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26 July 2021

Ms Jenny Chu
Planning Officer
Department of Planning, Industry and Environment
Locked Bag 5022
Parramatta NSW 2124

By email: jenny.chu@planning.nsw.gov.au

Dear Jenny

**Carlingford West Public School Upgrades (SSD 10879802)
EPA Advice on Environmental Impact Statement (EIS)**

I am writing to you in reply to your invitation to the NSW Environment Protection Authority (EPA) to provide comment on the Environmental Impact Statement (EIS) for the above project.

The EPA understands the project involves demolition works including the removal of part of the existing car park, walkways and sports courts; construction of two new three storey buildings to contain a total of 48 homebases, 6 special programme rooms, and a single storey library; a new carpark, changes to pickup and drop off zones; landscaping; and site remediation.

The EPA has reviewed relevant sections of the EIS provided by the Department of Planning, Industry and Environment (DPIE) and advises the following regarding noise and vibration and contamination.

1. Noise and Vibration

The EPA reviewed the *SSDA Acoustic Assessment*, Ver Final-3, dated 23 June 2021, prepared by Pulse White Noise Acoustics (NIA). The NIA does not satisfy the Secretary's Environmental Assessment Requirements (SEARs), nor the guidelines and policies required to be used under the SEARs. There are several matters which require rectification, revision or more information prior to being able to assess the proposal.

A summary of key issues is as follows:

- Cumberland High School has not been assessed for operational or construction noise and vibration impacts.
- The SEARs require a quantitative assessment of all operational noise which the NIA has not done. Mechanical plant locations and the staff car park are proposed adjacent to boundaries with residential receivers and this presents a potentially significant risk which has not been adequately addressed.
- The operational assessment using the *Noise Policy for Industry* (EPA, 2017) (NPfI) must consider the total operational noise from the premises, not individual parts, or stages. This includes both existing and proposed operational noise sources.

Phone 131 555
Phone +61 2 9995 5555
(from outside NSW)

TTY 133 677
ABN 43 692 285 758

Locked Bag 5022
Parramatta
NSW 2124 Australia

4 Parramatta Square
12 Darcy St, Parramatta
NSW 2150 Australia

info@epa.nsw.gov.au
www.epa.nsw.gov.au

- The operational noise assessment has not considered the proposed times of use of the school during the day, evening, and night.
- Some noise monitors were located next to reflecting walls/fences and one adjacent to an air conditioning unit. No justification was provided for why this is representative of background noise levels at receivers.
- The staff car park noise assessment is not currently adequate and multiple potential issues were identified. The new car park shares a boundary with a two-storey residential receiver and therefore represents a potentially significant risk.
- The external noise intrusion assessment does not identify the design acoustic performance of wall or roof systems. The assessment also does not appear to have considered how noise generated at the school may affect noise intrusion.
- The operational road traffic noise assessment has not adequately addressed the potential for impacts including those caused by the staff car park and times of use, particularly on Felton Road West.
- The assessment of construction noise impacts is not consistent with the predicted noise levels nor the *Interim Construction Noise Guideline* (DECC, 2009) (ICNG).
- The allocation of noise mitigation for construction is not consistent with the *Interim Construction Noise Guideline*.
- The construction noise, and road traffic noise assessment have not considered the proposed working hours, including deliveries at 5 am.
- The construction road traffic noise assessment does not appear to have adequately considered the potential for noise impacts on Felton Road West.

Please see **Appendix A** for the EPA's detailed outline of matters recommended for the applicant to address prior to determination.

2. Contamination

The EPA reviewed the *Report on Detailed Site Investigation (Contamination)*, Rev 6, 24 June 2021 Douglas Partners (DSI), and the *Remediation Action Plan*, Rev 3, 24 June 2021, prepared by Douglas Partners (RAP).

The DSI identified the presence of asbestos material in fill at the site and advised that additional investigations are recommended to better characterise the degree, extent and nature of the asbestos encountered. Based on test results, the DSI considers the area marked in Drawing 2 (Appendix A of the DSI) to be an area of environmental concern for remediation purposes and additional investigations.

As the site is currently operating as a school, the DSI recommends undertaking these investigations after the site has been established and access is controlled, when appropriate site management measures have been put in place, and when inaccessible areas are available for testing as part of the areas of interest are also below existing roads, buildings and demountable classrooms that are proposed to be demolished or removed.

The RAP recommended further investigation including a Hazardous Building Material Survey of buildings present on site prior to demolition or refurbishment, a site walkover to identify any suspected asbestos contaminated materials within the demolition footprint, and drilling excavation of 13 additional test locations within the demolished building footprints to a minimum of 0.5 metres into natural soils (which are identified on Drawing 2).

The RAP considered that the site can be made suitable with respect to the asbestos contamination by either removing asbestos impacted fill from the site; or management on site through placement of a capping layer and the preparation of a Long-Term Environment Management Plan to prevent future inadvertent exposure of the asbestos contamination to site users; or a combination of the two. All three options may be considered suitable depending on the nature of the development in different areas of the site. However, as a construction plan has not yet been prepared, the remediation options

will need to be revised after additional investigations have been completed and cut and fill levels at the site confirmed.

The EPA notes the existence of data gaps and the requirements for further site assessment identified in both the DSI and RAP to better inform site remediation approaches. It is noted that the RAP requires an Unexpected Finds Protocol (UFP) to be included as part of a Construction Environmental Management Plan (CEMP). **The EPA recommends that the consent include a condition requiring preparation and implementation of a UFP** so that it is not overlooked in the broad sweep of requirements for a CEMP.

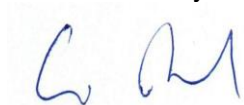
The EPA recommends early engagement of an EPA-accredited Site Auditor to review the documents submitted to date and ensure that any work required in relation to soil or groundwater contamination is appropriately managed. As part of the Response to Submission, **it is recommended that the applicant submit Interim Audit Advice from the Site Auditor** which advises that the RAP is appropriate and the site can be made suitable for the proposed use subject to the implementation of the RAP.

The EPA recommends the following conditions:

1. The applicant must engage a NSW EPA-accredited Site Auditor throughout the duration of works to ensure that any work required in relation to soil or groundwater contamination is appropriately managed.
2. Prior to commencing remediation, the applicant must submit to the Certifying Authority, an Interim Audit Advice from the Site Auditor that advises that the site can be made suitable for the proposed use subject to the implementation of the Remedial Action Plan and that the Remedial Action Plan is appropriate. A copy must also be provided to the Planning Secretary.
3. The applicant must adhere to the management measures in the Remedial Action Plan as approved by the Site Auditor.
4. Any variations to the approved Remedial Action Plan must be approved in writing by the Site Auditor.
5. If work is to be completed in stages, the Site Auditor must confirm satisfactory completion of each stage by the issuance of Interim Audit Advice/s.
6. The applicant must obtain a Section A1 Site Audit Statement – or a Section A2 Site Audit Statement accompanied by an Environmental Management Plan – from the accredited Site Auditor and submit it to the consent authority prior to commencement of operation. The Site Audit Statement must certify the site is suitable for the proposed use.
7. Prior to operation, the applicant must obtain confirmation from the Certifying Authority in writing that the requirement of condition **(6)** has been met.

Should you require clarification of any of the above please contact Anna Timbrell on 9274 6345 or email anna.timbrell@epa.nsw.gov.au

Yours sincerely



GEORGE OREL
A/Unit Head – Regulatory Operations – Metropolitan North
Environment Protection Authority

APPENDIX A

Detailed comments on the Acoustic Assessment (NIA):

1. Receiver locations

Assessment locations do not appear to have been defined for the residential receivers in and around Blenheim Place. Assessment of these receivers should be provided. The NIA has not assessed noise impact to the adjacent school, Cumberland High School located to the south of the project area. **The EPA recommends that assessment of this receiver is provided.**

2. Noise monitoring

The monitoring locations at the northern boundary, Felton Road East (school) appear to have been located close to a wall and/or fence. Fact Sheet B1.1 of the NPfI states: *“Locate the microphone 1.2 to 1.5 metres above the ground and, where practicable, at least 3 metres from walls...”* **The EPA recommends that the assessment demonstrate that it was not practicable to move these items of monitoring equipment at least 3 metres from the fence or walls and/or a justification must also be provided that a location adjacent to a reflecting surface is representative of background noise level at the receivers.** Any adjustments or corrections made to the measurements to account for the reflecting surfaces must be detailed in full including a justification.

The monitoring location at Felton Road West (Residential Location) appears to be adjacent to an air conditioning unit. **The EPA recommends that in order for the monitoring to be considered valid, the assessment must demonstrate that the noise monitoring at this location was not adversely affected by extraneous noise such as unrepresentative mechanical plant noise.**

Table 3 of the NIA presents the measurement data processed to represent the day (15 hour) and night (9 hour) time periods and descriptors under the *NSW Road Noise Policy* (DECCW, 2011) (RNP). However, the criteria for school classrooms in Table 4 of the RNP is assessed over a 1 hour period. The roads that connect to the school also appear to be local roads, as defined by the RNP, which are also assessed over a 1 hour period. Appendix B of the RNP contains the monitoring procedure for the $L_{Aeq,1hour}$ used in the RNP criteria. **The EPA recommends that the $L_{Aeq,1hour}$ relevant for school classrooms and local roads is included in the NIA and that the NIA is updated accordingly to take this into account.**

3. SEARs requirement for quantitative operational assessment

Item 10 of the SEARs requires that the noise and vibration assessment: *“includes a quantitative assessment of the main sources of operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities.”* The NIA does not provide a quantitative assessment of operational noise from the school and also does not include assessment of some of the items listed in the SEARs. There is some qualitative commentary on possible sources and control measures in Chapter 6, however, this does not satisfy the SEARs requirement for a quantitative operational noise assessment.

Chapter 6 of the NIA states that indicative locations, types, and numbers are known and that there are indicative sound power levels available for similar types of installation. Therefore, it is not clear why a quantitative assessment has not been carried out, particularly when the SEARs require a quantitative assessment and many mechanical plant locations are adjacent to residential property boundaries. **The EPA recommends that a quantitative operational noise assessment is included in the NIA to satisfy the SEARs.**

4. Operational noise assessment

The NIA appears to have only considered operational noise from the new or additional items being added to the school as part of this SSD. However, Project Noise Trigger Levels (PNTLs) derived using the NPfl apply to the total noise emission from the premises. This means that the assessment must include the total noise (existing plus proposed) from all operational noise sources assessed using the NPfl.

The school should not be separated into different stages, sources, or sections to be assessed separately or individually. The total noise level from all relevant operational noise sources at the school must be assessed at the receivers. This includes any modifying factors as defined in the NPfl Fact Sheet C, for example, intermittent operation of mechanical plant during the night period.

The operational noise assessment must also address appropriate times of use for noise sources, for example, Chapter 3.14 of the EIS states that the school including outside of school hours care operates between 7 am and 6.30 pm. Therefore, the assessment needs to cover the times when operational noise sources will be in use. For example, if out of school care starts at 7 am, staff arriving at the car park and mechanical plant would likely be operation prior to 7 am, and therefore the night period needs to be assessed. **The EPA recommends that the NIA is revised to meet the requirements of the NPfl and assess the total (existing plus proposed) operational noise sources at the school in all relevant time periods.**

5. Staff Car Park Assessment

There are a number of issues with the assessment of the staff car park, as follows:

- a) The predicted noise levels in Table 28 appear too low given the inputs listed in Chapter 6.2.4. The EPA's indicative calculations were more than 43 dBA at the nearest receiver (assumed 20 metres away) for 8 cars travelling for 25 seconds with a sound power level of 80 dBA each in the car park and assuming a 5 dB reduction from the 1300 mm wall. **The EPA recommends that the calculations are reviewed and updated accordingly. The NIA must include as a minimum: the calculation method, the noise reduction assumptions and/or barrier calculations for the 1300 mm concrete wall for receivers when vehicles are both close to and furthest away from the wall, the assumed height of source and receiver (considering two storey residences), the method used to calculate the time taken for cars to travel and manoeuvre, and all attenuation factors and their justification which were used to determine at the predicted level at the receivers.**
- b) There is no justification in NIA to evenly divide the number of cars in one hour by 4 to get vehicle movements in 15 minutes. The assessment should consider a reasonable worst-case scenario and provide justification for the assumptions. **The EPA recommends that the assumptions for the number of vehicles entering the car park in 15 minutes are reviewed, justified, and amended accordingly.**
- c) Note 3 to NIA Table 28 states: *"Table 4.1 of the NSW EPA NPI 2017 suggests a noise level exceedance of <2 dBA would be considered negligible and would not warrant receiver-based treatments or controls."* However, Section 4 of the NPfl states that *"Residual noise impacts are identified after all source and pathway feasible and reasonable noise mitigation measures have been considered."* There is no evidence in the NIA that all reasonable and feasible mitigation measures have been investigated or implemented for the staff car park. **The EPA recommends that all reasonable and feasible mitigation measures are investigated and implemented into the calculations prior to assessing residual impacts and are reported in the NIA.**
- d) References for the vehicle noise data in NIA Tables 25 and 26 are not provided in the NIA. Chapter 6.2.1 of the NIA states they were *"obtained from previous project experience."* The NIA needs to substantiate the relevance of the data used and should include where these data were

sourced from such as measurements or a reference source, and detail what the conditions they were taken under and/or what source they were measuring. The NIA should also include an explanation of how it represents a car parking, manoeuvring and so forth to be representative of the source it has modelled. **The EPA recommends that the noise data used for the car park is reviewed, referenced, and justified.**

- e) Operations at the school occur between 7 am and 6.30 pm according to Chapter 3.14 of the EIS. It would be expected that staff starting at 7 am would arrive prior to 7 am. Therefore, an assessment of reasonable worst car park impacts during the day, evening and night is warranted. **The EPA recommends that the car park assessment is reviewed and amended accordingly in consideration of the operational times of the school.**
- f) The exceedance of the PNTL at the nearest receivers indicates that the noise calculations for the car park are susceptible to small changes that could have significant impacts, for example, if the assumptions regarding the number of cars are not representative of the reasonable worst case, the exceedance would be larger. The new car park is proposed on the boundary with a two-storey residential property. Therefore, it is critical that any potential impacts and appropriate and suitable mitigation measures are identified at this stage to avoid potentially costly rectification work later.

6. Loading Dock and Waste Removal Assessment

There is no quantitative assessment of loading dock and/or waste removal in the NIA. This was a requirement of the SEARs and the EPA recommends that it is included in the NIA.

7. School Public Address System

The public address (PA) system has not been assessed quantitatively. As it forms part of the operational noise from the school, the SEARs require a quantitative assessment. Chapter 6.4 of the NIA states *"Noise levels at surrounding residents should not exceed the RBL + 10dBA criteria established above."* However, it is not clear which section of the report this refers to, nor what the descriptor or time period for assessment is. In any case, the EPA is the Appropriate Regulatory Authority (ARA) for public schools projects and the EPA recommends that the school PA system is assessed and managed according to the NPfI. This means it must form part of the assessment for the total operational noise level from the premises. Where noise levels cannot meet the PNTLs, all reasonable and feasible mitigation must be investigated and implemented and reported in the NIA. Where final locations or selections of equipment are not available, a concept level assessment can be undertaken. **The EPA recommends that the school PA system is assessed quantitatively using the NPfI as part of the school's operational noise assessment.**

8. External noise intrusion assessment

Chapter 5.1 of the NIA states that the façade acoustic treatments are based on *"external levels from surrounding as discussed in section 3.1."* Section 3.1 describes the unattended noise monitoring undertaken both during and outside of school operation. However, the *NSW Educational Facilities Standards and Guidelines* require consideration of external school activity. This would include both the noise generated by the school as well as the adjacent high school. It is not clear in the NIA if these noise sources have been considered in setting the façade performances and if these noise sources have been appropriately measured or quantified. **The EPA recommends that these noise sources are described, quantified, and considered in the setting of the façade performance. The NIA should be amended accordingly in consideration of this.**

Chapters 5.1.2 and 5.1.3 do not specify the design acoustic performance of the systems proposed, only an example construction. **The EPA recommends that recommended design acoustic performance for all glazing, façade and roofing systems should be included in the NIA.**

9. Operational road traffic noise assessment

Chapter 6.2.3 of the NIA has used a statement from the traffic consultant as a basis for a qualitative assessment that there will be no additional impacts on the public roads as a result of the proposal. However, whilst it appears from the NIA that there may be no net increase in traffic volumes to and from the school, there is a new staff car park proposed at the end of Felton Road West. This would indicate that as a minimum there could be more vehicles travelling on Felton Road West resulting from the proposal. **The EPA recommends** that the report revises the operational road traffic noise assessment to adequately address the potential for changes in vehicle traffic and noise impacts, particularly where there are specific elements of proposal which may influence traffic volumes.

10. Construction noise assessment

Tables 33-37 of the NIA refer to an “*internal noise management level*” however, the ICNG sets external noise management levels for residential receivers. **The EPA recommends that this statement is clarified, and the assessment updated accordingly.**

Table 33, 34, 35, 36, 37 and 38 present predictions above the highly noise affected level of $L_{eq,15min}$ 75 dBA, in some cases by more than 10 dB. Column 7 of NIA Tables 38, 39 and 40 states that “*Works indicatively predicted to have the potential to exceed the BG + 10dBA however below the Highly Noise Affected Level.*” However, columns 4 and 5 of Table 38, 39 and 40 predicts noise levels in some cases to be more than $L_{eq,15min}$ 75 dBA for several items of plant and construction phases, in some cases by more than 5 dB. For example, noise levels are predicted to above the highly noise affected level for all construction stages except structure works for Receiver 8, however Table 40 does not identify these exceedances. **The EPA recommends that the assessment for these receivers are reviewed and amended accordingly.**

The construction noise assessment has not assessed the potential noise impacts at Cumberland High School. **The EPA recommends that the NIA includes a construction assessment and mitigation for Cumberland High School.**

The total duration of the construction, and duration of each stage has not been included. The EPA recommends that this information is included in the NIA.

Chapter 3.13 of the EIS states that some construction trucks will arrive at 5 am. The NIA has not provided any mention of this construction activity. **The EPA recommends that if out of hours construction works are applied for, a strong justification must be provided in addition to assessment and mitigation of the proposed activities in accordance with the ICNG.**

11. Construction noise and vibration mitigation

Table 43 of the NIA provides a list of management measures to be implemented depending on how much the construction noise level is above the noise management level. There does not appear to be any basis for this allocation of mitigation measures, and it is not consistent with the ICNG. The ICNG requires that all reasonable and feasible mitigation measures are applied to minimise construction noise levels as far as possible, particularly where noise management levels are exceeded.

The use of Table 43 implies that, for example, project notification would not occur before noise levels are more than 3 dB above the noise management level. However, Table 2 of the ICNG states that “*the proponent should inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and durations as well as contact details.*”

Furthermore, the use of alternative construction methodology is only proposed when noise levels are at least 4 dB above the noise management levels. In the hierarchy of mitigation, treating the

source is the first priority and therefore consideration of alternative construction methods should be considered wherever noise impacts are above the noise management levels.

The noise level above the noise management level is one consideration in assigning reasonable and feasible mitigation. Other factors include community attitudes and preferences, duration, time of day and the characteristics of the noise being generated. The EPA does not support the use or inclusion of Table 43 for allocation of mitigation measures in the NIA. Furthermore, the report does not provide any information on whether the measures can be implemented and their potential to reduce noise impacts at residences and the adjacent High School.

The EPA recommends that the construction noise mitigation and management measures are revised to be consistent with the ICNG.

12. Construction traffic noise assessment

The NIA presents a qualitative assessment of construction traffic noise. However, the information contained in the NIA is insufficient for the EPA to understand the risk of impacts.

Chapter 7.3 of the Construction Management Plan (Appendix 26) states that site access will be via Felton Road West for the duration of the works. Felton Road West is a local road, which would be assessed over a one hour period under the RNP. An indicative calculation for ten trucks an hour travelling at 50km/h with a sound power level of 110 dBA each, assuming dense graded asphalt (DGA) pavement and no gradient could result in a noise level at a residential facade around 18 metres from the road which is greater than $L_{Aeq,1hour}$ 55 dBA.

In this case, the proponent would need to show that it is not increasing noise levels by more than 2 dB compared with the existing road traffic noise level. Where noise levels increase more than 2 dB above the existing road traffic noise level as a result of additional vehicles generated by the construction work, all reasonable and feasible mitigation measures are to be investigated, implemented and reported in the NIA.

Chapter 3.13 of the EIS also says that some construction trucks will arrive at 5 am. This has not been addressed in the NIA.

The EPA recommends that the construction road traffic noise assessment is revised and updated accordingly to appropriately identify the potential for impacts, including the appropriate time period and, if required, mitigation measures.