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Dear Mr Gotsis

**Meadowbank Schools Project Mod 3 – Extended Construction Hours (SSD 9343 Mod 3)
EPA Advice on Modification**

I am writing to you in reply to your invitation to the Environment Protection Authority (EPA) to provide comments on the modification for the above State Significant Development (SSD) proposal.

The EPA understands that the modification includes an application to extend construction hours from the hours approved in Conditions C3 and C4 of the Project Approval – Monday to Friday 7 am to 6 pm, Saturday 8 am to 1 pm, with provisions for extensions for lower noise work up to 7 pm Monday to Friday and up to 4 pm on Saturdays. The proposed extension is for selected works/activities to be carried out between 6 am and 10 pm Monday to Friday, and 6 am to 4 pm on Saturdays and Sundays.

The EPA has reviewed the following documents:

- *Section 4.55(2) Application to amend SSD_9343 Meadowbank Schools*, Letter to Jason Maslen, Department of Planning Industry and Environment, dated 17 March 2021, prepared by Urbis (Modification Report).
- *The Meadowbank Education and Employment Precinct Schools Project Sydney Extended Working Hours Construction Noise and Vibration Assessment*, Rev 1, dated 3 February 2021, prepared by White Noise Acoustics (CNVA)

Neither the Modification Report nor the CNVA appear to provide sufficient justification to satisfy the requirements of the *Interim Construction Noise Guideline* (ICNG) (DECC, 2009) for the extension of construction hours beyond the working hours permitted by the consent. Further, the submitted CNVA is not adequate to be considered for assessment in its current state. There are a number of issues and many areas where it is not consistent with the ICNG. These are detailed in **Appendix A**.

Should you wish to discuss any of the matters raised, please contact Anna Timbrell on 9274 6345 or email anna.timbrell@epa.nsw.gov.au

Yours sincerely

A handwritten signature in blue ink, appearing to read 'G Orel'.

GEORGE OREL
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APPENDIX A

Justification for the modification

Chapter 4.1 of the Modification Report states that the justification for extension of hours is “to complete the bulk of construction and internal fit out works in an appropriate timeframe.” Chapter 2.3 of the ICNG states that if applying for work outside of standard hours “the proponent should provide the relevant authority with clear justification for reasons other than convenience...” A justification for the proposed out of hours works aside from project convenience does not appear to have been adequately detailed in the modification.

Chapter 4.1 of the modification report also implies there will be a benefit to the community in completing works as follows: “By expediting the construction period for the site, any impact of the works will be reduced.” However, this is not necessarily the case as the proposed construction work is to start during the night period, instead of the day period. The proposed hours of work are also much longer per day than is currently approved and includes work all day on Sundays, which was previously not permitted. There does not appear to be any reference to community agreement or engagement on the issue prior to the modification being applied for.

The EPA recommends that sufficient justification, consistent with the ICNG, is provided for an application to work outside of standard hours. This should include the outcome of any community engagement to determine if local residents have a preference for extended work hours to support a shorter construction timeframe.

Comparison with extraordinary temporary planning orders

The Modification Report has compared the proposed extended hours with the hours worked under the *Environmental Planning and Assessment (COVID-19 Development – Construction Work Days) Order 2020*. The EPA understands that the purpose of the temporary planning orders to extend work hours was an extraordinary measure to ensure the continuity of important projects during the pandemic by allowing additional work time to assist with social distancing and other pandemic control practices. Therefore, the EPA considers it inappropriate to compare the proposed extended working hours with the hours under the temporary planning orders. Furthermore, the extended hours permitted under the Order are contingent on additional requirements to manage noise.

The proponent is seeking to increase working hours based on a comparison with temporarily extended work hours permitted under the Order, rather than comparing these extended hours with the permitted hours of work set out in the conditions of consent, without sufficient justification.

The comparison of working hours should be performed using what is currently approved and what is proposed, not the temporary planning orders as they do not represent business as usual conditions. Compared with the existing approved construction working hours in Condition C3, the modification of the extension is as follows:

- Monday to Friday: + 5 hours per day including one hour during the night period and 4 hours during the evening period.
- Saturdays: +5 hours including one hour in the night period.
- Sundays: +10 hours including 2 hours in the night period.

The proposed extension of hours would mean work during the night period and on Sundays which were previously not permitted unless certain conditions were met. This modification would potentially extend the number of hours residents are exposed to construction noise by up to 40 hours per week more than is currently permitted. There is no discussion in the modification to suggest community engagement has occurred to consult on this significant increase in hours.

Furthermore, the suggestion in Chapter 3.1 of the Modification Report that impacts would be reduced because of the reduced overall length of time of the project has not been substantiated – particularly given the potential increase of up to 40 hours per week more construction noise.

Given the significant difference between the currently approved hours of construction with the proposed construction hours, the EPA recommends that the proponent be required to provide further information and justification for extended hours in accordance with the ICNG. This includes additional measures to manage impacts of the extended hours.

Notwithstanding the above, there may be scope for proposed internal fit out works to be undertaken out of hours if works comply with condition C5(c).

EPA comments on the CNVA

1. Proposed working hours conditions amendments

The CNVA does not provide sufficient justification that an extension of hours is justified according to the ICNG. Chapter 1 of the CNVA details the proposed changes to the conditions relating to construction working hours. The CNVA appears to have only considered assessments of activities relating to the use of crane towers, waterproofing and landscaping. However, the proposed conditions also appear to include “*façade installation*” and “*deliveries using maximum 12.5m trucks*”. These activities have not been defined, nor assessed in the CNVA.

The EPA recommends that impacts associated with façade installation and truck deliveries are assessed.

2. Rating Background Noise Levels

The background noise levels nominated in CNVA Table 2 do not match the background noise levels in Table 5-2 of the noise assessment in the original EIS (*Noise Impact Assessment*, prepared by Acoustic Logic Consultancy, dated 10 October 2019) nor do they match Table 1 of the document *Additional Hours Construction Noise Testing*, prepared by White Noise, dated 2 February 2021 (included at Appendix B of the CNVA).

The EPA recommends the appropriate rating background levels (RBLs) are used for receivers.

3. Construction noise management levels

The construction noise management levels in Chapter 5 of the CNVA do not appear to be consistent with the ICNG. Table 3 of the CNVA has nominated the “Resulting Noise Level Criteria” for residential receivers as LAeq,15min 60 dBA and 58 dBA for evening and night respectively. It is not clear what this table is referring to as the ICNG nominates noise management levels outside of standard working hours as LAeq,15min no greater than rating background level (RBL) plus 5 dB. Noise management levels of 60 and 58 during the evening and night for residential receivers respectively do not appear to be based on background noise data in Table 2 or other tables with background noise data in the CNVA.

Table 3 of the CNVA also appears to have set the noise management level for commercial receivers as “background noise” + 5 dBA. This is not consistent with Section 4.1.3 of the ICNG which provides noise management levels for receivers other than residences and sensitive land uses.

Table 4 of the CNVA does not appear to be consistent with the ICNG. The noise management level for receivers on Banks Street during the period 6 am to 7 am is nominated as LAeq,15min 47 dBA. However, the period 6 am to 7 am is in the night period and therefore the night-time background noise level should be used. Using the data in CNVA Table 2, this would make the noise management

level 42 dBA instead of 47 dBA. The same issue appears in the setting of NMLs for Macpherson Street.

Where the activities occur over two different time periods, such as the day and night period as is the case in Tables 4 and 6, the NML should be derived using the relevant RBL from the time period being assessed. The period Sunday 6 am to 4 pm includes both the day and night period. The same applies to Saturdays between 6 am and 4 pm.

The EPA recommends that the NMLs are revised to meet the requirements of the ICNG and use the relevant RBL from the appropriate time period.

4. Assessment of construction noise impacts

The CNVA does not include an assessment of sleep disturbance. Section 4.3 of the ICNG requires consideration of sleep disturbance impacts for works that take place during the night period for more than two consecutive days. The proposal is for work in the night period every day of the week.

The EPA recommends that sleep disturbance is assessed.

The proposed extended working hours have the potential to change the time and volume of movement of vehicles (both light and heavy) accessing the construction site. The construction site is a temporary traffic generating development. The CNVA has not included any consideration of vehicle movements to and from the site on the public road network.

The EPA recommends that the potential impact from construction traffic generated on public roads is assessed consistent with Section 2.1 of the ICNG. The assessment should be conducted with reference to the *Road Noise Policy (RNP)* (DECCW, 2013).

Table 5 and Table 6 of the CNVA have used the L_{10} dBA noise level descriptor. This is not consistent with the ICNG which uses the $L_{eq,15min}$ dBA descriptor.

The EPA recommends that the assessment is revised to use the appropriate noise level descriptor consistent with the ICNG.

Table 5 of the CNVA does not include all noise sources proposed during the extended hours. For example, CNVA Chapter 6.1.2 states that *"Deliveries including small vans and trucks are proposed during the extended construction hours."* These noise sources have not been considered in the assessment.

The EPA recommends that all noise sources associated with the proposed activities are included in the noise assessment.

The sound power levels listed in CNVA Table 5 do not appear to be consistent with the reference for them. *Australian Standard 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites* is quoted as a reference for Table 5. However, the sound power levels listed in Table 5 are inconsistent with the same activities or equipment listed in Appendix A of AS 2436. For example, Table A1 of AS 2436 lists a sound power level of 105 dBA for tower cranes, yet the CNVA has used 95 dBA, which is significantly lower. Whilst Appendix B of the CNVA does include a report on noise measurements of tower cranes at the site, it does not establish a sound power level and therefore it is unclear what the sound power level is based on.

The EPA recommends that the sound power levels are reviewed and amended. The sound power levels must be based on reliable sources of data and their references included in full in the CNVA. Where previous noise measurements are used as a reference, full details of these measurements should be provided.

Activities such as “handheld works”, “materials movements” and “low noise power tools” are not defined and therefore it is not possible to understand what activities or equipment they refer to.

The EPA recommends that activities listed as landscaping activities in Table 5 are clarified and explanations and equipment are provided along with the assumed sound power levels.

There are items in CNVA Table 6 which require further clarification as follows:

- It is not clear how the “Correction for Number of areas with Activities in use” has been calculated and what it means. If there are multiple areas in use at the same time, it could be assumed that they would have a different propagation path from source to receiver and therefore should be calculated separately prior to being summed at the receiver location.
- A -20 dB correction has been applied to the “Tower cranes and power sources (including 3 cranes)” noise level for “Correction for Building and barrier.” However, it is not clear what the noise source height is for the tower crane and therefore it is unclear how much shielding would be applicable to this source.
- There is not sufficient justification for the shielding applied to either the tower cranes or the landscaping works. Justification for applying this shielding should be included in the CNVA.
- The sound power level used for landscaping and manual works in Table 6 does not match the sound power level nominated for the same activity in Table 5.
- The “extended hours noise criteria” is not consistent with the ICNG for a number of aspects as previously highlighted.

The EPA recommends that these matters are clarified and Table 6 is amended accordingly.

Page 19 of the CNVA states: *“Based on the qualitative assessment of construction noise associated with the proposed extended hours period resulting noise levels will be acoustically acceptable.”* No qualitative assessment has been provided in the CNVA. It may be a typo meant to mean quantitative. Furthermore, it is not clear what “acoustically acceptable” means.

The EPA recommends that this statement is clarified.

Bullet point 2 on page 19 of the CNVA is not clear when it refers to “*potential maximum levels*”. The CNVA has not provided a maximum noise level assessment and appears to have used the L_{10} dBA descriptor. The ICNG uses the $L_{Aeq,15min}$ descriptor for assessment using noise management levels and L_{AFmax} when assessing sleep disturbance.

The EPA recommends that the statement is clarified and that the appropriate noise level descriptors are used in the CNVA.

5. Noise management

A number of areas require clarification or further information regarding noise management as follows:

- Chapter 6.1.3 should include a commitment to apply all reasonable and feasible mitigation measures to reduce construction noise as far as is practical in order to be consistent with the ICNG.
- Item 9 of chapter 6.1.3 states that deliveries during the extended hours can include trucks up to a maximum of 12.5 metres long. There is no assessment of deliveries or vehicle noise in the CNVA whether on site or on the public road network and therefore this management measure should not be included unless supported by analysis in the CNVA.
- Chapter 7 appears to largely be a repeat of chapter 6.1.3 and therefore the matters raised above would also apply.
- Additional mitigation and management measures may be applicable when the CNVA is amended or revised to address the EPA’s comment. As a result, Chapter 6.1.3 and 7 of the CNVA should be updated accordingly.

The EPA recommends that the noise management measures are amended in consideration of the matters raised and to be consistent with the ICNG.

6. Vibration

Chapter 6.2.3 of the CNVA has nominated a construction vibration “impact criteria” of 10 mm/s. However, it does not appear that human comfort vibration has been adequately considered. Table 2.1 of *Assessing Vibration, A Technical Guideline* (DEC, 2006) would suggest that the construction activities proposed would be in the intermittent vibration category. The appropriate trigger levels for intermittent human comfort vibration are defined as vibration dose values in Table 2.4 of the guideline.

The EPA recommends that the applicant clarify the vibration criteria for human comfort at specific receivers as defined in *Assessing Vibration, A Technical Guideline* (DEC, 2006).

7. Appendix B Crane Noise Assessment

The report of noise measurements of tower cranes and power generators at the site was included in Appendix B of the CNVA (*Additional Hours Construction Noise Testing*, prepared by White Noise, dated 2 February 2021). Table 3 presents measured noise levels of between 51 and 57 Leq,15min dBA at residents in Macpherson Street for the tower cranes and associated generators. These measurements are compared with the evening noise management level of 57 dBA.

The CNVA proposes to use tower cranes from 6 am and therefore the noise management level during the night period would be lower than the evening period. The conclusions of the tower crane report rely on the fact that the measured total noise level was at or below the evening noise management level. However, the noise measurements do not establish the noise level from the cranes and power units only. Therefore, the conclusion on page 19 of the CNVA that crane noise would be below the night noise management level cannot be made from this data.

Table 6 of the CNVA predicted a level of L₁₀ 43 dBA for tower crane activities at the Macpherson Street residences. The measured total noise level in Table 3 of the tower crane assessment indicates L_{eq,15min} measured levels of between 8 and 14 dB greater than L₁₀ 43 dBA. Although the different descriptors used make comparison difficult, the tower cranes were noted as only part of the noise environment and not the dominant source. The tower crane assessment does not provide an estimated or calculated noise level from the crane and power sources only, and therefore it is not possible to determine if the noise levels in Table 6 and Table 5 of the CNVA are appropriate.

Point 2 on page 19 of the CNVA references the tower crane assessment as demonstration that tower cranes can be used from 6 am and meet the noise management level. However, as identified above, the level of information in the tower crane assessment does not currently support this conclusion.

The EPA recommends that the noise level from the tower cranes is clarified and any information or measurement data used to support the conclusions of the CNVA is appropriate. Point 2 on page 19 of the CNVA should be also amended accordingly so that the conclusions are consistent with the data and analysis presented.