NSW EPA

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SSD 7709

Ms Karen Harragon
Director Social and Other Infrastructure Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Harragon

Re: Notice of Exhibition - Moorebank Precinct West - Stage 2 (SSD 7709)

I refer to your letter dated 24 October 2016 inviting the NSW Environment Protection Authority (EPA) to review the Environmental Impact Statement (EIS) for the above proposal.

Please note that Liverpool City Council is the Appropriate Regulatory Authority for this project under the *Protection of the Environment Operations Act 1997.* The EPA has agreed to assist council by providing comments and recommendations in relation to the key environmental issues of noise and vibration, and air quality.

The EPA has reviewed the EIS for the Moorebank Precinct West - Stage 2 (SSD16-7709) dated October 2016 in relation to these key environmental issues. The EPA's comments and recommendations are attached to this letter (Attachment A).

The EPA has also assessed the contamination status addressed in the EIS. It is noted that the work will be completed in accordance with all relevant management and action plans for the site to minimise the risk to the environment or to human health. The EPA recommends the proponent engage an EPA accredited site auditor to approve the remediation works and other activities during the proposed construction works which may pose environmental or human health risks. An EPA accredited site auditor will also assess the suitability of the land for the intended use.

If you wish to discuss any of the issues raised in this letter, please contact Rashad Danoun on 9995 6370.

Yours sincerely

Sarah Thomson 25/11/16

SARAH THOMSON
Unit Head Metropolitan Infrastructure

Encl. Attachment A – The EPA's recommendations regarding the EIS for the Moorebank Precinct West - Stage 2 (SSD16-7709) dated October 2016 in relation to the key environmental issues of noise and vibration and air quality.

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Attachment A

EPA recommendations regarding the Environmental Impact Statement for the Moorebank Precinct West - Stage 2 (SSD16-7709) dated October 2016 in relation to the key environmental issues of noise and vibration, and air quality.

NOISE AND VIBRATION ASSESSMENT

The EPA has reviewed the Noise and Vibration Impact Statement (NVIS) for the Moorebank Precinct West Intermodal - Stage 2 of the Environmental Impact Statement (SSD16-7709) dated October 2016.

Construction Noise

On-site crushing and concrete batch plant

Before approving the project, the Department of Planning and Environment should require the proponent to justify why on-site crushing and concrete batch plant are desirable in this case.
The project includes using crushing plant and one or more concrete batch plant. These appear to be proposed so that concrete products can be produced on-site rather than bought from another supplier. Based on the assessment, the batch plant will run for at least three years.

Use of construction noise criteria for temporary batch plants when concrete is locally available may lead to perverse outcomes where louder temporary plants are preferred over established operational plants. Before approving this proposal, the Department of Planning and Environment should require the proponent to explain why on-site crushing and concrete batch plant are desirable in this case. For example:

- Are there materials which should be recycled on-site, to avoid unnecessary transport impacts?
- Are suitable products not available, so they need to be produced on-site?

Any potential benefits of on-site recycling and reductions to transport volumes need to be balanced against increased impacts caused by on-site processing during the construction phase, including noise.

Out of hours construction works

Before approving the project, the Department of Planning and Environment should require the proponent to justify why out of hours construction works are necessary (for reasons other than convenience).

The assessment proposed, without justification, out of hours works including material delivery and direct placement or stockpiling:

- between 6am and 7am on weekdays
- between 6pm and 10pm on weekdays
- between 7am and 8am Saturdays
- between 1pm and 6pm Saturdays.

The Interim Construction Noise Guideline suggests that out of hours work should only occur with strong justification. Out of hours works should only be allowed if further justification is provided and for reasons other than convenience, for example if it is unsafe to do certain work during standard hours.

The proponent should check that out of hours noise management levels are based on rating background levels measured at appropriate times.

Noise management levels for standard hours and out of hours works seem to have all been based on the daytime rating background levels. They should be checked to make sure the daytime rating background level is consistent with each of the rating background levels for standard hours, and for the out of standard hours of 6am to 7am weekdays, 7am to 8am Saturdays, 6pm-10pm weekdays and 1pm to 6pm Saturdays.

Construction noise and management plan

The assessment predicted that construction noise from the project would exceed standard hours noise management levels by about 1 dBA in Casula. The assessment stated that a construction noise and vibration management plan would be developed, and that commitment should be adopted in any approval for the project.

Operational noise

Best practice plant should be used to minimise noise levels from the site, including electric automated container handling equipment or equipment with equivalent sound power levels. This will avoid unnecessary noise constraints on future projects.

Diesel reach stackers are proposed. Condition E1 of approval SSD 5066 requires development applications to consider best practice plant including electronic automated container handling equipment or equipment with equivalent sound power levels.

The *Best Practices Review: Noise* stated that full electrification of container handling equipment could significantly reduce noise emissions, but "since proposal operations can comply with noise criteria, the use of hybrid or electric container handling equipment is not considered necessary". However, the assessment predicted project specific noise levels would not be met at receivers in Casula during adverse weather.

As advised for the site's concept proposal, best practice plant should be used to minimise noise levels, including electric automated container handling equipment or equipment with equivalent sound power levels. This will minimise noise impacts and avoid unnecessary constraints on future projects. It is generally easier to implement quieter technologies from the start of a project.

Locomotives and best practice technologies

Before granting project approval, the Department of Planning and Environment should require the proponent to detail how the expected locomotives incorporate available best practice technologies.

The assessment stated that port shuttle trains will "typically comprise one 81 Class locomotive and 38 wagons", and that interstate freight trains accessing the site will typically include four 81 Class locomotives. The 81 Class has operated in NSW since 1982, representing technology that is more than 30 years old. Significant advancements have occurred over that time with potential for significantly lower noise emissions, including gensets, hybrids, "last mile" diesel, and idle reduction technologies.

The assessment, and the best practices review, did not detail any best practice technologies used in the 81 Class. Condition E3 of SSD 5066 requires development applications to "detail how the expected port shuttle locomotives incorporate available best practice technologies.

Rail noise levels

The expected increase in rail noise due to the project should be quantified using rail noise levels measured or predicted at the same point as used to predict the rail noise level for the project, using the same parameter.

The assessment used the $L_{Aeq(24hour)}$ 48.4 dBA rail noise level predicted for year 2020 at 77 Leacocks Lane, Casula, in the *Southern Sydney Freight Line Operational Noise and Vibration Management Plan* (Appendix B of the Operational Environmental Management Plan), to suggest that the project's rail movements would increase $L_{Aeq(period)}$ rail noise levels by less than 2 dB at Lot 21 Leacocks Lane, the closest receiver in the area.

The assessment relied on some optimistic assumptions:

- The assessment stated that existing rail noise levels at Lot 21 Leacocks Lane were 3 to 5 dBA above those at 77 Leacocks Lane, because Lot 21 Leacocks Lane had direct line of sight to the Southern Sydney Freight Line and 77 Leacocks Lane does not. The 3 to 5 dBA appears to be a subjective estimate rather than being based on modelling.
- Rail noise levels in the area will not change significantly between now and 2020.

- The $L_{Aeq(24hour)}$ predicted in the Southern Sydney Freight Line plan is equivalent to the $L_{Aeq(night)}$ predicted in the assessment.

The expected increase in rail noise due to the project should be quantified using rail noise levels measured or predicted at the same point as used to predict the rail noise level for the project, using the same parameter. The method used to estimate rail noise increase in the assessment was highly subjective and reliant on assumptions which were not adequately explained.

Potential sleep disturbance

Further detail should be provided on sleep disturbance impacts from the project, as it is likely to increase the number of events above L_{max} 65 dBA (55 dBA indoors).

Predicted L_{Amax} rail noise levels were between 7 and 14 dBA above the screening criteria at the three receiver catchment areas modelled (Casula, Glenfield and Wattle Grove). Casula was the only suburb where the 95th percentile L_{Amax} was predicted to be above 65 dBA (up to 67 dBA), indicating that one out of six expected rail movements in the night time could contribute an L_{Amax} event above 65 dBA (roughly equal to 55 dBA inside a habitable room).

The assessment relied on research summarised in the *NSW Road Noise Policy* to conclude that freight rail movements associated with the project, in the absence of wheel squeal, were unlikely to awaken people from sleep or affect health and wellbeing significantly. It also noted:

- existing movements on the Southern Sydney Freight Line and Main South Line were likely to contribute L_{Amax} events above 65 dBA
- L_{Amax} noise levels from the project were "unlikely to cause a noticeable change to the existing acoustic environment".

But the project is likely to increase the number of L_{Amax} events above 65 dB outdoors (55 dB indoors) at the nearest sensitive receiver in Casula, increasing the chance of sleep disturbance.

As suggested by the application notes for the industrial noise policy, further detail should be provided on maximum noise level events during the night time. For example, by comparing the number of events per night above L_{Amax} 65 dB outdoors with the project and without the project.

Operational noise model

The proponent should explain the locomotive sound power levels used in the operational noise model:

- An idling locomotive was given a sound power level of 100 dBA or 110 dBZ. This suggests a sound pressure level at 15 metres of 76 dBA which complies with EPA locomotive noise limits.
- A locomotive moving at 10 km/h was given a sound power level of 106 dBA or 142 dBZ. At 15 metres this suggests a sound pressure level of 84 dBA or 118 dBZ, complying with EPA A-weighted locomotive noise limit but much higher than the Z-weighted noise limit (95 dBZ).
- The assessment stated that network modelling assumed 81 class locomotives were used, but did not explain the assumptions used for on-site locomotive sources. The ETTT Alliance high noise locomotive paper showed that recent performance of 81 class locomotives is variable, with sound pressure levels at 15 metres up to 99 dBA and 103 dBZ.

The proponent should also explain what curve gain was applied to rail noise predictions for the project, and assess the impact of curve noise (wheel squeal and flanging) and brake squeal from interstate trains.

The assessment stated that because of relatively low train speeds (average 35 to limit 60 km/h), no corrections were applied to noise at turnouts and crossovers. But it is not clear whether any curve gain was applied.

The assessment suggested that best practice rolling stock was required by the draft conditions of approval for Moorebank Precinct West stage 1, so wheel squeal and flanging were unlikely to occur and noise from rolling stock would be lower than existing rolling stock in NSW.

The draft conditions for Moorebank Precinct East stage 1, and final conditions for the Moorebank Precinct West concept, only require "best practice" rolling stock on port shuttles. This means that

trains accessing the site from interstate may generate more curve noise which should be assessed, including assessing the "extent of wheel [and brake] squeal across the fleet of rail vehicles that will frequently use" the project (Condition E2 of approval SSD 5066).

Detailed design needs

Building and barrier layouts, and operational efficiencies, should be optimised during detailed design, so that operational noise from the project meets, or is lower than, the project specific noise levels. This should be outlined in a revised noise impact assessment following detailed design.

The assessment predicted that operational noise from the site may be up to 1 dBA above the project specific noise level during adverse weather. It said that "exceedances of up to 1 dB are considered negligible", but that options such as changing warehouse layouts would achieve noise reductions and be investigated during detailed design. It also stated that the proposed noise wall and operational efficiencies could be optimised during detailed design.

It is unclear why the project was not optimised for this assessment, but the assessment indicates the project can be designed to meet, or do better than, the project specific noise levels. The project should be designed to meet, or better, the project specific noise levels, and a revised noise impact assessment should be provided following detailed design, including specific commitments and expected noise levels at receiver locations.

Detailed design of the project should also minimise the need for reversing on the site.

The assessment stated that using horns and tonal reversing alarms would be strongly discouraged, and the restrictions detailed in the Operational Noise Management Plan. Because road trucks will access the site, tonal alarms will be used at times by road trucks on the site. In addition to the suggestions in the assessment, the EPA suggests detailed design should minimise the need for reversing at the site.

Cumulative noise impacts

The proponent should predict the maximum $L_{eq(15min)}$ operational noise contribution expected from the combination of the project and Moorebank Precinct East.

The assessment acknowledged that sensitive receivers would see both Moorebank projects as the one facility, and compared their combined contribution to the amenity criteria at sensitive receiver locations. If the projects are likely to be viewed as one facility, the proponent should also predict the maximum intrusive contribution of the two projects in combination.

AIR QUALITY ASSESSMENT

The EPA has reviewed the Air Quality Impact Assessment (AQIA) prepared for the Moorebank Precinct West Intermodal - Stage 2 of the Environmental Impact Statement (SSD16-7709) dated October 2016.

The EPA considers that the assessment has been conducted in general accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. The assessment predicts:

- Exceedance of the annual average $PM_{2.5}$ National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM) standard of 8 $\mu g/m^3$ on a cumulative basis. However it is noted that the background air quality data adopted is above 8 $\mu g/m^3$ and the maximum predicted incremental impact at sensitive receptors is < 1 $\mu g/m^3$ for the operational scenario assessed.
- No exceedances of impact assessment criteria contained in the Approved Methods for all other pollutants assessed.

The EPA considers that the outcomes are plausible however there are some issues, which must be addressed to confirm the assessment outcomes and inform robust planning decisions.

Inconsistency in tabulated emission inventory

Section 5.3 of the AQIA outlines the development of the emissions inventory. Table 5-9 provides a summary of the annual emissions for the proposal in tonnes/annum. There appears to be an inconsistency between units in the summary table and the previous tables (Table 5-3, Table 5-5, Table

5-6, and Table 5-8) which report emissions in kg/annum. The emissions inventory should be reviewed and confirmed. Any implications on the assessment outcomes should also be verified.

Best Management Practice

a) Principles of the Best Management Practice review

Appendix 7 of the AQIA provides the Best Practice Management (BMP) review report. This report identifies the guiding principles of prevention and minimisation of air pollution under the *Protection of the Environment Operations (POEO) Act* to inform the best practice review. However the BMP report also highlights consideration to the dispersion modelling conducted for the proposal as a guiding principle for informing Best Management Practice. The EPA considers that best management practice should be informed by the principles of the POEO Act with consideration to practicability. Additionally the EPA notes that:

- there is no safe threshold for fine particulate matter;
- the World Health Organization International Agency for Research on Cancer has classified diesel engine exhaust as carcinogenic to humans; and
- background $PM_{2.5}$ exceeds the annual average concentration contained in the *National Environment Protection (Ambient Air Quality) Measure*.

Based on these heads of consideration the quantitative (dispersion modelling) impact assessment should not be a primary basis for which to consider the measures to be implemented for the project.

b) Commitment to measures identified for implementation

Table 6-1 of the BMP report identifies upgrading the proposed existing locomotive fleet to best achievable Tier at next overhaul as reasonable / feasible. The BMP report states that "*upgrades will be as per scheduled upgrade program on existing fleet and will consider best achievable emission performance in accordance with requirements under proposed Changes to the POEO (Clean Air) Regulations.*" The BMP report also comments that an accelerated upgrade program for existing fleet for future development stages would be considered.
There is currently no locomotive standards within the Clean Air Regulation. The EPA advises:

- a clear commitment to an upgrade program to minimise air emissions should be provided and not deferred to a later development stage;
- upgrading existing fleets to achieve US Tier 0+ emission limits (as a minimum) for particles is readily achievable; and
- new locomotives that meet the US Tier 3 emission standards are readily available.

Table 6-1 of the BMP report identifies electrification for locomotive shifting as reasonable/feasible and to be implemented. However the BMP report comments that this measure will "*be considered during procurement having regard to technical, logistical and financial considerations*". The BMP report also identifies that this measure was adopted for the MPE Stage 1 site. The EPA considers there is a lack of clarity to the commitment for adopting this measure which has been identified as reasonable and feasible. Identical comments on the consideration of ultra-low-emitting switch locos can also be made.

Table 6-1 of the BMP report identifies best practice international emission standards for container handling equipment and comments that new container handling would be selected to have engines that comply with US EPA Tier 3 / Euro Stage IIIA. It is not clear if the proposal will be utilising new equipment and hence would be adopting these emission standards or if existing equipment is proposed. Additionally the EPA notes that the AQIA is based on the purchase of new equipment with engines that comply with US EPA Tier 3 / Euro Stage IIIA emission standards. Based on this information all container handling equipment should meet these specifications as minimum. The BMP report should also provide further discussion and evaluation of Tier 4 emission standards.

c) Identified reasonable and feasible measures not proposed for implementation

Table 6-1 of the BMP report identifies electrification of container handling equipment as a reasonable and feasible measure, however it is not proposed to be implemented. The BMP report states that it is

not viable for throughput less than 500,000 twenty four equivalent unit (TEU). The EPA understands that an electrical gantry crane system for container handling was to be implemented over time for the SIMTA Intermodal Terminal Facility – Stage 1 (now referred to as Moorebank Precinct East), with an annual throughput of 250,000 TEU. Further clarity on why this identified reasonable and feasible measure is not proposed to be implemented is required.

Table 6-1 of the BMP report identifies alternative fuels/technology for container handling equipment as feasible and reasonable but is not proposed for implementation. The BMP report states that is not considered reasonable for the proposal, based on risk based approach. Presumably the risk based approach is referring to the quantitative dispersion modelling prepared for the proposal. As advised above the quantitative modelling should not form the primary basis for not implementing reasonable and feasible mitigation measures.

d) Basis for not considering measures for implementation

The BMP report states there are measures that are not considered reasonable / feasible and are not proposed for implementation. The review states that some measures are not considered reasonable or feasible based on a risk based approach. Presumably the risk based approach is referring to the quantitative modelling prepared for the proposal. As advised above, the quantitative modelling should not form the primary basis for not implementing reasonable and feasible mitigation measures. Measures such as retrofit of exhaust after treatment (including for locomotives) have been identified as not reasonable and feasible based on the risk based approach.

Summary

The EPA advises:

- There are some inconsistencies with the units tabulated within the emissions inventory. On this basis the emissions inventory, dispersion model results and conclusions are not able to be confirmed. The emissions inventory should be checked, confirmed and the assessment revised where required;
- It is unclear if the impact assessment is based on the adoption of best management practice as there are identified issues with the BMP report. The Air Assessment must be based on the identified BMP measures that are proposed to be implemented;
- There are identified issues with the BMP review and commitments are not adequate and are incomplete. Specifically:
    - Lack of commitments to measures identified as reasonable and feasible for implementation;
    - Reasonable and feasible measures are identified that are not proposed for implementation;
    - The AQIA has been utilised to justify not adopting Best Management Practice.

Recommendations

The EPA recommends that the DP&E request the proponent to:

1. Address all the issues raised in the assessment above.
2. Provide a revised Best Management Practice report that addresses issues raised in the assessment above.
3. Provide clear commitment to implement specific best practice emission control and management measures.
4. Provide a revised AQIA that is based on the specific emission control and mitigation measures.

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