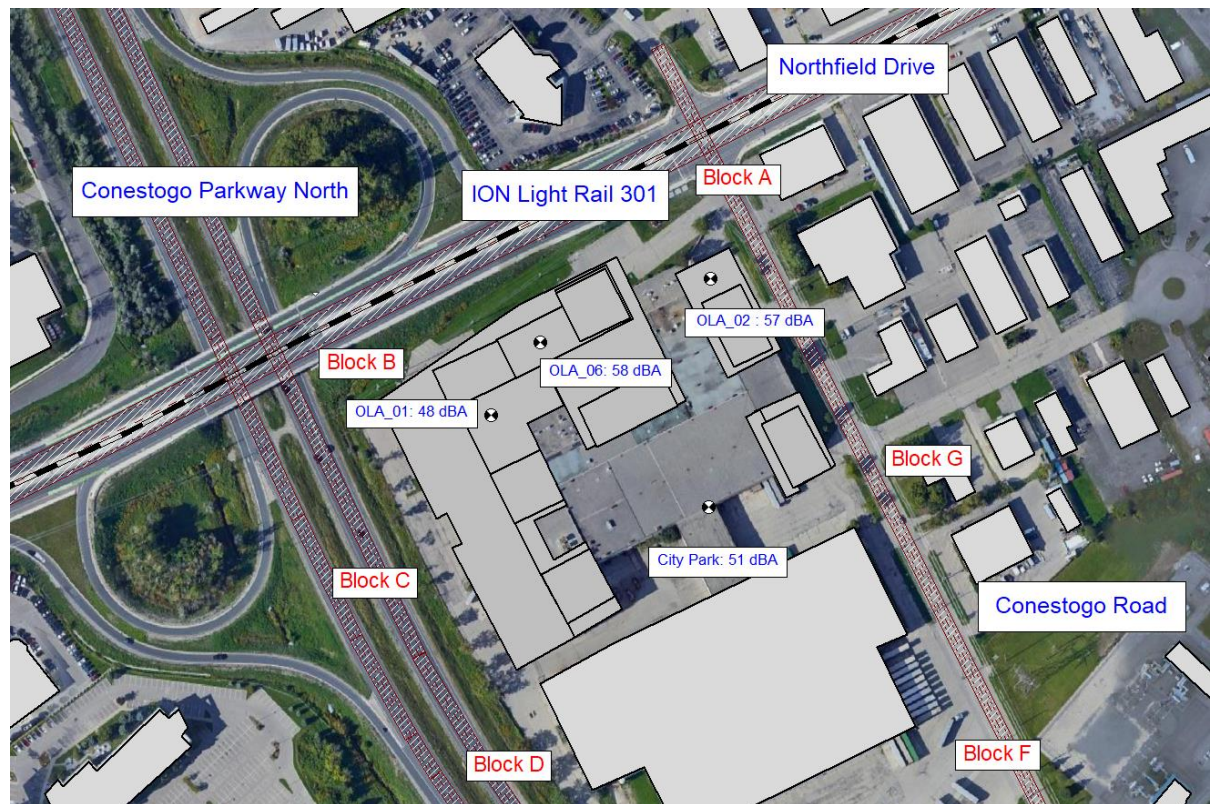


Figure 3: Phase 1 OLA Predicted Sound Levels, Road and Rail



Figure 4: Final Phase OLA Predicted Sound Levels, Road and Rail

As the transportation source sound levels are predicted to be less than 60 dBA at all OLAs in both phases, acoustical barriers are not required; however, where sound levels are predicted to be greater than 55 dBA, a warning clause would be recommended to advise future purchasers/tenants of the sound levels in these cases.

To reduce the sound levels for the applicable OLAs to meet the 55 dBA criterion, the noise barrier locations (in blue) and heights, shown in Figure 5 below would be recommended.



Figure 5: Noise barriers required to meet 55 dBA in Outdoor Living Areas.

As show in Figure 5, the barrier heights that would be required for the 55 dBA criterion are:

- OLA_02: 1.2 m
- OLA_05: 2.0 m
- OLA_06: 1.2 m

Detailed guidance with respect to OLAs for each block is recommended to be revisited for Site Plan Approval application.

Stationary Source Predicted Noise Impact at Representative Receptors

The predicted impact of stationary sources has been updated based on the proposed project massing. The results of the stationary source model are included with Table 2, with the worst case impacts for Phase 1 and Phase 2 presented.



Table 2: Exclusion Limit Comparison to Continuous Stationary Source Façade Sound Levels

Phase	Building	Stationary Source Façade Sound Levels (dBA)		NPC-300 Exclusion Limit (dBA)				Comments
				Class 1		Class 4		
		Daytime L _{EQ} , 16hr	Night- time L _{EQ} , 1hr	Daytime L _{EQ} , 16hr	Night- time L _{EQ} , 8hr	Daytime L _{EQ} , 16hr	Night- time L _{EQ} , 8hr	
1	Block_A_14_Storeys	43	41	50	45	60	55	Meets NPC-300 Class 1
	Block_A_20_Storeys	46	44	50	45	60	55	Meets NPC-300 Class 1
	Block_A_6_Storeys	46	44	50	45	60	55	Meets NPC-300 Class 1
	Block_B_30_Storeys	41	40	50	45	60	55	Meets NPC-300 Class 1
	Block_B_35_Storeys	39	38	50	45	60	55	Meets NPC-300 Class 1
	Block_B_7_Storeys	40	38	50	45	60	55	Meets NPC-300 Class 1
	Block_C_28_Storeys	41	40	50	45	60	55	Meets NPC-300 Class 1
	Block_C_31_Storeys	44	42	50	45	60	55	Meets NPC-300 Class 1
	Block_G_25_Storeys_N	47	45	50	45	60	55	Meets NPC-300 Class 1
2	Block_D_28_Storeys	40	39	50	45	60	55	Meets NPC-300 Class 1
	Block_D_31_Storeys	39	38	50	45	60	55	Meets NPC-300 Class 1
	Block_E_25_Storeys	46	45	50	45	60	55	Meets NPC-300 Class 1
	Block_E_35_Storeys	44	43	50	45	60	55	Meets NPC-300 Class 1
	Block_E_6_Storeys	46	45	50	45	60	55	Meets NPC-300 Class 1
	Block_F_18_Storeys	49	48	50	45	60	55	Meets NPC-300 Class 4
	Block_F_6_Storeys	49	48	50	45	60	55	Meets NPC-300 Class 4
	Block_G_25_Storeys_S	48	46	50	45	60	55	Meets NPC-300 Class 4
	Block_G_6_Storeys_S	48	47	50	45	60	55	Meets NPC-300 Class 4

The results of the noise model indicate that some of the blocks meet the Class 1 limits, however, some blocks exceed Class 1, but meet Class 4 criteria. It is recommended to pursue a Class 4 designation for the following blocks of the development:

- Block F; and
- Block G

The main contributor to the noise impact at the buildings at Blocks F and G are due to the Enova Power Corp. Scheifele Transformer Station, with these sources driving the predicted exceedances of the Class 1



sound level criterion. The sound level impact of the transformer station have been confirmed via long-term measurements on-site, as described in RWDI letter dated May 9, 2022.

As noted in the RWDI report April 27, 2021, it is our understanding that upgrades to the transformer station are expected in the near future (within 5-10 years). We recommend coordination between the relevant stakeholders and Enova Power Corp. to implement noise mitigation as necessary to meet the Class 1 sound level criteria in conjunction with the upgrades to the transformer station. Mitigation could be applied directly to the transformers, or via acoustical barriers in close proximity to the transformers.

As a temporary measure, we recommend the planning authority consider granting Class 4 sound level criteria designation and relevant warning clause (NPC 300 Type F, or similar) to the Block F and G lands. A modified Class 4 designation from what is described in NPC-300 could be considered, for example, applicable only to the transformer station. Discussion between the planning authority, Enova Power Corp. and the developer are recommended to refine the best approach forward to ensure compatibility between the land uses.

Conclusion

Based on the updated site massing and noise modeling, the proposed development is considered feasible from the noise and vibration impact perspective. Further consultation with respect to the Enova Power Corp. Scheifele transformer station noise impact on Blocks F and G and proposed Class 4 sound level criteria is recommended.

We recommend that the noise and vibration impact report is updated at the time of Site Plan Approval application.

Yours truly,

RWDI



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Statement of Limitations

This report entitled Responses to Post Circulation Comments (Noise) – Document Number: 3886640 was prepared by Rowan, Williams, Davies & Irwin Inc. ("RWDI") for Northfield Properties LP ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.