DOC19/1097837

19 December 2019

Ms Belinda Scott
Transport Assessments
Department of Planning, Industry and Environment
GPO Box 39,
Sydney NSW 2001

Dear Ms Scott

Sydney Gateway Road Project (SSI 9737)
Advice on the Environmental Impact Statement (EIS)

I am writing to you in reply to the invitation to the Environment Protection Authority (EPA) to provide advice on the Environmental Impact Statement (EIS), including recommendations for Conditions of Approval, for the above proposal.

The EPA understands that the project involves construction of a new high capacity road connecting the Sydney motorway network at the St Peters Interchange with the Sydney Kingsford Smith Airport comprising 6.6 km of road to be constructed or upgraded.

The EPA has reviewed the EIS provided by the Department of Planning, Industry and Environment (DPIE) and offers advice with regards to noise and vibration, water quality, air quality and contaminated land in the Attachment A to this letter.

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

Yours sincerely

19/12/2019

GISELLE HOWARD
Regional Director Metropolitan
Environment Protection Authority

Phone 131 555
Phone 02 9995 5555
(from outside NSW)

Fax 02 9995 6900
TTY 133 677, then
ask for 131 155

PO Box 668
PARRAMATTA
NSW 2124

Level 13
10 Valentine Avenue
PARRAMATTA NSW
2150 AUSTRALIA

info@epa.nsw.gov.au
www.epa.nsw.gov.au
ABN 43 692 285 758

ATTACHMENT A: EPA COMMENT ON EIS FOR SYDNEY GATEWAY ROAD PROJECT (SSI 9737)

1. Noise and Vibration

The EPA reviewed the *Technical Working Paper (TWP) 2 Noise and Vibration*, prepared by SLR Consulting, (dated November 2019) for the proposal and considers that further information and clarification is required to determine the potential impact of the proposal.

The noise report presents impacts from the construction and operation of the proposed roads. The introduction of new roads and viaducts will increase noise levels at receivers adjacent to and on some adjoining roads as the proposal generates more traffic on them. A total of 246 receiver buildings are eligible for mitigation, which is a relatively large impact for a project primarily surrounded by industrial land uses. It also shows that noise emissions from the airport ground based operations would increase in some areas as a result of the building demolitions required to build the roads.

The key issues that require further information and clarification are as follows:

- The items included in the noise modelling, including structures and adjacent roads that contribute to the overall noise level at receivers.
- The selection and justification for determining reasonable and feasible operational road traffic noise mitigation
- Construction noise and vibration assessment and mitigation.

Detailed comments are presented below.

<u>Noise monitoring</u>

a) Weather data in noise monitoring graphs appears to show that there were predominately calm winds during the monitoring period. However, reviewing the Sydney Airport Weather Station data for the period appears to indicate that some days, shown as calm in the monitoring graphs, had elevated wind speeds recorded at the station. **The proponent is requested to clarify the weather data used to process the noise monitoring data and amend the report accordingly.**
b) The noise report did not provide a model validation point representative of receivers on Baxter Road. There are some receivers identified as eligible for treatment in this area, and the project is predicted to adversely impact noise levels at receivers as a result of generating additional traffic movements on Joyce Drive. Whilst some receivers on Baxter Road may be beyond the end of the geometric limit of the proposed changes, they have been assessed and represent the most affected sensitive receivers to the south of the project. **The proponent is requested to provide a justification for not validating the noise model in the Baxter Road area.**

<u>Ground based airport noise</u>

a) The EPA notes that the removal of several buildings on Commonwealth land may increase the noise from airport operations at sensitive receivers. The impacts are caused by activities on a Commonwealth regulated airport and therefore Airservices Australia should manage the potential impacts from increases in noise due to this change.
b) The EPA notes that the application of the *Noise Policy for Industry* (NPfI) (EPA, 2017) in the noise report does not follow the procedures for deriving Project Noise Trigger Levels (PNTL). The PNTL is the lower of the amenity and intrusiveness level and the policy does not allow cherry picking of one or the other. The duration correction is intended for unusual or one-off events. Engine run ups are not unusual or one-offs as they are part of normal maintenance activities. The proponent should consider if the NPfI is the appropriate guideline to apply in this case.

Operational noise assessment

a) The operational noise assessment identifies receivers in NCA01 for consideration of at-property mitigation. These receivers are north of the Princes Highway and currently exposed to road traffic noise from the Princes Highway and other roads in the area. The noise report states that the reason for the predicted impact is because of their elevation relative to the Gateway link to the M5 interchange. However, it is not clear if all relevant factors in this area have been considered, as follows:
    a. The maps within the noise assessment appear to show the area adjacent to Hungry Jacks at St Peters has no structures or other buildings on it. However, the premises at 396 Princes Highway, St Peters has a number of structures and buildings on it which may provide some acoustic shielding that do not appear to have been considered in the noise model. Given that there are a number of triggered receivers in this area on George, Yelverton, Frederick and Sutherland Streets, **the noise model should be reviewed to ensure that it does contain all relevant structures.**
    b. It is not clear why Unwins Bridge Road has not been included in the noise model. Unwins Bridge Road is a sub-arterial road and could contribute to noise levels at receivers between Unwins Bridge Road and the Princes Highway. It is acknowledged that the road itself is more than 600 metres from the proposal, however noise from this road has the potential to impact receivers within the assessment area and therefore contribute to the total noise level. **The proponent should either include Unwins Bridge Road in the assessment or provide a justification why it should not be included.**

Operational noise mitigation

a) The barrier options NW01a and NW01b in Table 57 should be revisited following consideration of the inclusion of all appropriate structures and Unwins Bridge Road in the noise modelling.
b) Table 57 states: *"Many of the triggered receivers in this area are also only marginally over the criteria (around 1 to 2 dB), which is within the accuracy limitation of noise modelling."* It is not clear what is meant by this sentence and what justification it provides for not implementing mitigation. Accuracy limitations mean that noise levels could be higher or lower than the model output, therefore it is not appropriate to use model accuracy limitations in this way as a justification for not applying mitigation.
c) The report justifies not implementing a noise barrier at NW03 to protect noise-sensitive receivers on the south side of Baxter Road because it would require removal of billboards which would impact the billboard owners. **The proponent should clarify the justification for not considering a noise barrier for Baxter Road and provide a detailed evaluation of other feasible and reasonable mitigation measures.**
d) The Botany Rail Duplication EIS (SSI 9714) identified the need for a 3 metre noise barrier to protect receivers on Baxter Road from the impact of rail noise from this project. This barrier could also help mitigate noise from road traffic noise arising from the Sydney Gateway Project. **The benefits of noise mitigation for receivers affected by both projects in this area should be considered when determining reasonable and feasible mitigation.**

Presentation of results

a) The predicted noise levels presented in Appendix E of the Noise and Vibration report do not include details for all residential receivers; the change in noise level; the property façade which may be eligible for consideration of architectural noise treatment; the noise levels with and without mitigation; nor the noise contribution from significant non-project roads such as the Princes Highway. The RMS *Noise Mitigation Guideline* (April 2015) requires the consideration of a number of factors pertinent to this assessment and should be presented in the report. **The EPA requests that this information is included in the assessment.**
b) The maps in Chapters 6, 7 and 8 that present impacts at receivers are small and low resolution which makes it difficult to identify impacts on specific receivers. **The proponent should provide maps which show detailed information in a reasonable size, scale and quality.**

Construction noise and vibration assessment

a) **The noise report should provide an assessment of, and management options for potential vibration impacts due to dynamic compaction.**
b) The proponent should engage with particularly sensitive receivers, such as the Qantas Flight Training Centre to determine appropriate limits for human comfort vibration and to determine particularly sensitive time periods and other areas of concern.
c) The construction assessment states that the majority of the work would occur during standard working hours. The EPA supports this approach and recommends that work outside of standard hours is minimised wherever possible and only takes place where appropriately justified.
d) Table 35 has classified noise predictions compared to Noise Management Levels (NML) identified in the *Interim Construction Noise Guideline* (ICNG) (DECC, 2009). It uses terms such as 'marginal' and 'minor' subjective response to describe a noise level up to 20 dB above the Rating Background Level (RBL). Such a categorisation of subjective response is not appropriate as it does not take into account factors such as the duration or time period in which it occurs. Categorising predicted noise levels in such a manner is potentially misleading and is not consistent with the management actions identified in the ICNG when NMLs are predicted to be exceeded.
e) The use of the terms 'marginal' and 'minor' implies that if a noise level is marginally above the NML then it may not require management. Table 53 repeats that 'minor' impacts would be experienced by receivers in Mascot. However, as stated previously, characterising noise levels up to 10 dB above the NMLs as marginal or minor is not considered appropriate and may lead to reduced effort in providing mitigation. The NMLs are the level at which additional mitigation should be considered for implementation, however noise levels should be minimised where ever possible, including when levels are below the NMLs. **The assessment should be amended accordingly.**
f) **Construction noise and vibration assessments before and during construction should focus on strategies and methods to manage and mitigate the predicted impacts, including community engagement.**
g) The EPA recommends that the proponent assess if the mitigation is reasonable based on the consecutive (and concurrent) infrastructure project impacts, for example at-property treatment may be more likely considered reasonable with consecutive infrastructure projects rather than with a standalone project. Consideration should also be given to other infrastructure projects, other developments, and utility adjustments that may occur consecutively or concurrently to the project.

2. Water Quality

The Sydney Gateway Project site is located within the Botany Bay catchment and would predominately drain to Alexandra Canal, with the eastern part of the site draining to Mill Stream. Under the proposal, intercepted groundwater, and potentially also contaminated runoff, would be collected, treated and discharged to waterways. It should be noted that in this area of the Botany Sands Aquifer the groundwater can be high volume and pressure, and this needs to factored into any water balances and calculations. The project will intersect the former Tempe Landfill, with leachate discharged to sewer. No construction stage stormwater discharges are proposed.

The key identified issue is that **the impact of wastewater discharge is not adequately assessed**. The EIS does not provide the information required to consider matters under section 45 of the *Protection of the Environment Operations Act 1997* (POEO Act). The EIS proposes that intercepted groundwater, and potentially contaminated runoff, would be collected, treated and discharged to waterways. The groundwater components can be very high volume, including when combined with potential wet weather conditions. The EIS proposes discharge criteria but does not provide details of wastewater management, characterise the expected discharge quality, or adequately assess the potential impact of those discharges on the environmental values of the receiving waterway.

Detailed comments are presented below.

Construction stage wastewater management

Under section 45, the EPA must consider a range of matters when exercising licensing functions, including:

- the pollution caused or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment;
- the practical measures that could be taken to prevent, control, abate or mitigate that pollution, and to protect the environment from harm as a result of that pollution;
- in relation to an activity or work that causes, is likely to cause or has caused water pollution:
    - the environmental values of water affected by the activity or work;
    - the practical measures that could be taken to restore or maintain those environmental values.

The EIS does not provide the information required to consider these matters. The EIS proposes that intercepted groundwater, and potentially contaminated runoff, would be collected and treated prior to discharge to waterways. The EIS proposes discharge criteria, but does not:

- provide details of the practical measures that could be taken to minimise pollution (e.g. mitigation of groundwater ingress, treatment of groundwater and contaminated runoff); or
- adequately assess the potential impact of wastewater discharges on the environmental values of the receiving waterway.

The EIS proposes adopting the 80% species protection or site-specific guideline values based on the 80th percentile of ambient concentrations as discharge criteria. The EPA advises that the 80% species protection guideline values are generally not applicable and the proposed site-specific guideline values are not appropriate as they have not been derived based on data from appropriate reference sites, representative of slightly to moderately disturbed condition. The correct assessment criteria should be used as a basis for considering all reasonable and feasible wastewater management options.

The policy in NSW is that the level of protection applied to most waterways is the one suggested for 'slightly to moderately disturbed' ecosystems. For most toxicants this is the 95% protection level (99% for toxicants that bioaccumulate). **For highly disturbed systems, the emphasis should be on improvement of the waterway and not maintenance of a degraded condition**. If site-specific guideline values are used to assess potential impacts, they should be derived consistent with the national *Water Quality Guidelines*, including being based on 24 months of data from an appropriate reference site/s, representative of the target ecosystem condition.

The EPA recommends that, consistent with the environmental assessment requirements, the proponent should assess the impact of discharges. This assessment should:

a) identify and estimate the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point;
b) describe the nature and degree of impact that any discharge(s) may have on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment;
c) assess the potential impact of discharges on the environmental values of the receiving waterway, including average or typical through to worst-case scenarios, with reference to the relevant guideline values consistent with the national Water Quality Guideline;
d) where a mixing zone is required, demonstrate how the national Water Quality Guideline criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge;
e) demonstrate how the proposal will be designed and operated to:
    i protect the Water Quality Objectives for receiving waters where they are currently being achieved;
    ii contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved; and

f) demonstrate that all feasible and reasonable measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented.

Construction stage stormwater management

The EIS does not propose construction stage stormwater discharges, but states that the contractor would make the final decision at the design stage. If construction stage stormwater discharges are proposed, a discharge impact assessment consistent with the water pollution risk will be required to inform consideration of matters under section 45 of the POEO Act.

3. Contaminated Lands

The EPA reviewed Chapter 13 of the EIS main report and two technical papers; *TWP 5 Contamination and Soils*, prepared by WSP and GHD (dated 18.10.19) and *TWP 16 Former Tempe Landfill Assessment*, prepared by Property NSW (dated August 2019).

The areas of concern were identified as five distinct assessment areas with separate conceptual site models requiring special management, including potential remediation. These are:

1) Former Tempe Landfill
2) Alexandra Canal
3) Sydney Airport northern lands car park (Commonwealth land)
4) Land north of the rail corridor (Commonwealth land)
5) Sydney Airport land along Alexandra Canal and Qantas Drive (Commonwealth land)

Two of these areas, Tempe Tip and Alexandra Canal, are declared as significantly contaminated land under the *Contaminated Land Management Act 1997* (noting that the other three are on Commonwealth land and outside the remit of the EPA.)

Both technical papers reviewed identified the potential risks to human health and environmental receptors which included PFAS, vapours (and landfill gas issues pertinent to Tempe Tip). The key potential impacts associated with the project revolve around the potential to mobilise contaminants and affect nearby soils, surface water and groundwater, either via leachate, overland flow or subsurface flow of water and vapour with the potential to further impact receiving environments including Alexandra Canal and the surrounding receivers.

It is noted that interaction with potentially contaminated groundwater is vulnerable due to the shallow depth of the Botany Sands aquifer. There is also the potential to expose acid sulfate soils that could lead to the potential mobilisation of heavy metals, such as aluminium and iron into water bodies. There is significant risk of exposure to contaminants by site works, visitors and the local community.

The EPA notes that the project has been designed to minimise disturbance of the Alexandra Canal bed sediments with structural supports and foundations associated with bridge crossings located outside the canal walls. A management plan would be developed and implemented to manage work within the Alexandra Canal to prevent the disturbance of potential contaminated sediments.

Where existing remediation systems are in place (Tempe Landfill and Sydney Airport's northern lands car park) the controls and protocols outlined in the existing environmental management plans would be implemented. Remediation action plans would be prepared to include detailed descriptions of any new structures required to manage existing contamination – such as emplacement mounds at Tempe Landfill.

Due to the presence of a range of contaminants, the following project-specific conditions are recommended as conditions of approval

1. The proponent must prepare a Construction Management Plan which aims to manage the landfill gas and leachate in the Tempe Landfill (landfill cap, cut-off wall and leachate management

system). This must be developed in accordance with the objective of the existing Voluntary Remediation Proposal.

2. The proponent must prepare a remediation action plan, in the event that the current leachate management system is breached.

3. The proponent must prepare Environmental Management Plans (EMP) that will document the requirements for ongoing monitoring and maintenance of the reinstated systems as well as any new structures constructed to manage existing contamination.

4. All reports, management plans and remediation action plans are to be prepared by a consultant certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

5. The proponent must engage an EPA accredited Site Auditor to prepare a Section A Site Audit Statement that confirms that the land has been made suitable for the proposed use.

6. The proponent must ensure that the implementation of the RAP(s) would be validated by a suitably qualified environmental consultant, who would document the validation in a validation report. The validation report must be reviewed by a site auditor.

7. The proponent must adhere to the management measures (if any) accepted by the Auditor in the Section B Site Audit Statement.

8. The processes outlined in *State Environmental Planning Policy 55 - Remediation of Land* (SEPP55) be followed in order to assess the suitability of the land and any remediation required in relation to the proposed use.

9. The proponent must ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site that would result in significant contamination [note that this would render the applicant the 'person responsible' for the contamination under section 6(2) of the *Contaminated Land Management Act 1997*].

10. The EPA is to be notified under section 60 of the *Contaminated Land Management Act 1997* for any contamination identified which meets the triggers in the Guidelines for the Duty to Report Contamination (www.epa.nsw.gov.au/resources/clm/150164-report-land-contamination-guidelines.pdf)

4. Air Quality

The EPA reviewed *Technical Working Paper 17 Odour Assessment*, prepared by WSP and GHD (dated 08.11.19) and referred to *Technical Working Paper 16 Former Tempe Landfill Assessment*, prepared by Property NSW (dated August 2019) in its consideration of odour impacts from excavation of the former Tempe Landfill site.

In summary, the EPA recommends that prior to issuing conditions of approval, the proponent must revise the odour assessment and include the following information:

a) verification of assumed odour emission rates;
b) assessment of potential leachate odour emissions; and
c) a detailed odour and leachate management plan that includes proactive and reactive management strategies, including contingency measures for all sources.

Detailed comments and recommendations are presented below.

Odour impacts

The EPA notes that odour impacts were modelled from the identified odour sources of exposed waste on the working cut, covered waste areas and from disturbance and handling of waste. The worst-case scenario of the total cut area (105,600 sqm) being the working cut area is predicted to cause odour impact above the 2 odour units (OU) criteria at nearby residential and commercial receptors. A scenario of the actual proposed construction having a working cut area of 34,200 sqm results in only one predicted exceedance above 2 OU at the Tempe Wetlands receptor (2.1 OU).

The odour impacts were modelled using odour emission rates measured from putrescible landfills in NSW (GHD in-house database) and are potentially conservative given the bore log sampling conducted for the Tempe landfill showed non-putrescible waste at 14 of the 18 bore logs and mixed non-putrescible and putrescible at depth of the other four bore logs.

The EPA recommends the specifications of the odour measurements from the in-house database be provided to assess the validity of the odour modelling.

Odour assessment does not include leachate

The odour assessment does not include leachate as a potential odour source. The Former Tempe Landfill Assessment has stated that the former landfill is declared as a remediation site due to findings that leachate generated by buried waste was migrating from the landfill towards Alexandra Canal. The landfill assessment also states the removal of the capping layer is expected to lead to additional leachate generation during construction.

The EPA recommends the odour assessment must be revised to consider the potential for odour from leachate, including reasonable odour emission rates measured from landfill leachate and justification of base case and worst-case modelling scenarios.

Maximum limits of working cut area

The odour impacts in the odour assessment are not based on direct odour measurements at the site. The odour assessments states that odour sampling will be conducted of waste that will be exposed to verify odour emission rates assumed in the odour assessment and odour modelling will be revised to guide detailed construction planning and mitigation measures.

The EPA recommends that construction maximum working area and mitigation strategies be developed to minimise odour emissions from the site.

Odour management and mitigation measures proposed

Specific mitigation measures for all odour sources, including excavation of landfill cells and leachate management have not been detailed in the assessment. Additionally, details of available and feasible contingency measures have not been provided. Identification of these control and management measures is important to ensure the risk of adverse odour impacts can be adequately managed.

Proposed odour management actions and mitigation measures (Tables 6.2 and 6.3) in the Odour Assessment include daily review of weather conditions at the Sydney Airport Bureau of Meteorology station, undertake field odour surveys at downwind receptors, identify which work area onsite is the main source of odour if odour is detected during field survey and reduce the scale of exposed waste in identified construction area. Field odour surveys are proposed to be undertaken during the first and last hour of construction, when wind speeds drop below 3 m/s and when a validated odour complaint is received.

The EPA recommends the proponent develop and provide an odour and leachate management plan that is proactive and reactive, describes how they will manage odour from

all potential odour sources (including but not limited to leachate), how they will manage and mitigate odour during adverse conditions such as leachate following potential heavy rains.