



Your reference: SSI-5414
Our reference: DOC12/45360
Contact: Sarah Deards 9995 6816

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Dear Ms Sarkies

EPA advice – North West Rail Link – Public Exhibition Stage 2 EIS (SSI-5414)

I refer to your letter dated 30 October 2012 inviting the NSW Environment Protection Authority (EPA) to make a written submission regarding the North West Rail Link Stage 2: Stations, Rail Infrastructure and Systems.

The EPA has reviewed the EIS and provided comments and recommendations in relation to the conditions of approval for the key issues of noise and vibration; groundwater and surface water; and cumulative impacts, as well as non-key issues of spoil management; and air quality (Attachment 1).

The EPA would appreciate a copy of the submissions received by the Department of Planning and Infrastructure in relation to the exhibition of the EIS and to have the opportunity to comment on the draft conditions of approval for the project, if approval is recommended by the Department.

If you wish to discuss any of the issues raised in this letter, please contact Sarah Deards on 9995 6816.

Yours sincerely

G Howard 3/12/12

GISELLE HOWARD
Director Metropolitan
Environment Protection Authority

Attachment 1: The EPA's comments regarding the North West Rail Link Stage 2 EIS

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The comments below are based on a review of the EIS against the Director General's Requirements (DGRs) for the project, which comprise:

- Transitioned Staged State Significant Infrastructure (SSI) Approval (Concept Plan Approval dated 6 May 2008);
- Statement of Commitments (in the Supplementary Submissions Report dated March 2008); and
- Supplementary Environmental Assessment Requirements (EARs) for the SSI application (dated 29 August 2012).

Noise and Vibration

Construction noise

Tunnel support sites – construction hours

In the EPA's letter to the Department of Planning and Infrastructure (DP&I) regarding the adequacy of the EIS for public exhibition, the EPA raised concerns regarding noise impacts at tunnel support sites. The EIS indicates that works at tunnel support sites will need to take place 24 hours a day, seven days a week. The locations where these activities will occur have not been clearly stated in the construction noise assessment in Chapter 10 of the EIS. The Construction Noise Management Levels (NMLs) for individual sites are provided for day, evening and night periods, however the predicted NML exceedances for each site do not indicate whether exceedances are predicted during day, evening or night periods. The EPA considers that this issue should be addressed in the Submissions Report to enable the community to understand any local cumulative noise impacts and the development of appropriate conditions of approval (CoA).

Construction Noise Management Plan

The EPA recommends the following requirements to be incorporated into a CoA requiring preparation of a Construction Noise Management Plan (CNMP):

- (a) identification of each work area, site compound and access route (both private and public)
- (b) identification of the specific activities that will be carried out and associated noise sources at the premises and access routes,
- (c) identification of all potentially affected sensitive receivers,
- (d) the construction noise and vibration objectives identified in accordance with the *Interim Construction Noise Guideline* and *Assessing Vibration: a technical guideline*,
- (e) assessment of potential noise and vibration from the proposed construction methods (including noise from construction traffic) against the objectives identified in (d),
- (f) where the objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise impacts,
- (g) description of management methods and procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during construction, including the early erection of operational noise control barriers,
- (h) procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity,
- (i) measures to monitor noise performance and respond to complaints.

Traffic Noise Assessment

The EIS states that a detailed assessment of potential traffic noise impacts and mitigation measures would be undertaken during the detailed design stage. The EPA recommends that this be included as a CoA.

Traffic Noise Management Study

The EPA recommends the following CoA regarding traffic noise management:

A Traffic Noise Management Strategy (TNMS) shall be developed by the proponent, prior to commencement of construction and operational activities, to ensure that feasible and reasonable noise

management strategies for vehicle movements associated with the facility are identified and applied, that include but are not necessarily limited to the following;

- driver training to ensure that noisy practices such as the use of compression engine brakes are not unnecessarily used near sensitive receivers,
- best noise practice in the selection and maintenance of vehicle fleets,
- movement scheduling where practicable to reduce impacts during sensitive times of the day,
- communication and management strategies for non licensee/proponent owned and operated vehicles to ensure the provision of the TNMS are implemented,
- a system of audited management practices that identifies non conformances, initiates and monitors corrective and preventative action (including disciplinary action for breaches of noise minimisation procedures) and assesses the implementation and improvement of the TNMS,
- specific procedures for drivers to minimise impacts at identified sensitive receivers,
- clauses in conditions of employment, or in contracts, of drivers that require adherence to the noise minimisation procedures and facilitate effective implementation of the disciplinary actions for breaches of the procedures.

Highly noise affected receivers - construction

The EPA notes that predicted noise levels during construction exceed the 'highly noise affected' levels within the *Interim Construction Noise Guideline*. The EPA recommends a CoA requiring that appropriate mitigation measures must be implemented to reduce noise impacts to these highly affected receivers, including respite periods.

Additional sensitive receivers – construction and operation

The EPA has identified two sensitive receivers that are likely to be impacted by construction and operation of the NWRL that have not been included in the EIS. These receivers are located at the corner of Carlingford Road and Beecroft Road (down side of existing line) and 'The Oxford' corner of Oxford Street and Cambridge Street (up side of existing line). The EPA considers that any future compliance monitoring and the Operational Noise and Vibration Review should ensure that these sensitive receivers are included in the assessment.

Construction vibration

The EPA recommends that CoA E19(b) of the Stage 1 Approval also be applied to this approval. In addition, the EPA recommends a CoA requiring that where vibration values exceed the acceptable vibration dose values in the *Assessing Vibration: a technical guideline*, feasible and reasonable mitigation measures must be considered. Where measures cannot be implemented to reduce vibration levels to below the maximum vibration dose values, the proponent should negotiate with the community, in accordance with *Assessing Vibration: A technical guideline*.

Operational noise

Viaduct structure radiated noise

The EIS states that designing the viaduct structure to minimise structure-radiated noise may be a suitable mitigation measure to minimise operational noise impacts on the community. The EPA considers that the design of the viaduct structure is critical in reducing noise impacts on the surrounding community and recommends a CoA requiring the final viaduct design to incorporate appropriate methods and materials that will reduce radiated noise from the structure.

Operational noise mitigation

The EPA notes that the EIS identifies a number of reasonable and feasible noise mitigation measures during construction and operation of the NWRL, but does not contain any commitment to specific measures. The EPA therefore recommends a CoA requiring the proponent to apply reasonable and feasible mitigation measures that will result in noise mitigation of a standard equivalent or better than measures recommended in the EIS.

PA systems

The EPA notes that the EIS states that PA systems at stations will be designed in order to meet the requirements of the Industrial Noise Policy, however the EPA recommends a CoA requiring PA systems to be designed and installed in accordance with best practice for PA systems in order to minimise impacts to surrounding sensitive receivers while achieving its operational objectives.

Train stabling yard operational noise

In order to minimise noise impacts on residents surrounding the train stabling yard during operation of the NWRL, the EPA recommends a CoA requiring that noise from maintenance activities conducted in the stabling yards (e.g. wheel machining) shall not exceed a level of the rating background level (RBL) +5dBA.

Operational noise and vibration goals

The EPA recommends a CoA requiring the proponent to design and operate the rail line components with the objective of not exceeding the airborne and ground-borne noise trigger levels at existing developments, at each stage of the project, as presented in the *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* (DEC and DoP, 2007). This must include investigating and applying reasonable and feasible mitigation measures where required.

For the purpose of this CoA, existing development includes all existing development (built and approved) adjacent to the rail corridor, and development (including subdivisions) approved prior to the determination of this project.

Operational Noise and Vibration Review

The EPA recommends the following CoA:

(1) The proponent shall prepare an Operational Noise and Vibration Review (ONVR) to confirm noise (air and ground-borne) and vibration control measures that would be implemented for the project. The ONVR shall, as a minimum:

- (a) identify the appropriate operational noise and vibration objectives and levels for adjoining development, including existing sensitive receivers;
- (b) predict the operational noise and vibration impacts at adjoining development based on the final design of the project;
- (c) examine all feasible and reasonable noise and vibration mitigation measures;
- (d) identify specific physical and other mitigation measures for controlling noise and vibration at the source and at the receiver (if relevant) including location, type and timing for the erection of permanent noise barriers and/or other noise mitigation measures;
- (e) include a consultation strategy to seek feedback from directly affected property owners (including educational institutions) on the noise and vibration mitigation measures; and
- (f) include procedures for operational noise and vibration complaints management, including investigation and monitoring (subject to complainant agreement).

(2) Operational noise targets shall be reviewed within 5 years of the date of any approval of the ONVR and at any subsequent time as required. The review shall have regard to the status of land use planning, any land use changes and the background noise environment within areas adjacent to the fixed facilities at the time of the relevant review. Any proposed changes to the noise targets as a result of the review shall be included in a revised ONVR.

(3) The ONVR is to be independently verified by a noise and vibration expert. The verification must be undertaken at the proponent's expense. The ONVR and independent review is to be submitted for approval prior to commencement of the construction of physical noise mitigation structures, unless otherwise agreed.

(4) The proponent shall implement the identified noise and vibration control measures and make the ONVR publicly available.

Operational Noise and Vibration Compliance Assessment

The EPA recommends the following CoA:

The proponent shall undertake a noise and vibration compliance assessment to confirm the predictions of the noise assessment referred to in the ONVR. This shall be undertaken within three months of the commencement of operation of the project, or as otherwise agreed. If the assessment indicates an exceedance of the noise and vibration targets identified in the ONVR, the proponent shall implement further reasonable and feasible measures (where required) to mitigate these exceedances in consultation with the affected property owners.

Fixed Facilities

The EPA recommends the following CoA:

(1) The proponent shall, prior to the lodgement of the ONVR, derive operational noise targets for fixed facilities (including substations and the train stabling facility) and associated activities and identify these noise targets in the ONVR.

(2) The proponent shall design and operate fixed facilities, including the substations and the train stabling facility with the objective of not exceeding the noise targets. The proponent shall apply mitigation at existing receivers where the noise targets cannot be achieved.

Noise compliance monitoring – fixed facilities

To determine compliance:

- a) with the $L_{eq(15 \text{ minute})}$ noise targets, the noise measurement equipment must be located:
 - approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
 - within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
 - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
- b) with the $L_{A1(1 \text{ minute})}$ noise targets, the noise measurement equipment must be located within 1 metre of a dwelling façade.
- c) with the noise targets, the noise measurement equipment must be located:
 - at the most affected point at a location where there is no dwelling at the location; or
 - at the most affected point within an area at a location prescribed by (a) or (b).

A non-compliance will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by (a) (b); and/or
- at a point other than the most affected point at a location.

For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Sensitive land uses

The EPA recommends the inclusion of CoA E11 from the Stage 1 Approval, with the amendment that the land use survey also include critical areas sensitive to *operational* noise and vibration, as well as construction noise and vibration.

Operational vibration

Operational vibration

The EPA recommends the following CoA:

The proponent shall design and operate the project with the objective, where feasible and reasonable, of not exceeding the vibration goals for human exposure for existing receivers, as presented in *Assessing Vibration: a technical guideline* (DECC 2006).

NWRL Stage 1 CoA recommended to apply to Stage 2

The EPA recommends that the following noise and vibration CoA from in the NWRL Stage 1 Approval should also be included in the approval for Stage 2:

- E12
- E14
- E15
- E16
- E18
- E19(b)
- E20
- E21
- E22
- E23
- E24
- E46(b)

Groundwater and surface water

Groundwater

Existing groundwater quality

Information regarding groundwater quality along the alignment and also at known or suspected areas of contamination is not adequate. The EPA therefore recommends a CoA requiring further delineation of groundwater quality in areas where groundwater quality is unknown or inconclusive prior to construction works beginning.

Operational water discharge volumes

The EPA is concerned that the proponent has not committed to construct the NWRL tunnels as undrained tunnels. The volume of groundwater generated within tunnels has the potential to have a significant impact on the surrounding environment throughout the life of the NWRL, and the EPA recommends that the CoA require that the tunnel construction methods ensure that groundwater inflows will be minimised as far as possible throughout the operation of the NWRL.

Sustainable reuse of tunnel inflow

The EPA recommends a CoA requiring that water of suitable quality be reused on site in preference to potable water. A condition similar to CoA E34 in the Stage 1 Approval would be appropriate.

Surface water

Operational water quality

The EIS states that the predicted water volumes during operation of the NWRL could be accommodated by the Lady Game Drive WTP as long as existing water quality standards can be maintained. No information is provided in the EIS regarding alternative options for disposal of water during operation of the NWRL, should these standards not be met. The EPA therefore recommends a CoA requiring that all water discharges during operation of the NWRL must comply with section 120 of the *Protection of the Environment Operations Act 1997*, or use of condition C6 from the Stage 1 Approval.

In order to ensure that the Lady Game Drive water treatment plant is capable of treating NWRL tunnel water to an appropriate standard, the EPA recommends a CoA requiring a commissioning water monitoring program during the initial period when the water treatment plant begins treating NWRL tunnel water.

Construction water quality

As identified in the EPA's submission regarding the adequacy of the EIS for public exhibition, the EIS does not contain adequate information regarding the treatment, discharge locations, volume and quality of groundwater to be discharged from the site during construction. The EPA considers that this information should be provided in the Submissions Report to enable an assessment of any possible impacts from water discharge during construction, and development of appropriate CoA's to manage any impacts.

The EPA recommends a CoA requiring that all water discharged from NWRL construction sites must comply with section 120 of the *Protection of the Environment Operations Act 1997*, unless otherwise approved through an Environment Protection Licence, or alternatively, use of CoA C6 from the Stage 1 Approval.

Water quality monitoring

The EPA recommends a CoA requiring water quality monitoring to be carried out, including similar requirements to those detailed in Condition C11 of the Stage 1 Approval.

NWRL Stage 1 CoA recommended to apply to Stage 2

The EPA recommends that the following CoA relating to surface water management from the Stage 1 Approval are also included in the CoA for Stage 2:

- E33
- E45
- E46(d)
- E47

Spoil management

In order to minimise unnecessary disposal of spoil that could be reused onsite or at alternative locations, the EPA recommends a CoA requiring reuse options at offsite locations to be investigated, prior to disposing of excess spoil material to landfill, in accordance with the waste hierarchy established under the *Waste and Resource Recovery Act 2001*.

Contaminated land and groundwater

The EPA recommends CoA similar to C15 and C16 in the Stage 1 Approval be included in the Stage 2 consent.

Air quality

In order to minimise air quality impacts during construction, the EPA recommends that CoA E1 and E46(g) from the Stage 1 Approval also apply to Stage 2.

Cumulative impacts

Internal cumulative impacts

As indicated in the letter from the EPA to DP&I regarding the adequacy of the EIS for public exhibition, the EPA considers that the cumulative impacts associated with noise and vibration from Stages 1 and 2 of the project have not been adequately addressed in the EIS, as required by the Supplementary EARs for the SSI Application. Table 20.3 of the EIS identifies a number of sensitive receivers where noise levels will exceed project NMLs during both Stage 1 and 2 construction works, and states that the cumulative impact would be experienced for a period of 4 to 5 years, depending on the location. The EPA considers that the

level of detail provided regarding internal cumulative noise impacts is not adequate and that the Submissions Report should include the predicted noise levels at each location, and the duration that these noise levels will be experienced (for example using a construction program diagram similar to that in Table 7-4).

External cumulative impacts

The EIS indicates that cumulative impacts associated with construction of the Epping to Thornleigh Third Track (ETTT) project are possible, but that the location of construction compounds for the project was not known during EIS preparation. In the recently exhibited ETTT EIS, a construction compound was shown to be located near the former bus flyover to the south of the M2, in close proximity to the NWRL Epping Services Facility. Given the high likelihood of cumulative noise impacts on residents in this area, the EPA recommends that the Submissions Report consider cumulative impacts from the NWRL and ETTT construction works in this location, and document any negotiations/ communications with the ETTT project team regarding minimising community impacts.

The EIS has identified a number of external projects that will occur concurrently with the NWRL construction works. The EPA recommends a CoA requiring the proponent to regularly consult with surrounding projects with the objective of minimising impacts to the local community during construction works, particularly regarding noise impacts.