20th December 2017

Ms Mary Garland
Team Leader
Transport Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Inland Rail – Narrabri to North Star EIS - SS1 7474

Dear Ms Garland,

Thank you for your letter of 13 November inviting a response to the above. This response represents a joint submission of Transport for NSW (TfNSW) and Roads & Maritime Services, collectively referred to as TfNSW.

The proposal involves upgrades to the existing rail line for a distance of 188 kilometres between Narrabri and North Star. The upgraded line will intersect with 86 existing road level crossings along the line of which 2 are State Roads (Newell Highway and Gwydir Highway). The proposed grade separated crossings at Jones Avenue in Moree and the replacement crossing on the Newell Highway to allow greater clearance for freight trains are supported in principal but would be subject to final Roads & Maritime Services approval.

Between 2001/02 and 2014/15 there were 122 collisions involving trains and road vehicles at level crossings throughout the State. In October 2017, a further assessment on the issue of road safety at level crossings was undertaken, which highlighted the risks associated with level crossings and heavy vehicles in particular. As the State's third busiest freight route it is essential that each level crossing is properly examined on an individual basis including the use of the Australian Level Crossing Assessment Model (ALCAM) and identified risks are mitigated. The individual identification of level crossing risk and mitigation during the current assessment phase is a key recommendation of this response.

Further work should be undertaken during this current assessment phase to examine the efficiency and safety implications of increased freight rail movements at key road crossings including additional grade separation points (road bridges over the Inland Railway) or quadrant gated crossings. These measures are likely to be effective in addressing any increased risk.

Annexure A contains more detail of the issues presented above, and recommendations for further work to be undertaken or where clarification is required.

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TfNSW would be pleased to discuss the issues raised directly with the proponent. To arrange a meeting please contact Mr Tim Dewey, Senior Transport Planner, Land Use Planning and Development on 0402 388 223.

Yours sincerely

Mark Ozinga
Principal Manager, Land Use Planning and Development

CD17/13301

Table 3.1 Roads Crossed by the Proposal and Table 4.1 Summary of preferred option for existing level crossings

Issue

Table 3.1 lists all the road crossings, road manager, surface type, shoulders and line marking. Table 4.1 contains a summary of the preferred crossing treatments but is not specific about which treatments apply to individual crossings.

Recommendation

- These tables should be combined and expanded to include existing and predicted future years traffic (2025 and 2040). The table should also include the Australian Level Crossings Assessment Model (ALCAM) index for existing and predicted future year (2025 and 2040) train frequencies. The safety features at each crossing should be listed. Any additional safety features that should be in place by 2025 to mitigate the increased risk from more frequent freight train movements should also be listed.

- The preferred options for level crossings at Table 4.1 should be expanded to include grade separation and quadrant gated crossings to expand the options available to mitigate the risks at level crossings.

- In developing the options the report must demonstrate how the proponent will evaluate and ensure the crossing can operate with acceptable risk to meet 2040 train crossing frequencies by evaluating the crossing against the RMS Railway Crossing Safety Series 2011, the documents making up the series are:

    - Plan: Establishing a railway crossing safety management plan (policy number PN239G)

    - Identify: The railway crossing safety hazard checklist (policy number PN241G)

    - Assess: Applying risk tolerance and risk assessment criteria to railway crossings (policy number PN238G)

    - Evaluate: Applying the railway crossing cause consequence bow tie models (policy number PN240G)

Annexure A – Review of Technical Report 1 Traffic, Transport and Access Assessment

Table 3.3.1 Road Counts from 2008

Issue

Section 3.3.1 uses traffic volumes from 2008 for that section of the Newell Highway within the Inland Rail Study Area. This is considered unacceptably old and could under estimate current traffic volumes, particularly the heavy vehicle composition. It is noted the proponent made an allowance for growth (3.3.4) although the rate applied or its justification is not discussed.

Recommendation

An addendum report should be developed with up to date traffic counts as the basis for an updated SIDRA analysis.

Section 3.5.2, Table 3.6 and Table 5.9 Level Crossings in Moree

Issue

In the Main Report (for example 1-4) the proponent advises the operational phase in 2040 will involve trains up to 1,800 metres long. However the proponent also discusses a possible future requirement for 3,600 metre trains.

Recommendation

Delay analysis should also be completed for 3,600 metre trains to assist TfNSW in long term planning for the Bullus Drive / Newell Highway Intersection and the Alice Street/Gwydir Highway Intersections.

Jones Avenue Bridge

Issue

The proponent will be required to undertake private financing and construction of the Jones Avenue Bridge on and over a road in which Roads and Maritime Services has a statutory interest. A formal agreement in the form of a Works Authorisation Deed (WAD) will be required between the proponent and Roads and Maritime Services prior to any works commencing within the Newell Highway road reserve.

Roads & Maritime Services approval is required. Specifically, the advice provided to GHD on 28 June and re-produced at Annexure B needs to be followed.

Recommendation

The Jones Avenue Bridge Project needs to needs to achieve the following:

- A minimum 6.5 metre clearance of the Newell Highway pavement.
- Bridge support structures are to be outside of the Newell Highway clear zone.

- The applicant needs to respond in writing to an earlier RMS request, that, whilst a load limit on the Jones Avenue Bridge is appropriate, the bridge needs to be built to accommodate larger vehicles operating on the Gwydir Highway.
- The proposal will eventually involve trains up to 3.6 kilometres in length, operating on this section of rail line. In the event that both Bullus Drive and the Gwydir Highway level crossings are blocked by 3.6km trains for an unreasonable period of time, an alternate route for heavy vehicles needs to be provided as part of this project.

Rail Bridge North of Bellata

Issue

The developer will be required to undertake private financing and construction of the Bellata Bridge on and over a road in which Roads and Maritime Services has a statutory interest. A formal agreement in the form of a Works Authorisation Deed (WAD) will be required between the developer and Roads and Maritime Services prior to any works commencing within the Newell Highway road reserve

Section at 3.5 of the Main Report stipulating that Roads Act 1993 approval would be required when interfacing with Roads & Maritime Services assets was noted.

Roads & Maritime Services approval to the above works is required.

The Newell Highway is sign posted 110km/h speed zone between Narrabri and Moree (section 6.3.5 of the EIS incorrectly quotes the speed zone as 100km/h). The road over rail bridges and associated Newell Highway realignment needs to be designed for a 120 km/h speed environment to adequately cater for traffic travelling at 110km/h). The design of the bridge and approaches is to be generally in accordance with the advice provided to GHD on 28 June 2016 and include 1.0m centre line (this advice is re-attached as Annexure B).

Recommendation

TfNSW wishes to reinforce that plans of the proposed road over rail bridge north of Bellata need to be submitted to TfNSW (Roads & Maritime Services Western Region) for approval.

In addition a Works Authorisation Deed (WAD) will be required between the proponent and Roads and Maritime Services prior to any works commencing within the Newell Highway road reserve.

Annexure A – Review of Technical Report 1 Traffic, Transport and Access Assessment

Crossing Loops

Issue

New crossing loops should be at least 60 metres distance from Newell Highway. This would allow for any future new road intersections with the highway (to eliminate any short stacking issues). The proposal should not involve encroachment within 60 metres of the highway.

The Waterloo Creek crossing loop appears to be within 60 metres of the Newell highway and so should be located on the opposite side of the existing line relative to the Newell Highway.

Recommendation

The distance between the Newell Highway and the crossing loops should be checked and verified by the proponent. If the distance is less than sixty metres the loops should be located on the opposite side of the railway line relative to the Newell Highway.

Camurra hairpin curve

Issue

The Camurra hairpin curve should be decommissioned and removed after the rail realignment. Removal of the hairpin would remove a structure near the highway and therefore a potential road hazard.

Recommendation

Proponent to implement as described above.

Annexure B – Prior advice to GHD 28/6/16

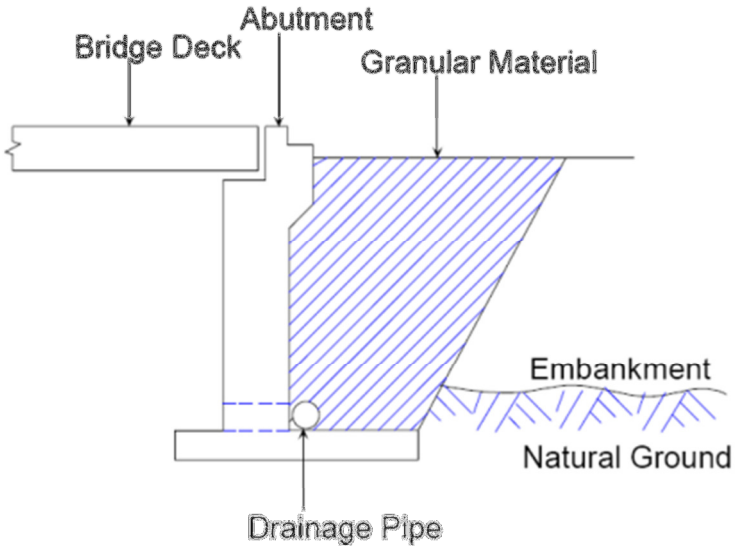
Dear XXXX

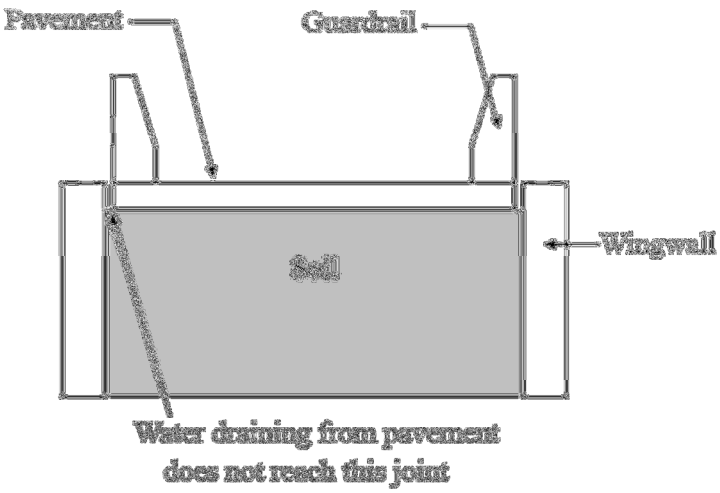
Thanks for your time on Friday. As promised, please see the following:

- RMS/ARTC responsibilities at existing bridge Newell Highway road over rail bridge, approximately 3kms north of Bellata

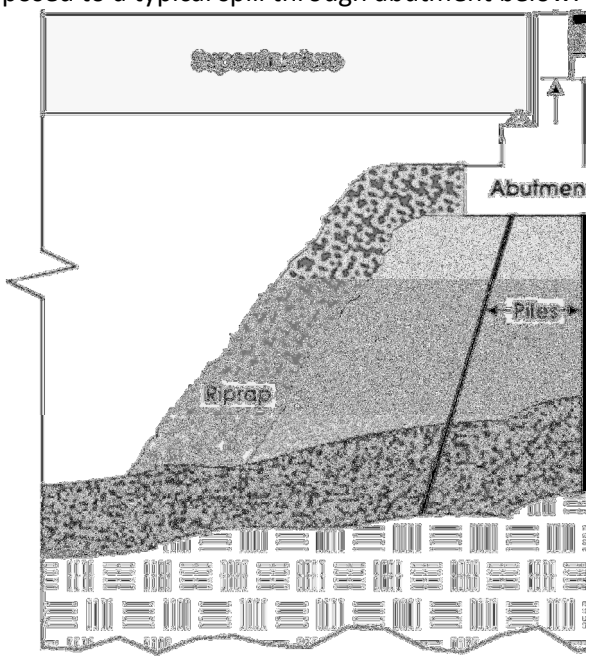
  RMS maintains the road pavement on approaches and the waring surface across the bridge deck, as well as the guard rail traffic barriers on the approaches to the bridge. The rail authority maintains the bridge structure itself (including piers, abutments, spans, deck concrete and bridge traffic barriers).

- Below is a typical boxed abutment and, for comparison, a spill through abutment. Note: RMS no longer uses spill through abutments:





As opposed to a typical spill through abutment below:



With regard to spill through abutments, a typical spill through abutment is covered with rock riprap (as shown above). In expansive soils (such as soils around Narrabri) the abutment fill beneath the riprap tends to settle / move over time. This movement causes the rip rap layer to settle, which exposes the abutment to erosion (particularly erosion under abutment headstocks). Erosion of the abutment leads to pavement failure on approach to the bridge.

- 2:1 verse 4:1 batters

  RMS is willing to consider batters steeper than 4:1. This would be subject to approval at the design stage. A few things to note are:
  1) The batters require adequate scour protection and drainage in place to prevent erosion of batters.
  2) There needs to be sufficient anchorage of guard rail posts into abutment fill.
  3) There is sufficient deflection area behind the guard rail posts to allow for an errant vehicle after hotting guard rail to recover.

- Minimum bridge over Newell Highway clearance

  Recently, RMS granted its concurrence to a rail over road bridge near Boggabri. The clearance there is 6.5 metres which is consistent with a nearby road over road bridge. Given the Newell Highway at Moree forms part of a route between Brisbane to coal mines in the Gunnedah, Mudgee and the Newcastle regions, RMS would be seeking a minimum clearance of 6.5m to maintain consistency along the route.