



DOC20/788145

24 September 2020

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

Dear Ms Scott

**Inland Rail – North Star to NSW/Queensland Border (SSI 9371)  
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) for the above proposal.

The EPA understands that the project involves a new 30 kilometre rail line comprising 25 kilometres along an existing non-operational rail corridor, a 5 kilometre greenfield section towards the Queensland border, and a 1.8 kilometre crossing loop.

The EPA has reviewed relevant parts of the EIS provided by the Department of Planning, Industry and Environment (DPIE) and considers environmental risks in terms of air and water quality are considered manageable with appropriate mitigation measures. However, the EPA requires further clarification regarding noise and vibration matters. Comments on these specific areas are at **Appendix A**.

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

Yours sincerely

A handwritten signature in black ink, appearing to read 'Claire Miles'.

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# APPENDIX A

## 1. Noise and Vibration

The EPA has reviewed the *Construction Noise and Vibration Technical Report*, Rev 1, prepared by Future Freight (CNVIA) and the *Operational Railway Noise and Vibration Assessment*, Ver 0.1, dated March 2020, prepared by SLR (ONVIA) for the construction and operational noise impacts and seeks further information as follows:

### Sensitive receivers

Chapter 3.2 of the CNVIA sets out the noise sensitive receivers assessed., however, does not advise what type of receiver it is and on what type of land use. Contour maps in Appendices C and D of the CNVIA only present the location of the receivers. **The EPA requests clarification on the location and type of receivers is provided as a table to list the address and type of land-use (e.g. residential etc).**

Similarly, receivers in the vicinity of borrow sites, within or external to the defined Noise Catchment Areas (NCAs) have not been clearly defined in the assessment. **The EPA requests a description or identification of receivers potentially affected by the borrow sites, and associated access and haul roads is provided.**

It is also noted that noise catchment areas (NCAs) defined in Chapter 3.2 does not appear to include any area within Queensland. **The EPA requests clarification be provided on the potential impacts from noise generated in NSW in Queensland and how this may be addressed by the project.**

The study area for noise impacts is limited to 2 kilometres, however, it is not clear why this distance is the limit, nor whether there are receivers beyond this distance that may be impacted by the works. Background noise levels are typically low in this region and high noise generating activities have the potential to impact people at large distances. **The EPA requests the proponent justify the limits proposed and consider any impact on receivers beyond the 2 kilometre boundary.**

Chapter 7.1 of the ONVIA has used a receiver height of 2.4 metres above ground to represent the height for receivers, however, this is not stated in the CNVIA. Further, it is not clear if consistent assumptions have been used between the two assessments. **The EPA requests clarification regarding the receiver height used in the CNVIA.**

Inconsistent labelling between the two assessments makes it difficult to understand the extent of the impacts from both the construction and operational phases of the project. **The EPA requests that clarification of the receiver labelling between the CNVIA and ONVIA is provided.**

### Rating background levels

Chapter 3.3 of the CNVIA presents the measurement results from unattended noise monitoring that has been used to set Noise Management Levels (NMLs) in Chapter 4.1. NMLs for NCA 4 are based on noise monitoring location 4. Reviewing the measured noise levels in Appendix B, it appears that only 3 days were considered valid in the monitoring. However, it is not clear why other days which had similar noise levels were excluded and others not.

The measured rating background level (RBL) for the day period at location 4 was 32 dBA. The day period RBL was then set to 35 as this is the NPfI minimum for that period. The evening period RBL for location 4 was measured at 46 dBA, but was then set at 35 dBA using the justification that evening period RBL should not be set higher than the day period, despite the fact that the measured RBL at location 4 during the day is 32 dBA.

Noting the data gap for noise measurement during the evening period at location 4, the EPA considers that setting the evening level to the NPfI minimum for evening (30 dBA) is appropriate. **The EPA requests that noise management levels are revised in consideration of this revised level.**

#### Construction vibration measurements

Some of the background vibration measurements presented in Chapter 3.3.5 of the CNVIA appear unreasonably high. The report explains these higher than typical levels are due to “*vehicle movements, wind gusts and nearby fauna.*” It is not clear how wind gusts or fauna would affect valid vibration measurements, nor what purpose these measurements serve in the assessment. **The EPA requests clarification on the purpose of these background vibration measurements in the CNVIA and the validity of the results.**

#### Proposed construction working hours

Chapter 4.1.1 of the CNVIA states that noise generating works would be completed on a 7-day schedule from 6.30 am to 6 pm. Some of these hours are outside of the recommended standard working hours set out in the *Interim Construction Noise Guideline* (EPA, 2009) (ICNG). There is a misleading statement: “*negotiation with the Environment Protection Authority to undertake these works which have been agreed upon*”. The EPA has a consistent position that works outside of standard hours may only be undertaken where there is a clear justification in accordance with section 2.3 of the ICNG, where works would not impact receivers above the NMLs, or where there is a community agreement in place. Chapter 4.1.1 also states that community consultation has been undertaken to determine if the extended construction hours are acceptable to the community. However, the outcome of this consultation is not provided or referenced in the CNVIA. **The EPA requests the proponent to demonstrate that appropriate justification is provided for out of standard hours work.**

The third paragraph of Chapter 4.1.1 states “*construction noise levels are unlikely to be very intrusive.*” However, noise levels in Chapter 5 are predicted to be significantly above the NMLs and sleep disturbance criteria and as such does not appear to support this statement. **The EPA requests this statement be either removed or amended to reflect the predicted noise impacts presented in the CNVIA.**

#### Construction blasting criteria

SEARs Key Issue 14-3 states: *The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required.* However, the CNVIA proposes air-blast over-pressure and ground vibration objectives that are higher than levels recommended in the ANZEC Guidelines (referenced in SEARs) for human comfort and amenity for blasting activities. The EPA recognises that blasting over a short and defined period may have different impacts to longer term exposure. However, any relaxation of human comfort and amenity limits for blasting activities is contingent on identifying methods to reduce community reaction to blasting such as through negotiated agreements. Note that the EPA’s regulatory role does not include determinations of structural or cosmetic damage to structures caused by blasting or vibration. **The EPA suggests that the proponent demonstrate community engagement in relation to blasting impacts.**

#### Assessment of borrow sites

Chapter 5.5.1 of the CNVIA states the justification for assessing borrow sites using the ICNG as follows: “*The proposal is directly related to construction activities associated with the proposal and the works would be temporary and would take place over a defined term (rather than indefinitely).*” Use of the ICNG to assess borrow sites depends on a number of factors including how far the site is from the main construction alignment, whether an Environment Protection Licence (EPL) would be required to operate the site, what hours the borrow site would operate over, how long the site would be operational, and if there are practical measures to mitigate noise impacts, among others.

There is not enough information in the CNVIA to understand if assessment using the ICNG for each borrow site is appropriate. Additional information needs to be provided for each borrow site to determine whether application of the ICNG or the *Noise Policy for Industry* (EPA, 2017) (NPfI) is appropriate to assess and manage potential noise impacts. In addition, the CNVIA does not provide the location, or other information, regarding receivers potentially affected by the borrow sites, the layout and location of the borrow sites, access and internal haul routes, or proposed mitigation for borrow sites. The CNVIA has not adequately assess the potential for traffic noise impacts arising from the use of the borrow sites. There is insufficient information linking the roads in Table 5.10 to each borrow site, or which receivers might be affected by them. The EPA is unable to provide further comment until this information is provided. **The EPA requests that the range of factors (outlined above) regarding the borrow sites is provided as part of the Response to Submissions.**

#### Construction noise characteristics

Chapter 5 of the CNVIA presents predicted noise levels at receivers using conservative assumptions. However, the duration of construction noise exposure to receivers, including impacts from each construction scenario, has not been provided. **The EPA requests clarification on the expected duration of impacts from construction scenarios so that the community can understand how long they might be impacted, and to inform feasible and reasonable mitigation.**

The sound power level (SWL) used for trucks in Table 5.2 and elsewhere in the report appears low, and significantly lower than SWLs for trucks in Australian Standard (AS) 2436. **The EPA requests the proponent explain the SWL used for trucks in the CNVIA and make any subsequent amendments as required.**

Table 5.2 in the CNVIA includes a number of activities or items of equipment that are nominated in the ICNG as being particularly annoying. The ICNG requires a penalty of 5 dB to be added to the predicted levels when these are in use. However, it does appear that this has been applied in the CNVIA. **The EPA requests that the 5dB correction for equipment listed in the ICNG as particularly annoying be clarified and amended as required.**

Table 5.3 of the CNVIA presents the highest predicted noise level in any NCA. In some cases, noise levels are predicted above the NML and the Highly Noise Affected management level. Consideration of additional noise mitigation and management is required where noise levels exceed the Highly Noise Affected level. However, Chapter 7 regarding mitigation measures does not discuss additional mitigation to manage noise where there are predicted exceedances of the Highly Noise Affected management level. **The EPA requests clarification on the proposed mitigation measures be provided for NMLs above the Highly Noise Affected management level.**

The cumulative construction noise impact assessment in Chapter 5.9 has not considered the potential for additional impacts to occur as a result of consecutive works undertaken by ARTC as part of the Inland Rail program, nor any local area or utility works that may be required to support the project. **The EPA request that the cumulative impacts also consider consecutive works from the project.**

#### Construction camp assessment

Table 6.1 of the CNVIA presents the noise sources from mechanical plant associated with the construction camp. It is not clear why only one source has been modelled with frequency information. **The EPA requests that representative frequency information is used for other sources associated with the construction camp.**

Table 6.5 has identified three receivers where the predicted noise level exceeds the Project Noise Trigger Level (PNTL) by 1 dB. Residual impacts may only be assessed according to Section 4 of the NPfI after the application of all reasonable and feasible mitigation. However, the report states in several locations that no mitigation is applicable to the camp. This is inconsistent with the NPfI. **The**

**EPA requires that all reasonable and feasible noise mitigation measures should be applied to the camp prior to the assessment of residual impacts.**

The SEARs Key Issue 13-2 requires that the characteristics of noise emissions be considered in the assessment. In accordance with the requirements of the NPfI, **the EPA requests that assessment of the construction camp include an assessment of modifying factors according to Fact Sheet C of the NPfI.**

Table 6.6 presents predicted maximum noise levels ( $L_{max}$ ) from the construction camp. However, it appears that the reported  $L_{max}$  noise levels are below the  $L_{Aeq,15min}$  noise levels. It is not possible for a measured  $L_{max}$  to be below the  $L_{Aeq,T}$  level measured over the same period. The CNVIA appears to have only considered isolated instantaneous events, however, it is not a reasonable result for the equivalent of an average noise level to be above the maximum noise level over the same assessment period. **The EPA requests that the calculations are updated to consider appropriate  $L_{max}$  noise levels.**

### Construction noise mitigation

Key Issue 3 of the SEARs contains the following requirements:

- (d) demonstrate how potential impacts have been avoided (through design, or construction or operation methodologies);*
- (e) detail how likely impacts that have been avoided through design will be minimised, and the predicted effectiveness of these measures (against performance criteria where relevant);*
- and*
- (f) detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures.*

Its currently unclear how the CNVIA has addresses these requirements. **The EPA requests detailed clarification on how the CNVIA has satisfied this section of the SEARs.**

Table 7.1 presents 'standard' noise mitigation measures to be applied to the project. Most of the measures have been proposed in a post-approvals noise management plan and it is unclear what mitigation measures may be applied to the source, path or receiver. **The EPA requests that further information and clarification is provided for the potential noise mitigation measures available to reduce impacts at receivers, including administrative measures such as respite, engineering controls and community engagement.**

The ONVIA has identified some receivers are eligible for consideration of at property treatment. **The EPA strongly recommends these treatments be considered for implementation prior to construction works starting to provide a noise reduction benefit from construction in additional to operational noise.**

### Operational rail noise

Chapter 7.2 of the ONVIA states that the daily train numbers "*include the existing freight services.*" However, the North Star to Border line is classified as a new rail line. **The EPA requests clarification for what is meant by existing freight services.**

It is not clear which railway line is referred to by the "*adjacent main line*" in Chapter 8.2.1. The EPA understands that the nearest operational rail line to the Inland Rail proposal at receiver SLR ID 254096 is the Queensland Rail South Western System, which is located a long distance from this receiver, compared with the Inland Rail alignment. **The EPA requests the proponent state which railway line is referred to as being by the adjacent main line.**

Chapter 8.2.1 states that "*at SLR ID 264096, the predicted noise levels are 1 dBA above the noise criterion, with the train movements on the adjacent main line the primary source of railway noise.*" It appears that the ID contains a typo. **The EPA requests clarification on whether this ID is correctly referenced.**

Receivers on the southern side of the Macintyre River to the west of the alignment – approximately 1.25 kilometres from the alignment – do not appear to have been included in the operational rail assessment. However, they have been included in the CNVIA. **Whilst the noise contours in the ONVIA indicate that exceedance of the trigger levels is not likely, the EPA requests that noise levels from operational rail at these receivers within the study area are included, and clarification of impacts at these receivers is provided.**

#### Operational rail noise model validation

Appendix B of the ONVIA states that the location for validation measurements was generally 15 metres from the rail line. The reason for this is stated to be to “*limit the potential influence of local weather conditions.*” However, whilst this may provide a validation of noise source levels, it is unclear whether this is sufficient to validate the propagation of rail noise at distances where rail trigger levels may be exceeded. **The EPA requests that clarification or additional information be provided to show how the propagation for distances exceeding 15 metres – and at distances representative of where trigger levels may be exceeded – was validated for the chosen modelling methodology.**

#### Operational rail noise contours

Appendix D of the ONVIA shows the predicted extent of noise levels at the different criteria for both  $L_{Aeq,T}$  and  $L_{Amax}$ . During the day, the predicted  $L_{Aeq,15hr}$  60 dBA contour line is significantly closer to the rail line than the  $L_{Amax}$  80 dBA contour line. The EPA understands that the  $L_{Aeq,T}$  and  $L_{Amax}$  levels may be controlled by different noise sources – such as sources at 4 metres versus sources at the top of the rail – leading to a difference in how they propagate over distance. However, there is not a clear explanation in the report to describe how this has occurred. **The EPA requests clarification on the differences in propagation effects between  $L_{Amax}$  and  $L_{Aeq,T}$  levels and how they result in the contour maps provided in Appendix D.**

#### Operational rail ground vibration

Chapter 11.1 of the ONVIA states: “*Previous measurement and assessment of ground-borne vibration from existing rail freight corridors indicates that potential for ground-borne vibration impacts would be limited to sensitive receptors located within 100 m of the proposed rails.*” **The EPA request that references to support this statement are provided.**

#### Operational rail ground borne noise

The EPA considers that further investigation for the potential for ground borne noise at receiver SLR ID 254050 should be done during detailed design.

#### Operational rail mitigation

Consideration for mitigation of ground borne noise at the one identified receiver (SLR ID 254050) should be included in Chapter 14 of the ONVR as it has been identified as having the potential to exceed ground-borne noise trigger levels. Chapter 15 states that reducing internal noise levels by 5 dB would be a perceptible improvement to building occupants. However, in areas where receivers are not subject to existing operational rail noise, and at-property treatments are applied prior to the rail line being operational, treatments are unlikely to be perceived as improvements as there is unlikely to be a point of comparison. **The EPA requests that the recommended mitigation for receivers affected by ground borne noise is provided as part of the Response to Submissions.**

## **2. Air Quality**

The EPA has considered the *Air Quality Technical Report*, Rev 1, prepared by Future Freight (AQTR), and is satisfied that atmospheric dispersion modelling predicts that air quality pollutants would be below the air quality objectives at all nearest sensitive receivers. The EPA notes that the design has sited the 1,800 metre crossing loop away from sensitive receivers to avoid impacts from idling diesel emissions.

The EPA recommends the following:

- mitigation measures outlined in Table 9.2 of the AQTR be applied to construction of the project;
- an Air Quality Management Plan is developed as part of the Construction Environmental Management Plan (CEMP) to management dust emissions during construction; and
- monitoring be undertaken at appropriate intervals during construction and operation of the project to include: dust deposition monitoring during construction, and in response to nuisance complaints; and ambient air quality monitoring for particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) and oxides of nitrogen (NO<sub>x</sub>) utilising methodologies outlined in the appropriate Australian Standards.

## **3. Water Quality**

The EPA has considered the *Surface Water Quality Technical Report*, Rev 1, prepared by Future Freight (SWQTR) which has identified the key threats to water quality during construction and operation and recommended mitigation measures.

The EPA advises that any water that is captured on site will need to be treated to appropriate levels prior to discharge. It is noted that a substantial length of the track passes through areas of high salinity and that this would need to be considered as a factor in any discharge assessment for any EPL that applies to the works.

As stated in the SWQTR, a soil and water management plan and erosion and sediment control plan will be included as part of the CEMP to mitigate any potential impacts, including from saline soils. The EPA recommends this be included as conditions of approval, together with a water quality monitoring programme, and the mitigation measures proposed in Table 6.3 of the SWQTR are incorporated into the CEMP.