Inland Rail - Narrabri to North Star (Phase 2) Environmental Impact Statement

Submission to NSW Department of Planning and Environment

MOREE PLAINS SHIRE COUNCIL

V0.2

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1 Summary

The Moree Plains Shire Council (Council) appreciates the opportunity to provide a submission on the Narrabri to North Star (N2NS) Phase 2 project (Project) by Australian Rail Track Corporation (ARTC). This submission has been prepared by Element Environment in consultation with SMK Consultants, Dryside Engineering, Todoroski Air Sciences and SoundIN, on behalf of Council.

Each Chapter within the Environmental Impact Statement (EIS) has been carefully reviewed and considered. Council raises several concerns and recommendations for the Department of Planning and Environment's (DPE) consideration.

Council acknowledges the significance of the N2NS rail project for the region, and for the future sustainability and economic development of Australia's eastern seaboard inland rail network. Council is also a long standing and fervent supporter of the Inland Rail project and we look forward to the development of N2NS Phase 2. Notwithstanding, Council requests that all matters raised are suitably addressed by DPE in their assessment through the application of appropriate recommendations and conditions.

2 Key Issues

2.1 Consultation and potential acquisitions

Council requests that the project deal with impacted residents in an open, transparent and fair manner regarding acquisitions or other construction and operational impacts.

With regards to any proposed acquisition of land where houses reside, Council requests that consideration be given to reutilising housing, where possible and appropriate, to mitigate the acute housing challenge in the area. Council is also open to discussions regarding potential other affordable and noise insulated housing, such as build to rent housing, or any other innovative solutions to mitigate dual issues of housing scarcity and noise impacts for sensitive receivers.

With regards to farming land, Council requests that a similar approach in fairness and transparency continue, and consideration be given to farming operations during and after construction, as well as practicality of long-term use of any parcels of land impacted.

2.2 Land Use and Property

2.2.1 Landowner information on acquisition maps

Council recommends all figures included, showing lots affected by the project, in *Figure 9-4 Property impacts of the proposal – permanent acquisition and temporary occupation* be updated to accurately reflect the various landownerships, such as Crown Land, Crown Road and private land. This will assist in further determining property and access impacts of the project.

2.2.2 Consultation on travelling stock routes (TSRs)

Council acknowledges and commends the discussions on TSRs to date with a view to practical and safe outcomes for road users and livestock. Council welcomes the opportunity for further input and advice on the travelling stock routes in consultation with the Local Land Services (LLS) during the detailed design phase.

2.2.3 Irrigation channel – Camurra Bypass

The EIS details the proposed property acquisition needed to accommodate the realignment of the Camurra Bypass, including 50m of an irrigation channel.

Council requests that the project deal with impacted landholders in an open, transparent and timely manner, and that consideration be given to farm operations, including water works approvals and processes where relevant, so any farm operations impacts are minimised prior to project construction.

2.3 Biodiversity

2.3.1 Candidate species surveys

Table 10-4 Candidate species credit species returned for this proposal lists the credit species returned for this project and summarises the results of targeted surveys. It is noted that surveys were not undertaken for several species on the list, and that these species were expected to be surveyed in 2022.

Council recommends the Biodiversity Assessment be updated once all species have been surveyed and their presence/absence at the site is known.

2.4 Traffic and Transport

2.4.1 Unverified statements

Section 4.2.1.8 states the following:

> *"As discussed in Section 4.2.1, there is expected to be minimal increase in traffic on the road network as a result of the proposal. The increased delay at intersections and level crossings is expected to have a localised impact only. In particular, through movements on the Newell Highway are not likely to be affected.*
>
> *Overall, the proposal is expected to have a positive impact on the road network by relocating some of the road freight task to rail, thereby reducing the heavy vehicle freight traffic on the roads both within the study area and in the greater NSW network."*

The above conclusions do not reflect the impacts stated in the report.

The Traffic and Transport Impact Assessment (TTIA) identifies increase to traffic, reductions in intersection level of services and impacts to the road network. These impacts are not minimal in the local context. Traffic movements east-west along the Gwydir Highway at Alice Street / Moree Bypass intersection are significantly greater (+350%) than north-south along the Newell Highway. The increased wait time of 158 seconds, 11 times per day in 2027 and 17 times per day in 2039, will have a significant impact in a local context.

There is no information in this study that supports this summary (s4.2.1.8). The TTIA, in various sections of the report, clearly identifies that the project will have impacts during construction and operational phase on Moree traffic, intersection performance and the road network.

This statement should be updated to align with the findings of the impact assessment.

2.4.2 LX561 reported as being outside the study area

The TTIA states that the Alice Street / Moree Bypass and level crossing (LX561) are outside the study area. Alice Street / Moree Bypass and LX561 are contiguous to the study area and will be impacted by the project during construction and operational stages of Phase 2.

Council is of the view that Alice Street / Moree Bypass intersection and LX561 are part of the study/project area of Phase 2 and the reports should reflect this.

2.4.3 Emergency services

Alice Street / Moree Bypass is a critical intersection for responding emergency services crossing from West Moree to East Moree.

Council has been engaging with the Moree Local Emergency Management Committee (LEMC).

Council, alongside the Moree Local Emergency Management Committee (LEMC), is of the opinion that operational impacts of Inland Rail on emergency service access within the Moree township needs further consideration. There is the opportunity to provide emergency vehicle access for the Phase 2 project in the event of sustained severance or delays in accessing East Moree blocking both Alice Street and Bullus Drive level crossings.

Council recommends the following commitments to minimise impacts to emergency services from the proposed infrastructure:

- At a minimum, provision for alternative emergency services access south of the Mehi River, under the road and rail bridges (the Mehi River Underpass).
- Co-ordinate road traffic signals with train signals at Alice Street / Newell Highway intersection and LX561 to minimise severance and wait times.

- Develop a technological solution for signal communications between train movements and emergency services. The intention being to ensure emergency services are aware of the closure, or impending closure, of the level crossings during a response event. In the interim, this could include a system of communications between the actual level crossing signal points and emergency services. In the longer term a more integrated system is recommended.

- Implement an emergency protocol that enables emergency services to safely cross the rail line (east-west) when the Mehi River Underpass is unpassable.

2.4.4 Coordinated response and communication during operations

In *Table 11-9 Summary of mitigation measures* under *Section 11.5.3* of the EIS, it is noted that only one mitigation measure is proposed for the impact to emergency services once the project is operational. Mitigation T-11 states:

> *"A protocol between ARTC and emergency service providers would be developed to define appropriate and coordinated responses and communication in the event of an emergency during operations (e.g. access to real time information regarding crossing times and access to alternative crossing points)."*

Council and the LEMC welcome more discussions on how this could work operationally and what technological support could be explored, to make this a reality for emergency service agencies before rail operations under the Inland Rail project commence.

2.4.5 Assessment of impact to emergency response times

Consideration of the impacts of reduced intersection performance of Alice Street / Newell Highway in relation to emergency response services could have been further explored in the project's Environmental Impact Statement. With wait times of up to 158 seconds for each passing rail service, and daily rail services doubling in 2027 and tripling by 2039, the Moree Local Emergency Management Committee have raised there is likely to be impact to emergency services waiting at the Alice Street / Newell Highway intersection if no alternative emergency access is provided.

LEMC and Council have proposed the Mehi River bridge and Newell Highway road bridge underpass as an alternative access. See Appendix A for more information.

Council acknowledges the Moree Intermodal Overpass, once constructed, will be an alternative access point from West to East and vice versa when there is significant closure across all access in Moree township, such as a significant flood event as well as prolonged severance at Alice St and Bullus Drive (ie: the only two Level Crossings along the Inland Rail corridor within the town limits).

2.4.6 Alternate access route for emergency vehicles

To allow for an unobstructed access point to East Moree from Moree CBD in the event of rail breakdown or rail operations blocking access across the Bullus Drive and Alice St level crossings, it is requested that an underpass along the southern side of the Mehi River form part of the project (subject to appropriate investigations and consultation). This access would result in more efficient response timeframes than current routes and will improve the safety of the community in the event of simultaneous access issues at the Alice Street and Bullus Drive level crossings.

Council and LEMC understand that an alternate route for emergency services via an underpass would require various design considerations and construction works at both the Newell Highway and rail bridge to the south of the Mehi River, including but not limited to:

- Stormwater drainage works to mitigate water over the road;

- Allowing for a minimum road and rail bridge vertical clearance of 4.2 metres (TBC pending further consultation with appropriate key stakeholders) to allow safe access for emergency vehicles;
- Possible embankment design to futureproof the corridor for a two lane-two way access; and
- Flood mitigation measures to improve access in the area during minor flood events.

In the event of major flooding, the Mehi underpass may become inaccessible. Therefore, Council and LEMC are seeking confirmation from ARTC, whether operational measures that would limit train traffic or prioritise emergency access across level crossings during major flood events have been considered.

Council and LEMC welcome further discussion with ARTC's project team and DPE regarding the recommended alternate emergency access route and how the project can deliver safer outcomes for the community.

Other benefits of the proposed Mehi underpass route include improved passive surveillance and improved amenity of the river corridor. The proposed route would also improve passive surveillance of residential areas of East Moree and reduce likelihood of entrapment in the McElhone St (formerly River St) and Oak St areas near the river.

2.4.7 Level Crossings

Council requests that legal, fair and appropriate access is considered for impacted private landholders to access the Newell Highway from private property.

Council encourages ARTC to continue engaging with Transport for NSW and private landholders to define clear ownership of road intersections where private roads connect with the Newell Highway, to access the relevant private level crossings.

Discussions are encouraged around road requirements for turning and treatments from the Newell Highway across to access the Level Crossings and Eastern side of the Newell Highway, being mindful of the gradient between the elevated rail line and the highway edge.

Council is also mindful that raising of the railway line may also reduce queue widths between the highway and rail line in the case of a truck waiting for a 1.8 km train to pass. Raising of the rail line could therefore create a risk that a truck may queue onto the edge of the highway which is a significant traffic conflict issue.

Council requests these matters are dealt with during the detailed design phase.

2.4.8 Road network impacts and level crossings

Council encourages further consideration of road safety and vehicle types in regards to level crossings between the northern entry to Gwydirfield Road and the Gwydir River.

Level crossings LX3069, LX3070, LX3071 and LX563 have traditionally been utilised by a range of truck sizes, including road trains for haulage of wheat and other materials from farms to the east of the rail corridor.

Level crossings LX3069, LX3070 and LX3071 have been assessed for short stacking for a B-double (26m long). At present, the normal truck configuration for hauling of grain from a farm is a Type 1 road train (36.5m long). These are gradually being replaced by AB-triples for transport efficiency (44m long).

Each of these crossings are utilised for access to farming areas which support both stock and grain production. The traffic assessment does not consider the movement of farm equipment across the level crossing. Council would encourage consideration of potential length of equipment such as a tractor and cultivator in relation to short stacking while waiting for a train to pass. This is of concern in relation to the available distance between the Newell Highway and the rail corridor.

Road designs in relation to ramp approach may also need further consideration. Council welcomes continued engagement with relevant private landholders and Council during the detailed design phase of the project, to resolve these matters.

2.4.9 Operations clarification

The following statement is made in *Section 11.1.2 Operations*:

> *"ARTC have committed to ensure the Gwydir River rail bridge has sufficient clearance on the southern bank between the bridge abutment and the river for emergency vehicles to pass under the bridge."*

The reference to *"Gwydir River"* is incorrect. ARTC have committed to providing an alternative emergency access under the rail and road bridges of the Mehi River (Mehi Underpass).

Council recommends that the Mehi underpass commitment be included as an operational mitigation measure in Table 11-9 and a condition of approval.

On a related point, Council notes the current height clearance under the rail bridge on Gwydirfield Road is 3.7m. Council requests that this clearance be a minimum of 4.3m under the new bridge design to allow for safe movement of general and emergency vehicles.

2.5 Hydrology and Flooding

2.5.1 Model Build and Schematisation

The following review summarises the findings of the model build, schematisation, modelling methodology. It should be noted that this was a high-level review of the report, and not a review of the model and model files themselves which were not available at the time of the review.

Key findings include:

- The adopted hydrology for the major model inflow which is based on flood frequency analysis at Gravesend is considered appropriate and a suitable approach. It is noted that the assessment is not fully in line with Australian Rainfall and Runoff 2019 (ARR2019) but given the assessment is largely based on flood frequency analysis which has not changed substantially under ARR2019, the impact is considered negligible.
- The hydrology approach for the catchments downstream of Gravesend is considered appropriate. It is noted that the approach was also validated by BMT in their detailed peer review and deemed appropriate.
- The hydraulic modelling approach involved the development of a new TUFLOW model based on the existing Mike Flood model developed in the original flood study (WRM 2017). There is little detail provided on the hydraulic model development in Chapter 12 itself and much of the detail was determined from the peer review by BMT.
- The findings from the full peer review by BMT (which reviewed the model files in detail) are noted – they found the model has been built generally in accordance with best practice.
- It is noted that the agricultural levees and Zone C areas were not incorporated into the TUFLOW model. The assumption from the original WRM study was that those Zone C areas should be blocked out. A subsequent peer review deemed this assumption not appropriate as those areas are known to flood in large events. The model appears to have been validated to two design events only - the 10% and 1% AEP events, however there is little information in the documents provided in Chapter 12 of the EIS. Chapter 12 notes that there is a good validation in large magnitude events, however there are significant discrepancies in the 10% AEP event. The specifics of this validation exercise are not provided, but it is

stated that it will be re-visited at detailed design stage. Additional events, particularly historic events for which there is significant observed/recorded data, should have been included. A comparison of the March 2021 event to the modelled 5% AEP event was undertaken, but it was not a thorough validation in the sense that the event wasn't modelled explicitly in the hydraulic model, and it didn't make use of surveyed flood levels that are available. There are two recent events (2012and 2021) which have extensive surveyed levels and gauge data which would improve the confidence in the modelling, particularly for lower magnitude events.

- There is also the opportunity during the detailed design phase to gauge data from the October 2022 flood which may also provide further confidence to the modelling. Anecdotally the water behaved differently for the October 2022 flood compared to other floods, and higher water levels were seen north of Moree along the Gwydir River (Yarraman), as well as the village of Ashley compared to Moree township water levels.

Of the findings, Council has identified the following key areas of concern:

- The model was validated against two events only, and in one of those the validation was reported to be poor. Chapter 12 notes that a good validation was achieved in the 1%, however there are significant differences in the 10% AEP event between the Inland Rail model and the original flood study results (WRM 2017). Additional events should have been included – ideally historic events for which there is significant data available to validate the model to. There are recent events (2012 and 2021) which have extensive surveyed levels and gauge data which would improve the confidence in the modelling, particularly for lower magnitude events which still have a large impact on the township of Moree and surrounding areas.

- The model has blocked out the Zone C/Rural Levee areas for the model. This was an assumption from the original flood study but has since been deemed not a reasonable assumption. There is survey data available to in-fill these areas and the model should be updated. This assumption could result in the impacts of the proposed works being understated.

Considering the above, the following actions are recommended to be enforced at or prior to Detailed Design:

- It is recommended that an additional, smaller event be modelled such as the 2012 or 2021 events to give confidence that the model performs across the range of design events.
- The Zone C areas and agricultural levees should be incorporated into the model and the impact assessment then remodelled. The current schematisation is likely to be conservative with respect to flood levels but may understate the impact of the railway, noting railway currently acts as a levee and then fails in major flooding events. Its failure affects the distribution of water during a flood.
- Incorporate data from the recent October 2022 flood event to provide further confidence to the model.

2.5.2 Flood Impacts and Compliance with Quantitative Design Limits (QDLs)

The points below summarise the review of the flood impacts and compliance with QDLs described in Chapter 12 of the EIS.

Key findings include:

- It is noted the QDLs for N2NS Phase 2 of the Inland Rail project allow for the following increases in flood levels:
    - Up to 10mm increase to habitable floors
    - Up to 20mm increase to non-habitable floors

  - Up to 100mm for external areas of residential properties
  - Up to 200mm on agricultural land
  - Up to 300mm in forests and unimproved grazing land
  - Up to 50mm on Transport for NSW roads which already flood, otherwise no increase
  - Up to 50mm on other sealed reads (unless there is risk of aquaplaning)
  - Up to 100mm on unsealed roads

- In addition, the QDLs allow the following impacts with regards to flood hazard and flood durations:

  - No greater than 10% increase in velocity-depth product
  - No greater than 5% increase in flood duration for habitable floors which flood above floor and flood for greater than 1 hour.
  - No greater than 10% increase in flood duration for habitable floors which flood below floor and flood for greater than 1 hour.

- The impacts of the proposed works are significant and some of these impacts exceed the QDLs described above. The key exceedances are noted below:

  - Afflux is noted with the township under the cumulative impact scenario with Phase 1 and 2 modelled together. The impact is 10-40mm of afflux in the 1% AEP event at up to 86 properties. **This exceeds the QDL and is unacceptable for the community.** Mitigation works are proposed to address this. It must be ensured that these works are constructed prior to the completion of Phase 2 of the project and the designs are consulted with Council during the detailed design phase.
  - Areas to the north and in the vicinity of the Camurra hairpin – impacts exceed 200mm on cropping land (10% through to 1%) and 50mm on Newell Highway (20% through to 1% AEP).
  - Exceedance of flood levels at four buildings in the 1% and 10% AEP events, 2 buildings in the 2% AEP event, 3 buildings in the 5% AEP event, as well as sensitive locations, including the TAFE Agricultural Skills Centre and Moree Gun Club. Of the impacted buildings, floor level surveys were unavailable for 3 of the buildings, so the impact with respect to above or below floor flooding is unknown.
  - **Exceedance on the Newell Highway in more frequent events.**
  - Exceedance of flood hazard in the 2% AEP event and 1% AEP event (1 building in each).
  - Exceedance of flood duration criteria to residential buildings across the range of design events, as well as the TAFE Agricultural Skills Centre in the 2% AEP event.

Of the findings, Council has identified the following key areas of concern:

- Impacts remain that exceed the QDLs. These must be addressed at detailed design either through revised design and/or negotiation with landholders and relevant parties occurs to ensure acceptable outcomes are achieved for all parties.

- There are residential buildings where QDL exceedances occur for which surveys of dwellings are not available. Surveys of all impacted buildings should be sought so the full nature of the impact can be understood.

Considering the above, the following actions are recommended to be enforced at or prior to Detailed Design:

- It is recommended that surveys of floor levels for any impacted dwellings or commercial buildings be gathered.
- The QDL criteria are currently not met. Once the other items are addressed, it is recommended that the design be refined, and models rerun to ensure all QDL criteria are

achieved and/or negotiation with landholders and relevant parties occurs to ensure acceptable outcomes are achieved for all parties.

2.5.3 Recommended future actions as the project progresses in response to section 2.5.1 and 2.5.2

The following actions are recommended as the project progresses:

- In the revised flood impact assessment:
  - Ensure a smaller, historic flood (2012 or 2021) is modelled to improve confidence in the modelling.
  - Ensure Zone C areas and agricultural levees are incorporated into the hydraulic model.
  - Ensure QDLs are achieved and/or negotiation with landholders and relevant parties has occurred which ensures acceptable outcomes are achieved for all parties.
- Facilitate floor surveys for required properties and incorporate into Council's floor level database.
- Ensure the proposed mitigation works to mitigate the cumulative impact of Phase 1 and 2 are constructed prior to or as part of Phase 2 works in consultation with Council.
- Continued engagement with Transport for NSW regarding impacts to the Newell Highway in flooding events.

2.5.4 Flood Relief Culverts

Figure 7-1 illustrates the location of the proposed additional flood relief culverts. These will result in additional floodwater and local water flowing beneath the rail line in locations which were previously inundated but generally not exposed to direct water currents until the existing rail line was overtopped. Downstream impacts are requested to be considered/studied of road, culvert and drainage network system during detailed design phase.

The flood relief culverts proposed are numerous. Land use on the downstream side includes dryland farming areas and therefore on occasion, bare ground. The additional culverts will result in some concentration of flow on the downstream side of the rail line. The potential impact of the concentrated flows would include erosion as the water velocity through the culverts would potentially exceed 0.5 m/s. Velocities in excess of 0.5 m/s would be considered as erosion on bare ground. The culverts therefore have the potential to cause erosion for a distance on the downstream side, until the water spread over the paddocks and velocity dissipates.

Council recommends further investigation into the proposed quantities of culverts and overall design to mitigate any additional flood impacts to land uses on the downstream side of the rail corridor.

2.5.5 Height of Rail Line

Section 7.2.1 Track Upgrade and Realignment, notes the increase in rail heights between 300mm and 1000mm to greater than a 1 in 10-year flood event (10% AEP).

Under *Section 7.2.5 Culverts*, indicates that the rail line will be designed to a height so that it remains open in a 1 in 100-year flood (1% AEP).

Figure 7-5 provides a concept of the culverts where the rail line is much higher than the 1% AEP event and two invert levels will be created in the culverts.

Further clarification is recommended regarding the above.

2.5.6 Additional flood impact and hydrology considerations

From a local perspective, the following issues are to be addressed by those concentrating on the flood impact of the upgraded rail line:

- Localised increases in velocity both upstream and downstream of the culverts to the north of the Gwydir River – mapping shows extended areas of increased velocity that potentially exceeds scour velocity across areas of cultivated paddocks.
- Diversion of floodwater to the north toward Marshalls Ponds as a result of the change in alignment and change in culverts once the Camurra hairpin is replaced potentially having larger impact for residences in the nearby area.
- Council requests a broader study area to include the Yarraman and the village of Ashley, and analysis if there are any impacts on these residents. Council is concerned more water being pushed up through the Marshall Ponds area will have a greater impact downstream.

2.6 Surface Water Quality

2.6.1 Erosion and sedimentation control

Key opportunities, issues and impacts have been identified out of Council's review of the EIS and CEMP outline, and are summarised below:

- Consideration of erosion and sedimentation from banks and batters exposed in the vicinity of the waterways for the crossing construction works.
- The Soil and Water Management Plan and an Erosion and Sediment Control Plan included in the CEMP outline must be reviewed, implemented and inspected during the construction period.
- The Water Quality Monitoring locations suggested are suitable to identify any potential water quality issues.
- The final design must ensure vegetation is re-established where it has been stripped to reduce erosion and sediment pollution.
- The final culvert rock apron designs where erosion impacts extend beyond the rail corridor are to be agreed on with the relevant landowner.
- The Skinners Creek bridge abutments are to be designed to mitigate the increased velocities at this section of the upgrade.

Council recommends the following inclusions in the CEMP and detailed design to ensure the above matters are adequately addressed:

- Erosion and Sediment Control Plans for each waterway crossing to ensure exposed batters and construction works do not add sediment and hydrocarbons etc. to designated waterways.
- Location details for stockpiles – must be outside of 20% AEP flood extents.
- The final design must include measures to ensure vegetation is re-established in a timely manner where it has been stripped to reduce erosion and sediment pollution.
- Council is to be given the opportunity to review future documentation as it is released (refer to Section 2.4).

Additionally, the following are future actions as the detailed design and related documents progress:

- Council is to be given the opportunity to review the Soil and Water Management Plan and Erosion and Sediment Control Plans when completed to ensure there are measures to mitigate impacts to waterways, and to confirm the details in the CEMP outline has been implemented.
- Council is to be given the opportunity to review the shutdown procedure should a flood event be predicted in terms of stabilising/protected exposed soil/batter.
- The final water sources that will be used for construction should be reviewed when they are decided upon.
- Council is to be given the opportunity to review the Surface Water Quality Monitoring Program when it is completed.
- Council is to be given the opportunity to review the draft detailed design plans in terms of:
    - The final culvert rock apron designs where erosion impacts extend beyond the rail corridor and are to be agreed with the relevant landowner.
    - The Skinners Creek bridge abutments design to mitigate the increase velocities at this section of the upgrade.
    - The revegetation design for all waterway crossings embankments.

2.7 Groundwater

2.7.1 Water Management Act 2000 and Water Act 1912

Council is of the opinion that the assessment is lacking assurance around the extent of the proposed excavation works and potential disruption of groundwater levels. *Section 3.4.3.6 Water Management Act 2000 and Water Act 1912* states:

> *"Excavation would be undertaken as part of the proposal. Although groundwater may be intercepted, it is unlikely that any dewatering would exceed 3 megalitres (ML) of groundwater per year, meaning that licences or approvals under the water regulatory regimes may not be required."*

However, *Table 14-5* states:

> *"The proposal is largely at grade and does not include deep excavations or cuttings that have the potential to intersect groundwater or require active dewatering."*

As no dewatering is required, the minimal impact considerations outlined in the Aquifer Interference Policy (AIP) are not exceeded, therefore, impacts are considered minimal.

However, it is unclear if the project is likely to intercept groundwater, and if it does, how much groundwater may be produced.

It is noted the EIS refers to excavations, piling and borrow-pits, and that the shallowest groundwater was encountered at 6.08 m below ground level (mBGL) in a monitoring pipe with average groundwater depth of 8.94 mBGL at that pipe.

Given the above proposed works and groundwater levels, Council requests more assurance around the risk of intercepting groundwater and the licensing and management process that ARTC would follow if groundwater is intercepted/produced.

2.8 Cultural Heritage

2.8.1 Significance of steel Pratt truss bridges

The assessment of the two bridges proposed to be removed (Mehi River and Camurra-Gwydir Bridge) and their significance state that these examples are not considered to be rare in the local area due to the frequent use of the steel Pratt truss bridge at this time, along NSW railway lines and roads. The HIS includes *Appendix A, List of extant rail and road steel Pratt trusses in NSW.*

Council requests clarification as to whether any of the other rail bridges listed in Appendix A are proposed to be removed as part of the broader Inland Rail program and which remaining bridges are located within the local region.

2.8.2 Heritage interpretation strategy for Steel Bridge Camp

Council acknowledges the important cultural significance of the Steel Bridge camp and supports the development of a Heritage Interpretation Strategy as per the recommendations in the *Cultural Aboriginal Heritage Assessment Report,* to mitigate impacts to the cultural heritage values associated with the Steel Bridge camp.

2.9 Noise and Vibration

2.9.1 Construction Noise

Potential noise and vibration impacts associated with construction of the project are assessed in *Technical Paper 10: Construction Noise and Vibration Impact Assessment* (hereafter referred to as the "CNVIA"). Council's feedback on the CNVIA is provided below.

2.9.1.1 Name and qualifications of author(s)

The CNVIA does not identify the name or relevant qualifications of its author(s). The author(s) of the CNVIA should be identified and should have qualifications and/or experience sufficient to fulfil the requirements of 'member' grade of the Australian Acoustical Society.

2.9.1.2 Particularly annoying works

The *Interim Construction Noise Guideline* (DECC, 2009) (ICNG) identifies a number of activities that are proven to be particularly annoying to nearby residents, as follows:

- Use of 'beeper' style reversing alarms or movement alarms, particularly at night-time
- Use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work
- Grinding metal, concrete or masonry
- Rock drilling
- Line drilling
- Vibratory rolling
- Rail tamping and regulating
- Bitumen milling or profiling
- Jackhammering, rock hammering or rock breaking
- Impact piling.

The ICNG recommends that a +5 dB penalty should be included in quantitative assessments to account for increased annoyance associated with these activities.

Section 4.3 of the CNVIA identifies plant and equipment likely to be used during construction of the project and presents the sound power levels (SWL) of construction plant. In this section of the CNVIA, vibratory rollers are identified as having a +5 dB penalty added to account for "special audible characteristics". The quoted SWL of vibratory rollers in Table 4-3 of the CNVIA is 113 dBA and is said to be inclusive of the +5 dB penalty.

Table 4-3 of the CNVIA also identifies several other construction activities/equipment that, per the ICNG, should attract a + 5dB penalty. These activities/equipment include:

- Power saws
- Rail tamping and regulating
- Rock breaking

Council requests that all construction activities associated with the project are identified in the ICNG as particularly annoying be clearly identified in the *Construction Noise and Vibration Management Plan* (CNVMP), should receive a +5 dB penalty in accordance with the ICNG in any future quantitative assessments, and be considered for additional mitigation measures to account for the increased annoyance.

2.9.1.3 Construction noise mitigation

Table 6-1 of the CNVIA identifies a number of engineering controls to mitigate construction noise impacts and presents indicative noise benefits for each control. The noise benefits range from 2-5 dBA for avoiding clustering of noisy plant to 10-15 dBA for screens or enclosures for stationary equipment.

However, the paragraph following Table 6-1 of the CNVIA states that:

> *"With the implementation of all the typical engineering control mitigation measures listed in Table 6-1, the predicted construction noise levels are expected to decrease by a maximum of 5 dB."*

This statement appears at odds with the information in Table 6-1, which suggests that a **minimum** reduction of 5 dB should be achievable with engineering controls. For example, portable temporary screens are quoted to provide a possible noise benefit of 5-10 dB. It is expected that fencing would be erected around the construction works and that portable temporary screens could be fitted to the fencing. Therefore, it appears feasible to reduce noise impacts from much of the works by 5-10 dBA.

Council requests that firm commitments are made regarding the actual engineering controls to be employed during the works and their anticipated noise benefits. Additionally, temporary screens should be placed on the fencing around all works that are predicted to exceed the noise management level (NML).

2.9.1.4 Highly noise affected receivers

The CNVIA identifies a number of sensitive residential receivers that are predicted to be subject to construction noise levels greater than 75 dBA ($L_{Aeq,15min}$). These receivers are regarded as being "highly noise affected".

As outlined previously, the CNVIA claims that typical engineering controls would only reduce construction noise levels by up to 5 dB. Council challenges this claim and requests that more effort is placed on identifying all reasonable and feasible measures to mitigate construction noise impacts. The highest priority should be given to reducing the number of highly noise affected receivers.

In the event that highly affected receivers cannot be avoided, individual consultation with these receivers should occur whereby they are notified of the following:

- The range of construction noise levels they will be subjected to
- The times and duration of periods where they are highly noise affected
- What measures will be in place to reduce the noise levels they are subjected to

Noise monitoring should be conducted at all highly noise affected receivers to confirm the highest construction noise levels they are subjected to and the effectiveness of mitigation measures.

2.9.2 Operational Noise

Potential noise and vibration impacts associated with the operation of the project are assessed in *Technical Paper 11: Operational Noise and Vibration Impact Assessment* (hereafter referred to as the "ONVIA"). Council's submission on the ONVIA is presented below.

2.9.2.1 Name and qualifications of author(s)

The ONVIA does not identify the name or relevant qualifications of its author(s). The author(s) of the ONVIA should be identified and should have qualifications and/or experience sufficient to fulfil the requirements of 'member' grade of the Australian Acoustical Society.

2.9.2.2 Source noise levels

Section 4.2 of the ONVIA identifies source noise levels for rolling stock (i.e. wagons and locomotives), horn noise and crossing bell noise. However, no information is provided as to the origin(s) of this data or its representativeness to the Project.

All inputs to the operational noise model should be clearly referenced and fully justified as being representative to the Project.

2.9.2.3 Validation of noise model

The ONVIA claims that the predictive noise model cannot be validated due to Inland Rail Trains not being operational. Furthermore, the ONVIA provides no justification for the chosen prediction method (Nordic Rail Prediction Method).

Council notes that the purpose of model validation is not only to confirm noise source levels but also to verify the performance of the noise model in the local context. As stated in the *Rail Infrastructure Noise Guideline* (EPA, 2013) (RING):

> *"Several models are available for predicting airborne noise levels at receptors as a result of railway operations…*
>
> *…Each model has been essentially developed on the basis of the country of origin's own measurement data on its rolling stock fleet. So there are differences in the propagation calculations between models. It is therefore important that the model or procedure chosen is validated for the project prior to local use."*

The predicted operational noise levels presented in the ONVIA cannot be relied upon in the absence of a justification for the chosen prediction method and a demonstration of the noise model's ability to accurately, or at least conservatively, predict noise levels at sensitive receivers.

It is critical that the operational noise model is able to predict the upper bound of receiver noise levels, particularly in the case where trigger levels are likely to be exceeded and noise mitigation would be required. The ONVIA has recommended a 5-metre-high noise barrier be constructed along section of track in Moree of almost 300 metres in length. If the noise model is under-predicting operational noise levels, the nominated barrier would likely not achieve compliance at all receivers, and it may not be feasible to construct a noise barrier that would ensure compliance at all receivers.

Potential operational noise impacts associated with the project must be assessed using a noise model that has undergone some form of local validation. Council notes that noise model validation has been demonstrated in detailed assessments of other Inland Rail projects, such as that conducted by SLR Consulting for North Star to NSW/QLD Border.

2.9.2.4 Noise Barrier

The ONVIA has recommended a 5-metre-high noise barrier be constructed along section of track in Moree of almost 300 metres in length. Council requests any proposed noise barrier treatment is thoroughly consulted with Council and community during detailed design phase.

If a noise wall is agreed in future as an acceptable noise treatment by Council and community, consideration is requested to be given to the visual treatment of such a structure, such as through public art or other softening features.

2.9.2.5 At-property treatments

The ONVIA states that at-property treatments can be used in some cases to mitigate noise impacts and that such treatments are considered a last resort once all other mitigation options have been exhausted.

Many at-property mitigation measures involve architectural treatments and the closing of windows. As noted in Council's submission to the EIS for the Narrabri-North Star, Phase 1 project, the Moree climate is hot and many buildings rely on evaporative cooling rather than refrigerated air conditioning. This is effective in the climate and is significantly cheaper to operate although it requires more than one window to be kept open. This is a significant limitation in terms of the ability to provide acoustic treatment to affected buildings.

Council requests that solar power or financial compensation be offered in instances where at-property treatments require a shift to refrigerated air conditioning.

2.10 Social Impact Assessment

2.10.1 Culturally significant Steel Bridge Camp and severance mitigation

The Steel Bridge Camp is a culturally and historically significant area for local people. It is also a thoroughfare for pedestrians to access the town centre from East Moree. Council requests that community are consulted prior to construction of the Mehi River bridge for safe access to the area during construction, and that pedestrian access is remediated along the Mehi River (currently Grose Walkway) following construction.

2.10.2 Local resource availability

Whilst Council acknowledges the benefit to the local economy of employing local resources to assist with N2NS Phase 2, careful consideration of availability of tradespeople, building/construction workers etc to assist with local work and demand is required.

2.10.3 Temporary worker accommodation

Council has consulted with ARTC regarding the high demand for short-term accommodation and the highly competitive housing market. The ARTC has committed to providing dedicated workers accommodation near the project at suitable locations, however this accommodation will be subject to consultation, and where appropriate, approval from Council.

The Moree Plains Local Housing Strategy indicates that the Moree area will need an extra 800 houses by 2026 to accommodate for median population growth projections as a result of productivity and job creation from operation of major projects in the area, including the Special Activation Precinct.

In light of our community's forecasted housing needs, Council is open to having constructive discussions around legacy housing options that may support the local housing shortage, both during and following Inland Rail construction.

2.10.4 Temporary occupation of land – Gwydir River rest area

The plan identifying areas that will be temporarily occupied during construction under *Section 9.4 Impact Assessment* includes a carpark adjoining the Newell Highway near Gwydir River. This carpark or rest area provides access to the Gwydir River. This section of the Gwydir River is a popular swimming and camping area for locals and travellers, and Council requests that ARTC and its contractors considers appropriate and safe access to the river for recreational users of this area.

Transport for NSW will also need to be consulted for appropriate usage being within the Newell Highway corridor.

2.11 Economics

Several major infrastructure projects will be under construction during 2024, some of which were not captured in the KPMG economics report, including the Special Activation Precinct and Moree Intermodal Overpass, Newell Highway upgrades, Moree hospital redevelopment and N2NS Phase 2. These projects will in many ways been a boon for the local economy, however also place further pressures from a workforce and labour perspective on local businesses.

For example, N2NS Phase 1 saw a noticeable shift of workers moving jobs from local businesses to ARTC and its Tier 1 contractor, which placed pressures on local organisations and businesses. While Council acknowledges this is positive from a local upskilling and capability perspective, it is also shifting the local resourcing problem onto local organisations and businesses.

Council requests where possible, that ARTC and its contractors transfer workforce between N2NS Phase 1, NS2B and N2NS Phase 2, and consider opportunities to transfer skills and labour between other major projects within the local area during construction to mitigate negative impacts for local businesses, while still maintaining positive outcomes for the projects.

Council is open to further conversations on local workforce matters and alignment or joint opportunities to leverage recommendations from the Moree Plains Workforce Attraction and Retention Strategy.

2.12 Visual Impact Assessment

2.12.1 Access to private viewpoints

Council acknowledges that the upgrade works to the rail line will result in negligible visual impacts for the most part of the corridor. Notwithstanding, there are various locations comprising residential uses that will experience some degree of view change during construction and subsequent operation of the corridor for freight transportation. As such, Council would like to ensure every sensitive receiver within a reasonable proximity to the corridor has been adequately considered for any resultant visual impacts.

It is noted that various sensitive receiver properties have only been assessed via desktop analysis, as indicated in *Section 19.3.3 Key viewpoints*. Council requests further consultation be undertaken with the nearby property owners to allow for access onto/near their property (where corridor is viewed from) to appropriately assess the full extent of potential visual impacts. Photo evidence from these sensitive receiver properties, similarly to the public viewpoints, should be illustrated to understand the visual changes these properties may experience, and to accurately inform of any at-property mitigation measures that may be required.

2.12.2 Exclusion of key sensitive receiver viewpoints

Several residential properties along Oak Street that sit southeast of the Mehi River Bridge that will likely experience the brunt of the impacts of the rail upgrade works have not been included as sensitive receivers. Consequently, consideration of their viewpoints has not formed part of the assessment (refer Table 19-7).

Council requests the following properties be included in the assessment:

- Nos. 5, 6, 7a & 8 Oak Street, Moree

2.12.3 Stakeholder input into detailed design of Mehi River Bridge area

In response to *Mitigation Measure VI-3,* relating to the detailed design of the Mehi River Bridge, Council welcomes the opportunity for design input, in partnership with the Local Aboriginal Land Council (LALC) and other relevant stakeholders.

The design, materials and associated landscaping should be reflective and sympathetic of the Aboriginal cultural and local history associated with the Steel Bridge Camp and surrounding land.

2.12.4 Confirmation of addresses for affected properties

Table 19-7 outlines the properties that have been acknowledged as sensitive receivers. A few discrepancies have been identified with five (5) property addresses and lot numbers. Further verification is recommended to ensure the correct properties have been notified of the project:

- 2 River Street– Council can confirm this street was renamed to McElhone St several years ago
- 125 Gwydirfield Road – this is 15 Gwydirfield Road according to Council records
- 693 Gwydirfield Road – this is 581 Gwydirfield Rd according to Council records
- 606 Gwydirfield Road – this is 494 Gwydirfield Rd according to Council records.

2.12.5 Mehi River Bridge and Gwydir River Bridge Photomontage

An indicative photomontage of the Mehi River Bridge and Gwydir River Bridge upgrades should be form part of the Visual Impact Assessment.

Before and after shots have been provided under *Section 19.4.3.2,* for other public viewpoint impacts. However, after shots from southeast of Mehi River Bridge and after shots viewed from the southwest and northwest of Gwydir River Bridge, have not been illustrated.

Council requests this be presented during the detailed design phase as these locations are where some of the most dramatic changes will be experienced that will be permanently altering the bridges.

2.12.6 Mitigation Measure – VI-1

Proposing advanced species is recommended for visual screening to offer maximum effectiveness at the time of installation. Suitable advanced species that are compatible with the local climate should be integrated into the proposed Urban Design and Landscape Plan.

Council welcomes the opportunity for input into the proposed planting/landscape scheme to advise of appropriate local planting and landscaping policies.

2.13 Soils and Contamination

2.13.1 Site specific contamination assessment

Section 20.1 Summary of impacts states the following:

> *"During the detailed design phase, a site-specific contamination investigation would be undertaken to assess the three potential sites listed on the ARTC Contaminated Site Register."*

Council requests that further clarity is provided to confirm whether a detailed site investigation is proposed for each individual site. A better understanding of the scope of the assessment is prudent considering the potential to intercept contaminated materials at the three locations listed on the ARTC Contaminated Sites register that fall within the project construction footprint.

2.13.2 Contaminated Land Management Act (CLM Act) Notified Sites

It is noted there was an inconsistency in findings between the GHD (2017) investigation and the EIS desktop assessment for the project (refer pg. 20-9). GHD found four sites on the NSW EPA list of notified sites under s.60 of the CLM Act, as conveyed in *Figure 20-2 Contaminated Land Register*, whilst the EIS found none.

Council recommends ARTC clarify this inconsistency and the findings of the report by GHD and assess if further investigation is warranted.

2.13.3 Presence of acid sulfate soils / saline soils

Further explanation is required to justify acid sulfate soils (ASS) and saline soils being classed as a medium or greater risk to the project. According to *Section 20.5.1.2* and *Section 20.5.1.3,* ASS has no known probability of occurrence and there is “no salting evident” within the study area.

2.13.4 Mitigation measures

Section 20.7.1 Approach to mitigation notes the results from the site-specific contamination investigation for the three sites listed on the ARTC Contaminated Site Register within the project footprint will provide input into the design of the project.

Council recommends the results should also be used to inform the Construction Environment Management Plan (CEMP).

Duplications of certain mitigation measures for the same stage of the project have been identified in the EIS, with some comprising only minor wording variations (e.g. SC-1 & SC-2, SC-3, SC-13, SC-6 & SC-9).

It is recommended the mitigation measures are reviewed and consolidated to ensure they are clear and consistent.

Mitigation measure SC-12 refers to a *“risk assessment”* for any reuse or retention of contaminated or potentially contaminated material onsite.

Council requests further information regarding what the assessment covers (e.g. testing and/or waste classification), including specification of the type of materials considered for reuse or retention e.g. rail associate materials only, such as ballast and sleepers.

2.14 Waste

2.14.1 Capacity of waste management facilities

Table 21-3 under *Section 21.3.2.1 Construction impacts,* summarises estimated waste quantities to be generated during construction. The table describes that some materials will be reused onsite or recycled/disposed of offsite. The table states that significant quantities of rail sleepers, timber, metal, asphalt and excavated material will be generated.

The waste chapter states that the above materials will either be reused onsite or transported offsite for recycling or disposal if they are unusable, for example, if some of the material is contaminated.

Table 21-5 summarises the locations of, and waste types accepted at, nearby waste management facilities, which are shown on Figure 21-1.

Council is concerned that these facilities may not have sufficient capacity to accept, store and process these wastes. Therefore, Council would appreciate more information on the quantities of waste likely to be bound to these facilities and assurance that their operators have been consulted during the EIS process regarding their capacity to accept, store and process such wastes.

Notwithstanding the above, it is Council’s preference that recyclable material is transported directly to the proposed end-user of these materials.

2.15 Climate Change

2.15.1 Incorrect emergency service reference

Chapter 22 - Climate change - *Section 22.6.2 Operation* includes Risk ID CCR 41, which refers to CFA ('Country Fire Authority') which is the Victorian equivalent of the NSW Rural Fire Service (RFS). This measure should be updated to reflect the correct state emergency fire service (NSW RFS).

2.16 Sustainability

No comment.

2.17 Air Quality and Greenhouse Gas

2.17.1 Assessment Approach

The Air Quality and Greenhouse Gas Impact Assessment (AQGHGIA) includes a desktop assessment of potential construction and operational air quality impacts.

This assessment adopts the relevant air pollutant criteria from the NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2016).

Due to the relatively predictable and low risk of the air emissions arising due to the nature and scale of the Project, Council considered that a desktop review is considered adequate and accordingly air dispersion modelling was not required.

2.17.2 Background Data

Data from the DPE Narrabri monitoring station which is located approximately 100km from the Project location was used to represent background air pollutant levels in the vicinity of the Project. It is acknowledged that publicly available ambient air quality monitoring data is difficult to obtain in regional areas of NSW.

We note that DPE operate a mid-cost monitor (such as a DustTrak) to monitor particulate levels as part of the rural dust monitoring network at Moree (located at the Bureau of Meteorology Moree Aero site). This data would have been more representative of actual particulate levels in the vicinity of the Project and could have been used to compare with the Narrabri monitoring data.

The AQGHGIA applies the 2018 and 2019 Narrabri data to make inferences regarding seasonal dust trends, and it is relevant to contextualise this data with regard to the severe drought conditions occurring in 2018 and 2019 leading to the major 2019/2020 bushfire season. For example, whilst this data shows the highest levels in the summer, removing the effects of the summer drought and bushfires is likely to show that some high levels also arise in winter, for example due to wood heaters and poor air dispersion.

The rational for adopting the 70th percentile 24-hour average particulate concentrations is not clearly explained in the AQGHGIA. While it is acknowledged that this metric was used in Victoria in the past, and also that the maximum values in the data set are often due to extreme events (particularly the case in 2019 due to the 2019/2020 bushfires), it is unclear why then the 70th percentile has been adopted rather than for example considering the data set after excluding the extraordinary bushfire and dust storm periods.

There is no comment explicitly regarding annual average fine particulate levels which is considered the key metric in terms of air quality related health impacts, however it is acknowledged that fine particulate from construction activities is in general relatively low, and similarly the fine particulate from operational emissions from locomotives tends to disperse very rapidly with distance from the line. It is noted that the annual average concentrations are higher than the 70th percentile 24-hour average results which further suggests is not a suitable measure of short-term background levels.

2.17.3 Criteria

The relevant criteria have been considered correctly. It is noted that whilst *Section 24.2.2* comments that the short-term (relevant 1-hour and 24-hour) criteria are applicable for the construction phase due to its short-term transient nature, it is also stated that all criteria (including annual averages) are applicable to the assessment of operational impacts.

2.17.4 Meteorological Data

The assessment uses data from the Bureau of Meteorology Moree Aero to characterise the local meteorology.

While this data would be representative of the conditions likely to be experienced in the vicinity of the Project, the presentation of this data in the report could be improved to assist the reader with the following:

- It is unclear from the windrose what wind speed ranges relate to what colours on the colour bar and thus it is recommended to specify the wind speed ranges in either m/s or km/hr.
- It is noted that only the easterly direction is labelled on the windrose. It would be easier for the reader if other direction labels were added.
- It would be useful to present seasonal windrose plots i.e. summer, autumn, winter, spring in addition to the annual distribution.
- It is unclear what Figure 24-5 is showing. It would be helpful to include a legend for this figure.

2.17.5 Terrain

Other than stating that due to spatial variation in topography etc., meteorological conditions will also vary, there is no comment on any actual local topography and how this may affect potential air quality impacts from the Project.

Nevertheless, given that the terrain in the vicinity of the Project is relatively flat, the topography is not a significant consideration that may affect winds and air dispersion.

2.17.6 Receptors

The assessment appears to adequately identify all likely sensitive receptors within 200m of the Project.

2.17.7 Identification of Potential Sources of Air Pollution

The assessment appears to adequately identify the potential sources of emissions associated with the construction and operation of the Project.

Table 24-2 outlines the key pollutants of interest with regards to the construction and operation rail infrastructure. Relevant criteria are provided in Table 24-3 for pollutants identified to be most significant for the N2NS Phase 2 during construction and operation.

2.17.8 Assessment of Impacts

2.17.8.1 Construction impacts

The assessment considers that the construction of the Project has some potential for short-term air quality impacts, particularly at sensitive receivers locations within close proximity to the Project area (within 20m at some locations).

Whilst the potential construction impacts have not been quantified, it is acknowledged that quantifying construction impacts is difficult due to the intermittent and mobile nature of construction works. It is considered that potential air quality impacts from construction activities can be

adequately managed as per the mitigation and management measures outlined in the *Section 24.2.5* and *24.4* of the AQGHGIA.

It will however be crucial that a very high level of dust control is implemented for the receptors within 20m of the track, mainly in Moree. The highest degree of dust mitigation diligence will be required on a daily basis to achieve this. Mitigation that would be required for these receptors this includes measures to prevent wind-blown dust when works are not occurring, such as overnight, weekends or during holidays. Dust mitigation measures will thus be needed at all times for these receptors, and specific commitments and specific measures to ensure this occurs are requested to be provided a draft construction dust management plan submitted to Council for review prior to allowing construction works to commence.

2.17.8.2 Operational impacts

For the assessment of operational impacts the results of the *Northern Sydney Freight Corridor Strathfield Rail Underpass Air Quality Assessment* (Parsons Brinckerhoff, 2012) have been used to infer likely pollutant impacts. While it is stated that for a rail line with 35 movements per day (compared with the 20 trains per days forecast by the Project by 2040) pollutant levels were significantly below the assessment criteria at a distance of 50m from the track. It is unclear if this is referring to cumulative or incremental impacts. It is unclear what impacts may occur at sensitive receivers located in closer proximity to the Project, e.g. within 20 m at Moree.

The is no direct comparison made between the modelled parameters in the Parsons Brinckerhoff study such as 75km/hr for 81 class diesel locomotives, with the conditions likely for the N2NS Phase 2, for example in Moree. The assessment outlines the maximum incremental impacts from the Parsons Brinckerhoff study, however it is unclear at what location and distance from the rail line these effects apply.

The particulate data in the 2012 Parsons Brinckerhoff study is incorrect, and this needs to be addressed. Incorrect data from another report is not a good basis for an assessment. Specifically, the maximum predicted 24-hour average incremental impacts for PM_{10} and $PM_{2.5}$ are stated as being 0.06µg/m^3 and 2µg/m^3 respectively which is not possible as $PM_{2.5}$ is a subset of PM_{10}. PM_{10} levels must always be greater than $PM_{2.5}$ levels. It is acknowledged that (as unfortunately is also incorrectly shown in the original PB report) that $PM_{2.5}$ is generally 97% of the PM_{10} emissions from locomotives, however the PM_{10} levels presented in this and the PB report form 2012 are only 3% of the $PM_{2.5}$ values, and are incorrect.

Results for NO_2 and benzene should be specified as being for 1-hour averages, otherwise this may cause confusion as both 1-hour and annual average criteria are identified for NO_2.

It would be useful to quantify the anticipated change in air quality levels at sensitive receptors due to the operation of the Project compared with impacts from the existing rail line. For example, would emissions approximately double when increasing from 21 million tonnes of freight movement in 2016 to 40 million in 2050, or would emission slightly decrease due to using more modern double stack trains?

There is no cumulative assessment of pollutants i.e. incremental Project impacts plus the background levels. This should be considered for particulate levels where background data is presented.

Overall, with attention to the above matters of correct and clarification it is expected that the assessment would indicate the likely risk of operational impacts is low in terms of air emissions. Most detailed studies to freight rail movements confirm that the potential air effects tend to diminish very rapidly within a relatively short distance away from the line.

2.17.9 Greenhouse Gas

The assessment states that once fully operational, the Inland Rail program is predicted to reduce current carbon emissions by 750,000 tonnes per year, as a result of transferring road freight to rail.

Whilst a reduction when moving from truck to rail freight is very likely to be significant for the distances involved, it is unclear how this value was calculated.

The most significant operational source of greenhouse gas emissions would be from the diesel consumption by trains. However, these emissions do not appear to have been included in the greenhouse gas assessment. It is also unclear whether diesel emissions from trains have been considered with regards to the above stated reduction in emissions.

2.17.10 Mitigation and Management

Section 24.2.5.1 indicates that an air quality and dust management sub-plan would be prepared as part of the CEMP and implemented during construction to ensure air quality impacts do not exceed relevant air quality criteria. This is supported, and Council would seek that its comments at 2.17.8.1 are addressed in a draft plan submitted to Council for adequacy review prior to construction works being permitted.

The mitigation measures summarised in Table 24-7 generally appear to be reasonable.

2.17.11 Risk Assessment

The AQGHGIA makes reference to Appendix C: Environmental Risk Assessment of the EIS. The air quality risk levels associated with the construction of the Project are generally agreed as being low to medium as presented. However, there is a very high risk of construction dust impacts at the edge of Moree if these emissions are not managed very diligently.

The risk assessment shows a “very high” risk of greenhouse gas emissions due to the operation (of the diesel fuelled trains). This however does not accord with the GHG assessment which shows that construction emissions are 99% of the GHG and operational emissions are only 1% of the total GHG emissions, (noting that emissions from the trains do not appear to be considered in the GHG assessment but do appear to be the reason for a very high rating in the risk assessment).

2.17.12 Summary

Table 1 presents a summary of the potential issues identified in the AQGHGIA and indicates the risk of each issue regarding potential to alter the outcome of the assessment.

Overall, most of the issues identified require some clarification and the issues with most relevance are prioritised as being low, medium or high risk.

A key issue is the effective management of construction dust for receptors within 20m of the works, such as at Moree. In this regard Council seeks specific commitments to controls and mitigation be made and detailed in a draft Construction Dust Management Plan submitted to Council for adequacy review prior to construction works being permitted.

Table 1: Summary of identified risks for AQGHGIA issues

Issue	Comment	Risk
Background data	Use available local data	Low
	Contextualise data with reference to drought and bushfires	Low
	Provide rationale for use of 70th percentiles to represent background	Medium
	Consider annual average background levels	Medium
Meteorological data	Add labels to figures for clarity	Low
Terrain	Add comment regarding local topography	Low
Identification of potential sources of air pollutant	Clarify which pollutants are key pollutants	Low
Assessment of impacts/ - Operational Air Quality	Generally adequate, but some incorrect data should be corrected and improvements could be made as outlined in the review.	Medium
Assessment of impacts/ - Construction Air Quality	The assessment does not provide sufficient details to ensure that the high risk of construction dust impacts at receptors within 20m of the works will be adequately managed. Council seeks that its comments at Section 2.17.8.1 are addressed in a Construction Dust Management Plan to be submitted to Council for adequacy review prior to construction works beginning.	High
Assessment of impacts/ GHG	No assessment of GHG gas emission from diesel consumption in locomotives. Need to clarify the discrepancy between the risk assessment and the GHG assessment.	Medium

2.18 Health and Safety

2.18.1 Risk during operation

This Chapter only lists positive impacts from the project on the road network and states that potential risks to health and safety would be mitigated through managing operation activities.

Council recommends the Risk Assessment should include the following additional construction impacts:

- Safety impacts of additional workers within Moree and surrounding areas, during the construction period; and
- Health impacts of increased dust and pollution on surrounding crops.

2.18.2 Workplace safety

Section 25.4.2.8 Workplace safety, identifies the health and safety risks associated with construction, however there is an absence of regard for potential agriculture related impacts such as livestock entering the work site.

Council requests that ARTC further investigate the likelihood and potential of this risk of occurring and any subsequent issues as a result (e.g. biosecurity).

2.18.3 Emergency vehicle movements

Section 25.4.3.3 Emergency vehicle movements, states:

> *"Access to all existing roads would be re-established during operation of the proposal and no disruption to access for emergency vehicles would occur."*

Council is concerned this does not consider train breakdowns or delays and the resultant disruption for emergency vehicles if no level crossings are available to provide access from east to west.

2.19 Cumulative Impacts

2.19.1 Cumulative flood impacts

Chapter 12 presents the cumulative impacts of both Inland Rail and Newell Highway upgrades with additional impacts within Moree and between the rail corridor and Newell Highway reported. The report describes no QDL exceedances as a result of the cumulative impact, however the resulting impacts should be noted by Council, ARTC and Transport for NSW and improved solutions considered.

2.19.2 Cumulative biodiversity impacts

The last paragraph under *Section 26.4.2 Biodiversity*, states:

> *"The major potential impacts to biodiversity identified as a result of the proposed are also likely outcomes of other projects assessed in the region, and the impacts are therefore considered cumulative. The cumulative impacts are considered to be of medium to high significance".*

The tables and summary provided on the following page however indicate that the cumulative biodiversity impact significance is determined to be medium. Further clarification is required.

2.19.3 Cumulative heritage impacts

Refer to comments regarding heritage significance of the removal of the heritage items in Section 2.8.1 above. If other heritage listed bridges are removed as part of the broader Inland Rail project, this may change the cumulative impact assessment for heritage.

2.19.4 Cumulative construction noise impacts

In addition to the Project, several other large construction projects are scheduled to occur concurrently from 2024. These projects include but may not be limited to:

- Newell Highway upgrades North of Moree
- Moree Special Activation Precinct, including the Moree Intermodal Overpass
- Moree hospital redevelopment

The CNVMP should identify concurrent works associated with other projects that have the potential to result in cumulative noise and vibration impacts. Such impacts may manifest as increases in either the magnitude and/or duration of construction noise and/or vibration. Where cumulative construction noise and/or vibration are foreseeable, additional mitigation measures should be implemented.

2.19.5 Impact significance – social impact and economics

Section 26.4.10 Economics, states that:

> *"The N2NS Phase 1 project is scheduled to conclude approximately three months prior to the commencement of construction on N2NS Phase 2. As such, it is unlikely that pressure for worker accommodation in Moree and surrounds would arise"*

In addition to the Project, several other large construction projects are scheduled to occur concurrently from 2024 and these need more consideration. These projects include but may not be limited to:

- Newell Highway upgrades South of Moree (approx. timeframes 2022-2025)
- Newell Highway upgrades North of Moree (approx. timeframes 2023-2028)
- Moree Special Activation Precinct, including the Moree Intermodal Overpass (approx. timeframes 2024-2026)
- Moree hospital redevelopment (approx. timeframes 2024-2025).

This scenario would likely result in an exceedance of the workers initially predicted when preparing the EIS and should be included in the cumulative impact assessment, and urges further consideration of the rating of 'medium' for cumulative impacts for social and economics may need to be adjusted to 'high'.

Council acknowledges the efforts ARTC has made during N2NS Phase 1 and Phase 2 projects to date in engaging with Transport for NSW on the Newell Highway upgrades from a construction interface and design perspective.

2.19.6 Cumulative waste impacts on waste management facilities

Further to the point raised in Section 2.18 Waste above, the expected quantities of unusable waste material from Phase 2 has not been adequately detailed, thus Council lacks confidence that the local waste management facilities will have sufficient capacity to support the quantities.

Considering there are other large-scaled infrastructure projects in the vicinity from 2024, and assumingly smaller scaled development that will potentially overlap with Phase 2, this may pose an even greater restriction on the availability of disposal facilities.

2.20 Approach to Environmental Management

The list of proposal uncertainties acknowledged in Table 27-2 is significant, with several of these uncertainties having the potential to significantly impact the region. It is not clear if the proposed resolution to these uncertainties would result in an impact that is less than what has been publicly stated in this EIS. A proposal uncertainty which requires further investigation and consultation with Council is the alternative route for emergency services in the event of sustained severance or

delays in accessing East Moree, such as a train breaking down and blocking both Alice Street and Bullus Drive level crossings.

Council acknowledges ARTC's consultation to date on this matter and is committed to working towards an appropriate solution.

Section 27.3 of the EIS references the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). Council notes that DPE now recommends *Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning, Industry and Environment, 2020) to be referenced when preparing management plans.

Council requests that a construction flood management plan be developed, in addition to those identified in section 27.3.1.

As a component of the operational environmental management plan (section 27.3.2), Council requests ARTC develop and implement an emergency protocol that enables emergency services to safely cross the rail line (east-west) when the Mehi River Underpass is unpassable.

Council notes that design refinements proposed after project approval would not include significant change to the proposal. Council requests a clear definition of what constitutes a "significant change to the proposal".

Council is of the view amendments to the mitigation measures listed in section 27.6 may be warranted to address issues raised in this submission.

3 Conclusion

Moree Plains Shire Council is enthusiastic about the opportunities this significant Inland Rail project will bring, with positive contributions towards boosting the local and broader economy, producing safe and efficient freight transport, and increasing future development prospects for the region.

Council would also like to acknowledge the professionalism and dedication of the ARTC staff working on the N2NS Phase 2 project, and appreciates the open and ongoing consultation to date with the team.

Nevertheless, Council is of the view that there are additional investigations and considerations requiring further resolution, and these will play a critical role in determining the Project's success from an economic, environmental, sustainability and social impact standpoint.

Council welcomes the continuation of detailed and active consultation with ARTC and DPE, to ensure the matters are adequately taken into account as the Project progresses.

Thank you again for the opportunity to provide a submission on the Narrabri to North Star Phase 2 Inland Rail Project. If you have any queries regarding the matters raised, please don't hesitate to contact the Council on (02) 6757 3440.

APPENDIX A:

Approved text from Moree Local Emergency Management Committee for the N2NS Phase 2 EIS submission

Following ongoing discussions with Moree Plains Shire Council, the Moree Local Emergency Management Committee (LEMC) has indicated they would like surety that Emergency Vehicle Access is more carefully considered in the Inland Rail Narrabri to North Star Phase 2 project (N2NS Phase 2) in the event of sustained severance or delays in accessing East Moree, such as a train breaking down across both Alice Street and Bullus Drive level crossings.

The LEMC supports progress and growth for Moree and acknowledges the Inland Rail project enables greater economic development and growth, however community safety is a priority for emergency service agencies.

As the planning currently stands, there is a risk to the safety of community members living on the eastern side of the proposed rail corridor. There will be longer response times for emergency services vehicles to access this section of town when a train is passing through the Moree township. This inherent safety risk needs to be further examined as part of the N2NS Phase 2 project.

In Table 11-9, section 11.5.3 of the N2NS Phase 2 Environmental Impact Statement, a summary of mitigation measures against traffic and transport impacts are proposed. The LEMC notes only one mitigation measure is proposed for the impact to emergency services once the project is operational. Mitigation T-11 states:

> *A protocol between ARTC and emergency service providers would be developed to define appropriate and coordinated responses and communication in the event of an emergency during operations (e.g. access to real time information regarding crossing times and access to alternative crossing points).*

The LEMC would welcome more discussions on how this could work operationally and support for the technology to make this a reality for emergency service agencies.

LEMC would also like to see an underpass along the southern side of the Mehi River to access East Moree from the Moree CBD. This access could be potentially shorter in timeframe than current routes and provide our community with a safe outcome in the event of simultaneous access issues at the Alice Street and Bullus Drive level crossings.

Moree Plains Shire Council and LEMC anticipates construction work would be needed at both the Newell Highway and rail bridge on the south of the Mehi River for this solution, including:

- Stormwater drainage to mitigate water over the road
- Height of the road and rail bridges to ensure emergency vehicle access - minimum vertical clearance of 4.2 metres (TBC – pending further engagement and consultation with appropriate key stakeholders).
- Possible embankment design to futureproof the corridor for two lane two way access.
- Investigation into flood mitigation to improve access in the area during minor flood events.

In the event of major flooding making the proposed Mehi underpass unpassable, LEMC and Moree Plains Shire Council seeks understanding from the project and the Australian Rail Track Corporation if there are possible operational measures to limit train traffic or prioritise emergency access across level crossings during major flood events for the Moree township.

The Moree LEMC would welcome further discussions with the project team and the NSW Government on ensuring safer outcomes for the community with regards to this project.