February 20, 2024

To:	**Sergio Campoli** **Toronto District School Board**	**Via e-mail:** **sergio.campoli@tdsb.on.ca**

Re: **Comments on Metrolinx response of January 24, 2024 to ECOH Comments**
ECOH Project No. 27704

1. INTRODUCTION

ECOH has reviewed the memo from Metrolinx dated January 24, 2024 with respect to ECOH's comments of September 26, 2023 in response to previous comments by Metrolinx with regard to Ontario Line construction near Pape Avenue Junior Public School. We offer the following comments regarding points made in the memo.

2. MANAGEMENT OF SOILS WITH BENZO(A)PYRENE AT THE SCHOOL

2.1 Sampling Locations (Response to Section 2.1)

ECOH is in agreement with Metrolinx's action i.e., adding a new ambient air monitoring station at the school playground area near the east property line and in the vicinity of the borehole OL-09102. A high-volume polyurethane foam (PUF) air sampler installation for polycyclic aromatic hydrocarbon (PAH) sampling including benzo(a)pyrene [B(a)P] was reportedly completed.

Note: ECOH did not receive a Site plan for review containing the new ambient air monitoring station. It is assumed that this new location was finalized in coordination with Toronto District School Board (TDSB) and is positioned at the most feasible location that is in close proximity to the borehole OL-09102.

2.2 Monitoring Equipment (Response to Section 2.2)

ECOH is in agreement with Metrolinx's response. As noted in Section 2.1, Metrolinx has added PAHs including B(a)P to their sampling and analysis plan for ambient air.

Furthermore, as per ECOH's recommendation, Metrolinx has provided all pertinent details and information on the sampling equipment and the methodology used for the monitoring of parameters of concern in air. ECOH does not have any comments on this equipment or methodology adopted at this time.

2.3 Sampling and Monitoring of Benzo(a)pyrene (Response to Section 2.3)

ECOH is in agreement with Metrolinx's response i.e., adding/installation of a TE-1000 mass-flow high volume PUF air sampler for monitoring PAHs in ambient air.

Furthermore, ECOH acknowledges and understands that the XAD sorbent tubes are not a US EPA reference method for ambient air monitoring, as such is not an ideal method for ambient air monitoring program. Moreover, ECOH had previously recommended using XAD sorbent tubes only as an alternative monitoring measure (or an additional monitoring measure) until a mass-flow high volume PUF air sampler for PAH monitoring was added to the program.

2.4 Sampling and Monitoring of Volatile Organic Compounds (VOCs) (Response to Section 2.4)

ECOH acknowledges and agrees that using direct-reading instruments for the monitoring of total volatile organic compounds (TVOC) and airborne particulate (PM10) in indoor air should be part of this monitoring program. However, sole reliance on such direct-reading instruments is not appropriate as these readings are representative of concentrations at a specific point of time and could have interferences from other sources, for instance janitorial cleaning activities (as noted by Metrolinx). Therefore, a combination of continuous TVOC monitoring and samples collected using summa cannisters (i.e. time weighted average concentrations over the period of 24 hours) can provide more reliable information on the concentrations of TVOCs and VOCs, respectively in indoor air. As such, it would be prudent to collect representative indoor air samples (perhaps during peak construction periods) using summa cannisters for comparison purposes.

2.5 Height and Location of Indoor Air Samples (Response to Section 2.5)

ECOH is in agreement with Metrolinx's response and action i.e., relocation of two indoor air monitors in consideration of location of ongoing and known future construction activities to be completed outside the school.

Note: ECOH did not receive a site plan with the new locations of the indoor air monitors. It is assumed that these new locations were finalized in coordination with TDSB and are positioned at the most feasible locations that are in close proximity to the ongoing and known future construction activities outside the school.

2.6 Upwind and Downwind Location of Ambient Air Samples (Response to Section 2.6)

ECOH acknowledges that Metrolinx is working with the appropriate authorities/stakeholders (i.e., the City of Toronto and/or the private owners) in obtaining the required approvals for the installation of an ambient air monitoring station on a downwind property.

ECOH strongly recommends that the monitoring device/station, which will be installed on a City owned land or at the private owner's property must be secured appropriately (and if possible be

kept under Metrolinx's full time supervision) so that the monitoring station is not compromised and the integrity of the sampling program is maintained.

2.7 Excavation at Areas with Confirmed Contamination (Response to Section 2.7)

ECOH is in agreement with Metrolinx regarding the applicable Site Condition Standard (SCS), i.e., MECP Table 3 SCS, that was used for the comparison of the soil analytical results. Furthermore, ECOH notes that the three (3) additional soil samples tested for B(a)P along Pape Avenue were collected at depths ranging between 0.3 to 0.9 metres below the ground surface (mbgs). ECOH is unsure if the soil to be disturbed or excavated as part of the construction activities lies within the above noted depths. ECOH recommends that the soil samples be collected and tested from the depths where it is known to be disturbed/excavated as part of the construction activities. As noted by Metrolinx, if the PAH concentrations of soils to be disturbed/excavated is unknown then they should be assumed to contain elevated levels of B(a)P.

Furthermore, Metrolinx response states that: "*The H&S Plan is available to personnel on-site and has been updated to clarify that dust generating work resulting in levels of ambient PM2.5 or PM10 above the ambient air quality limits or action levels in Table 5-1 of the H&S Plan (i.e. alerts, warnings, visible dust) will be adjusted or suspended under windy conditions*". However, the Health and Safety Plan, Version 000B dated January 2024", states the following on p. 16: "*Adjust construction activities or suspend dust generating work under unfavourable or extreme wind conditions resulting in levels of ambient PM2.5 or PM10 above the ambient air quality limits or action levels listed in Table 5-1 (i.e. alerts, warnings, visible dust.)*".

These statements imply that work will only be suspended if unfavourable or extreme wind conditions result in levels of ambient PM2.5 or PM10 above the levels indicated in Table 5-1 (which ECOH assume will mean the 15 minute, not the 24-hour limits specified in that table). It appears that this provision is more lenient than the draft Health and Safety plan of March 2023, which stated that activities would be suspended under extreme wind conditions defined in terms of wind speeds of 30 km/hr, not conditional on the resulting levels of particulate matter. It is ambiguous as to whether "visible dust" would be used as a trigger for suspending construction activities. ECOH comments on this in a separate review of the January 2024 version of the Health and Safety Plan.

3. NOISE TARGETS

3.1 Impacts of Noise

Metrolinx reiterates its rationale for the 69 dBA threshold for outdoor construction noise and continues to rationalize its limits in terms of prevention of hearing loss, citing the reported Toronto Public Health limit of 70 dBA over 24 hours. ECOH has previously stated its disagreement on this matter and will not repeat it here.

In rejecting the idea that noise limits should be based on concerns other than hearing loss, Metrolinx states that "ECOH includes education quality as another consideration for noise limits.

ECOH does not expound on this aspect in either their original comments or this updated response – rather stating that the hearing loss noise limits do not address this."

ECOH has expounded on this issue in previous documents related to this project. In comments on the March 2023 draft of the Health and Safety Plan, ECOH referenced our previous report to TDSB of March 20, 2023, in which we provided discussion and references supporting lower noise limits on the basis of educational quality and non- hearing loss concerns. In that report, ECOH stated the following, referencing the footnoted documents:

> "…exposure of children to high noise levels can affect physical and psychological health, and interfere with speech perception and learning. Recommended levels of noise inside and outside schools are therefore much lower than those cited by Metrolinx.
>
> The Ontario Environmental Noise Guideline -Stationary and Transportation Sources - Approval and Planning (NPC-300)[1] recommends an indoor noise level for schools from transportation sources of 40-45 dBA. This guideline does not apply to construction sources, but is nevertheless an indication of acceptable noise levels from external sources.
>
> The World Health Organization (WHO)[2] and the American National Standards Institute (ANSI)[3] recommend a background level of 30-35 dBA for empty classrooms with no other source of noise. For outdoor playgrounds, WHO recommends a target level of 55 dBA."

ECOH also commented on this matter and discussed evidence for a lower noise target in our memo to TDSB dated April 3, 2023, with respect to communication from MPP Peter Tabuns' office.

3.2 Action levels

Metrolinx continues to confound the terms "limits" and "action levels" as used by ECOH. However, Metrolinx has made a change in the plan and instituted a new 10 minute Leq limit of 80 dBA and a 10 minute Leq of 78 dBA warning level. This addresses ECOH's concern about the need for a warning or action level below the limit. Although this warning level is higher than the 1-hour level recommended by ECOH, it is a welcome improvement. It is appreciated that Metrolinx has established this warning level based on a 10 minute average, which should enable prompt triggering of remedial action when noise levels are high.

4. VIBRATION

Metrolinx does not change its approach by not setting warning or action levels for monitoring vibration, rationalizing that "The Heritage Vibration limits are below the standard building construction vibration limits (Toronto Bylaw 514)." Since it has said that it will adhere to the

[1] Ontario Ministry of the Environment, Conservation and Parks. Environmental Noise Guideline-Stationary and Transportation Sources-Approval and Planning (NPC-300) Part A Background. 2013.
[2] World Health Organization, Berglund B, Lindvall T, Schwela D. Guidelines for Community Noise. 1999.
[3] ANSI S12.60-Part 1 - Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools. 2020.

Heritage Vibration limits, this does not address the recommendation that there be lower warning or action levels set.

5. AIR QUALITY

Metrolinx continues to adhere to its initial indoor and outdoor targets for air pollutants including PM10 and, PM2.5 (outdoor only). It states the following in this context: "Analysis of PM10 and PM2.5 at the school has suggested that PM2.5 (as expected) makes up the majority of the measured PM10". This is poor rationale for Metrolinx' position, as it implies that the higher (more lenient) target for PM10 would be applied to particulate that is primarily made up of PM2.5, the more hazardous size fraction, for which lower limits have been recommended.

Metrolinx states that ECOH's recommendation for a standard for indoor PM2.5 is not applicable in the current situation. ECOH acknowledges that the LEED standard it cites, as well as the outdoor AAQC are not intended as standards for indoor air quality in schools. We have referred to these only as indications of the health hazards of PM2.5 and the advisability of keeping PM2.5 to low levels to protect the health of vulnerable populations such as children. A PM2.5 level in the range of 12 to 15 µg/m^3 is increasingly recognized as an appropriate indoor air quality standard and has been recommended by other organizations. [4,5,6]

6. CONCLUSION

While ECOH continues to disagree with Metrolinx on some of the matters outlined in this memo, it is recognized that construction is proceeding on the basis of the "final" plan set out by Metrolinx. It is not expected that continued exchange on these matters will be productive. ECOH has provided comments on Version 000B of the Health and Safety Plan in a separate document.

[4] US Agency for Toxic Substances and Disease Registry. Guidance for Inhalation Exposures to Particulate Matter,2022 https://www.atsdr.cdc.gov/pha-guidance/resources/ATSDR-Particulate-Matter-Guidance-508.pdf
[5] Indoor Air Hygiene Organization, PM2.5 explained, https://www.indoorairhygiene.org/pm2-5-explained/
[6] The WELL Building Standard, 2016 https://standard.wellcertified.com/well

7. CLOSURE

ECOH would be pleased to provide TDSB with any clarification related to these comments. Should you have any questions, please do not hesitate to contact the undersigned.

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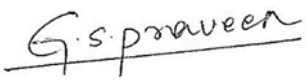

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