HOLDING REDLICH

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Minister for Planning and Public Spaces
Department of Planning, Industry and Environment
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Submitted via the Planning Portal

Dear Minister Stokes

Letter of objection to the EIS for State significant infrastructure application SSI-9487 Inland Rail – Narromine to Narrabri

1. We act for NSW Farmers and the Country Women's Association of NSW (**CWA**) in relation to part of the Inland Rail Project, being that part referred to as the Narromine to Narrabri Project (**N2N Project**) which is the subject of State significant infrastructure application SSI-9487 (**N2N SSI**).

2. The Australian Rail Track Corporation (**ARTC**) is the proponent for the N2N Project.

3. The Environmental Impact Statement (**EIS**) for the N2N SSI was placed on exhibition on 8 December 2020. The EIS has been prepared in response to the Secretary's Environmental Assessment Requirements dated 9 September 2020 (**SEARs**).

4. The purpose of this letter is to outline our clients' vehement objections to the EIS for the N2N SSI, including on the basis that:

   (a) the **flooding and hydrology** modelling used in the EIS is grossly inadequate and does not reflect the lived experiences of the landowners in the area, meaning that there is a significant threat of serious and irreversible environmental damage, as well as risks to people and property arising from the N2N project;

   (b) the **groundwater** assessment is perfunctory at best and is inadequate in demonstrating that critical long-terms impacts on groundwater resources resulting from drawdown will not occur;

   (c) insufficient consideration has been paid to the impacts of the proposal on **soils and erosion**, despite the fact that the proposal site is situated in prime agricultural farm land that is highly prized for its productivity;

   (d) the failure to conduct a proper **cost benefit analysis** in selecting the proposed route alignment, in favour of a misleading multi-criteria analysis which favours time saving over the provision of tangible and enduring benefits to regional communities;

(e) the **ecological assessment** is deficient and does not adequately identify the scope of the impacts of the proposal on biodiversity, despite the huge amounts of clearing of native vegetation that is proposed in the N2N SSI;

(f) the **noise and vibration assessments** for both the construction and operation of the N2N Project are significantly flawed in that they fail to identify the actual impacts by reference to the existing conditions, they do not adequately consider the impacts on sleep disturbance, and they fail to commit to appropriate attenuation treatments to mitigate acoustic impacts at sensitive receiver locations;

(g) the failure to carry out a proper **visual impact assessment** by unreasonably restricting the scope of the assessment, not providing an appropriate number of photomontages and by drawing conclusions based on unfounded assertions;

(h) the refusal to meaningfully address **access, fragmentation and severance** issues and opportunities to avoid these impacts, thereby causing significant adverse impacts to existing farming operations and rendering some businesses unviable;

(i) the failure to meaningfully consider the impact of the rail line on the **farming capacity** of the district and **existing agricultural land uses** leading to enduring impacts on the productivity of an entire region in perpetuity;

(j) the failure to carry out a fulsome quantitative assessment of the **air quality impacts** arising from the operation of the N2N Project, including assessment of a range of potential pollutants;

(k) the proponent's misguided approach to **compulsory acquisition** and the nature of the impacts that can be appropriately compensated and those that cannot; and

(l) the inadequacy of the proponent's proposed **fencing standards** which has practical implications in relation to the impacts of the proposal on existing land uses.

5. Each of these objections is made in more detail below.

6. This letter of objection is made on behalf of NSW Farmers and the CWA and their members. In particular, this objection is made on behalf of those members listed in **Attachment A** who form part of a collective in relation to the N2N SSI.

7. At the outset, we wish to make clear that NSW Farmers and the CWA do not object to the Inland Rail Project itself and would support a version of the N2N Project which appropriately avoided, mitigated and managed the impacts of the project and provided key benefits to the communities along the proposed alignment. However, NSW Farmers and the CWA have serious and enduring concerns regarding the quality, accuracy and depth of the analysis which has been used as the basis of the EIS for the N2N SSI.

8. Until such time as the proponent provides a more thorough and detailed assessment, and has engaged with the issues raised in this objection, then NSW Farmers and the CWA consider that it is only appropriate that the Minister proceed by:

(a) refusing consent to the N2N SSI; or

(b) requiring the ARTC to withdraw and substantially amend their application (with the amended application to be the subject of further public exhibition) before any determination is made.

Duties of the proponent and the consent authority in the application of ecologically sustainable development and the precautionary principle

9. The power to determine an application in respect of State significant infrastructure is contained in s 5.19 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**).

10. In determining the N2N SSI, the Minister is to have regard to the objects in s 1.3 of the EP&A Act, including object (b) which states that the object of the EP&A Act is to facilitate ecologically sustainable development (**ESD**) by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.

11. Object (e) is also particularly relevant in the context of the N2N Project and refers to the object to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.

12. The reference to ESD in object (b) adopts the definition of ESD found in s 6(2) of the *Protection of the Environmental Administration Act 1991*, namely that ESD requires the effective integration of economic and environmental consideration in decision-making processes and that ESD can be achieved through the implementation of:

    (a) the precautionary principle;

    (b) inter-generational equity;

    (c) conservation of biological diversity and ecological integrity; and

    (d) improved valuation, pricing and incentive mechanisms.

13. The precautionary principle requires that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.[1] In applying the precautionary principle, decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and an assessment of the risk-weighted consequences of various options.[2]

14. The application of the precautionary principle was given significant judicial consideration in *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 113. Here, Chief Justice Preston found that the precautionary principle will apply where two conditions precedent are triggered:

    (a) there is a threat of serious and irreversible environmental damage; and

    (b) there is scientific uncertainty as to the nature and scope of the threat of environmental damage.[3]

15. Once both of these thresholds are satisfied, the precautionary principle will be activated, and there is a shift in the burden of proof. At this point, the decision maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain, but is a reality. The

[1] *Protection of the Environment Administration Act 1991*, s 6(2)(a).

[2] *Protection of the Environment Administration Act 1991*, s 6(2)(a).

[3] *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 113 per Preston CJ at [128].

burden of then showing that this threat does not in fact exist, or is negligible, then reverts to the proponent.[4]

16. In our view, the EIS for the N2N Project is so deficient in its rigour that the Minister, as consent authority, cannot be reasonably satisfied that there is not a serious and/or irreversible threat to the environment, as well as human life and property, as a result of the construction and operation of the proposed development.

17. As this letter will explain, the construction of the rail line (as proposed in the EIS) poses numerous significant and enduring environmental impacts that have the potential to irreversibly change the shape of the landscape, destroy the unique environmental features of the locality including the vertosol soils and BSAL which are supremely valuable as prized agricultural land, and in the process permanently change the lives and businesses of the communities in the surrounding areas.

18. We would strongly urge the Minister to take these impacts seriously and require the ARTC, as the proponent, to provide sufficiently rigorous environmental assessment so that the Minister and the community can be sure that these impacts can be avoided, managed and/or mitigated to the greatest extent possible.

Grossly inadequate community participation

19. Community participation is a core component of any major project.

20. This much is stated on the Major Projects website:

> *Community participation is an essential part of the assessment of all State significant projects and is integral to improving the design of projects, facilitating ecologically sustainable development, informing decision-making and building confidence in the planning system.*[5]

21. It is also admitted by the ARTC in Chapter A4 Consultation of the EIS which states that:

> *Effective communication and stakeholder engagement are fundamental to reducing risk, optimising route alignment, minimising social and environmental impacts, securing statutory approvals, and gaining and maintaining the social licence to operate.*[6]

22. Notwithstanding this, we are instructed that the extent of community engagement undertaken by the ARTC in relation to the N2N Project has been appalling. This is because firstly, there has been an express reluctance on the part of the ARTC to produce documents and disclose material which would allow landowners, as well as stakeholders such as NSW Farmers and the CWA, to consider and respond to concerns regarding the impacts of the N2N Project. This is the antithesis of genuine community engagement. We provide two concrete examples below based on our discussions with representative landholders.

23. Firstly, the choice of the easterly alignment out of Narromine. From the 2010 Inland Rail Alignment Study onward, the preferred Narromine to Burroway alignment left existing rail west of

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[4] *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 113 per Preston CJ at [150].

[5] https://www.planningportal.nsw.gov.au/major-projects/community/community-participation-assessment (accessed 25 January 2021).

[6] EIS Chapter A4 Consultation, Part A4.1.1, page A4-1.

Narromine township heading northwards to Burroway. This alignment that was ratified by the 2015 Inland Rail Implementation Group Report (I**RIG**) and Business Case. Prior that point, an alignment to the east through the Backwater Cowal landscape had been considered and discounted because of concerns about flooding and land use impacts. In March 2017, landholders to the east of Narromine were notified by letterbox drop that properties in the area were being considered as part of an alternative study area. After the December 2017 alignment announcement changed the Narromine route to the east, landholders found out that the ARTC had been considering alternative alignments east of Narromine as early as mid-2016 and a May 2017 MCA workshop had recommended to move the alignment east of Narromine. Despite this, the ARTC informed landholders in public forums and private meetings as late as August 2017 that no easterly alignment was being considered and negotiations were progressing with western landholders.

24. Also, from speaking with landowners along the proposed alignment, we understand that there are significant differences in the amount of information being disclosed by the ARTC to different landowners. Some landowners have been provided with access to specific plans showing the location of the alignment on their properties, some are only being shown corridors. Even during the period of the exhibition of the EIS for this project, we are aware that a landholder has been provided with plans reflecting amended alignments that are different from the ones currently on exhibition. Further, almost no landowners have been given specific particulars regarding the design of the infrastructure proposed to be constructed on their land.

25. Similarly, unlike with other parts of the Inland Rail Project, the ARTC has refused to produce and disclose the reference designs for the N2N Project. This failure to exhibit the reference designs means that there is simply no objective information by which landowners and stakeholders can assess whether the claims made by the ARTC in the EIS regarding the acceptability of the impacts of the N2N Project are fair and accurate. We can only assume that the ARTC's refusal to produce the reference designs is an attempt to stymie objections by withholding key information that could inform independent assessment.

26. In our view, meaningful community engagement is typified by transparent discussions whereby landowner/stakeholder concerns are listened to and options are proposed as to how these impacts can be addressed. In the context of the N2N Project, it would include discussions of:

    (a) the location of the proposed alignment and why this alignment has the least adverse environmental, social and economic impacts (as per Item 2 of the SEARs); and

    (b) how the design of the infrastructure minimises adverse environmental impacts, including in relation to flooding and hydrology, scouring and erosion, noise and vibration, and biodiversity (as per Items 6, 9 and 15 of the SEARs).

27. However, contrary to this, we understand that the ARTC has simply been holding meetings where they are given a platform to restate the assertions contained in the EIS, without actually engaging with the matters raised by the affected landowners or key stakeholders. Community participation without genuine engagement cannot be said to be adequate, particularly given the scale of the N2N Project and the serious environmental impacts that will eventuate should these matters not be effectively considered at the pre-approval stage.

28. At Part A4.3.2 of Chapter A4 of the EIS, the ARTC state that the reference design process has evolved over a period of two and a half years and that consultation has been carried out with affected stakeholders to identify key potential impacts at an early stage, and that this has resulted

in a number of design changes being made to mitigate potentially significant impacts.[7] We question how these statements can be true when the reference designs have not been provided to affected landowners or exhibited as part of the EIS. Therefore, any design changes that have been made cannot be said to have resulted from community engagement. Rather, the design changes (which have not been articulated) can only have occurred by unilateral decision of the ARTC without any transparent discussions with affected parties.

29. We therefore seriously question the credibility of the claims regarding the adequacy of the community engagement conducted by the ARTC and ask that the Minister consider this when assessing whether the N2N SSI has met the minimum requirements of the SEARs.

Objection 1: Inadequate flooding and hydrology assessment and concerns regarding groundwater

30. The study area for the N2N Project is located within 3 major water catchments, including the Macquarie-Bogan River, the Castlereagh River and the Namoi River. The proposed alignment also crosses these major rivers, as well as approximately 44 watercourses and other intermittent unnamed tributaries.[8]

31. The N2N SSI proposes for the rail alignment to follow a south easterly route out of Narromine where it crosses the Macquarie River, and then follow a generally north easterly direction to Curban where it crosses the Castlereagh River, and then in a steep north easterly direction across numerous watercourses to the north of Baradine (between Baradine and Kenebri) where it enters the Pilliga East State Forest again crossing numerous watercourses, until it eventually approaches Narrabri crossing Narrabri Creek and the Namoi River to the immediate west of Narrabri.

32. Given the relationship between the N2N Project and these significant existing rivers, watercourses and other tributaries, it is clear that flooding and hydrology impacts will need to be carefully considered and appropriately managed if the N2N Project (and in fact, the Inland Rail Project as a whole) is to succeed. This is because not only do flooding and hydrology impacts have the potential to adversely affect landholders in the region, but it also poses significant and costly risks to the rail infrastructure itself if the assessment and modelling has not been undertaken with the appropriate degree of care, skill and diligence.

33. This is why it is imperative that the Minister be satisfied that the impacts of the N2N Project on flooding and hydrology are acceptable.

34. Item 9 of the SEARs requires that:

    (a) the project minimises adverse impacts on property, public safety and the environment resulting from alteration of the water flow characteristics of watercourses and overland flowpaths; and

    (b) the construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, geomorphological impacts or dam failure.

35. In our view, the EIS is negligently deficient in this regard, and given the particularly sensitive environmental context of the development, significant further investigation and independent

[7] EIS Chapter A4 Consultation, Part A4.3.2, page A4-7.

[8] EIS Chapter A2 Location, Part A2.3.1, page A2-5.

assessment needs to be undertaken to ensure that the flooding and hydrology impacts are effectively managed.

36. To that end, we have engaged a highly experienced consultant hydrologist, Mr Greg Roads of WRM Water & Environment, to undertake an independent peer review into the flooding and hydrology analysis in the EIS. The NSW Farmers and the CWA seek to rely on this report prepared by Mr Roads for the purpose of this objection, and note that the Department has agreed to accept submission of that report 2 weeks from the date of the submission of this letter.

37. In addition to this, we also wish to raise the following key issues with the flooding and hydrology analysis used in the EIS which have been identified by NSW Farmers and CWA members, many of whom own properties that will be directly impacted by the proposed alignment.

Underestimation of flows in key areas – Backwater Cowal and Warrumbungles Watershed

38. Many NSW Farmers and CWA members have expressed grave concerns regarding the N2N Project and the explanations/justifications put forward in the EIS regarding the flooding and hydrology impacts of the proposal.

39. This is because many of the statements made in the EIS do not accord with the lived experience of the landowners on the ground, many of whom have been on the land for generations and are very familiar with the behaviour of flows in the region and how this has changed over time.

40. Having spoken with numerous landowners along the N2N alignment, we understand that significant flooding is experienced in the following key areas:

    (a) to the east of Narromine near Webbs Siding and Backwater Cowal (**Backwater Cowal**). We understand that this area is an important relief valve during large flow events and the concern here is that the proposed alignment will act as a semi-impermeable barrier and prevent the waters escaping to the west in accordance with natural flow patterns; and

    (b) to the west of the Warrumbungle Ranges where water flows down from the Warrumbungle Ranges in a westerly direction towards the Castlereagh River (by reference to the alignment, from the Castlereagh River Bridge north to the Baradine Crossing Loop). We have termed this area the Warrumbungles Watershed (**Warrumbungles Watershed**). Landowners in this area report that relatively short duration but intense rainfall events in the Warrumbungle Ranges give rise to what they describe as a sheet of water between 40 and 60cm deep moving relatively quickly over the land. This water has a tendency to only pool for a short duration as it moves to the west to the Castlereagh River or otherwise soaks away into the subsurface soil.

41. The NSW Farmers and CWA members are concerned that the flooding and hydrology modelling for the N2N Project significantly underestimates the amount of water in these areas. In particular, the landowners express concerns that the ARTC have failed to acknowledge the significance of the flows in the Warrumbungles Watershed which acts as a floodplain environment.

42. To assist with the Minister's consideration of this objection, we have prepared an aide memoire which includes photographs taken by various landowners in the Warrumbungles Watershed of flood events on their land and we have indicated where on the proposed alignment these properties are located. I am instructed that these photographs have been provided to the ARTC on numerous occasions. This aide memoire is included at **Attachment B** to this objection.

43. We consider that the first-hand knowledge and lived experience of residents should be given considerable weight when assessing the adequacy, or otherwise, of the current flooding and hydrology impact assessment undertaken by the ARTC.

44. In our view, the ARTC should be required, at a minimum, to address why such significant discrepancies exist regarding the modelling and actual flow rates in Backwater Cowal and the Warrumbungles Watershed, and justify why their desktop analysis is to be preferred over the real experiences of those in the community.

45. We understand that this will be an issue considered by Mr Roads in his peer review and we rely on his expertise which we consider will validate landowner experience.

Durability and safety

46. We know from the economic analysis that the construction of the rail line at what the ARTC says is the 1% AEP, and the desire to build across flood prone land on the basis of levies and culverts rather than bridges and viaducts, is largely driven by a desire on the part of the ARTC to reduce the capital costs of the construction of the rail line and to use money from other sources to repair the rail line when the rain comes and damages the track.

47. In this regard, many NSW Farmers and CWA members have expressed concerns regarding the adequacy of the approach to impact mitigation and whether the proposed design and location of the culverts will be able to manage the anticipated volumes and velocities of flows, particularly in areas around Backwater Cowal and the Warrumbungles Watershed.

48. In some cases, the underestimation of flows means that the rail corridor has been situated in a highly problematic environment, despite the fact that moving the corridor would result in significant improvements. We say that this is particularly the case around Backwater Cowal where the location of the proposed alignment is not responsive at all to the environmental conditions in this area. This will be discussed in detail in Mr Roads' peer review and we rely on his recommendations in this regard.

49. In other places, such as in the Warrumbungles Watershed, the underestimation of flows means that the N2N Project does not provide sufficient culvert banks or bridging, or have placed those structures in the wrong location. This significantly increases the likelihood that there will be major changes to the distribution of flows on the downstream side of the rail line. This not only has environmental implications of the movements and distribution flows in the region, but also has the potential to increase flow velocities resulting in greater scouring and erosion impacts as discussed below in Objection 2.

50. Further to this, we understand that where culverts are proposed to be used, the N2N SSI only calls for the culverts to be designed to the 2% AEP.[9] Although, given that the reference designs for the N2N Project have not been made publicly available, we are not able to confirm definitively that this is the case. Such design parameters are said by the ARTC to be justified because the ARTC have a policy of clearing waterways blocked due to debris or rubbish greater than 20% within 28 days.[10] We know from experience from communities like those around Bogan Gate that such maintenance does not occur. We also know from a variety of Australian Transport Safety Bureau reports looking at derailments on the freight network that derailments are not uncommon.[11]

[9] General Appendix to ARTC Track and Civil Code of Practice ETG-10-01 – Flooding.

[10] General Appendix to ARTC Track and Civil Code of Practice ETG-10-01 – Flooding.

[11] ASTB Transport Safety Report - Derailment of Train 7SP3 Roto, 4 March 2012; ASTB Transport Safety Report - Derailment of freight train 3MP9, 10 April 2014.

From this information, we understand that the likely course of events is that: (1) there will be a rainfall event, (2) the culverts will block, and (3) the water will scour the track stripping away the ballast and rendering the track unserviceable until repairs are carried out.[12]

51. Additionally, we note that due to the nature of the farming operations in the area (principally dry land cropping and grazing), there is also a lot of stubble that moves across the water during flow events. This stubble is visibly present on the land currently, where it has left a debris line across the land evidencing the extent of recent flood events. The amount of stubble in areas along the proposed N2N alignment has raised further concerns that the ARTC's modelling does not sufficiently account for the frequency and extent of blockages where culverts, rather than bridges, are being proposed. This is another example of where landowners have been disadvantaged by the ARTC's refusal to exhibit the reference designs which would indicate the proposed design of the culverts and independent advice could be sought regarding the adequacy (or we anticipate, inadequacy) of this design.

52. On this basis, we conclude that it is likely that during the operation of Inland Rail, the culverts proposed as part of the N2N SSI will fail and damage will occur that could result in a derailment, as well as significant damage to large parcels of productive farmland.

53. Clearly such an approach to the design of the rail line on land which is known to be flood prone is unacceptable and inconsistent with the application of the precautionary principle. Building infrastructure that is likely to fail simply cannot and should not be accepted as satisfactory by the Minister.

Risk of unacceptable groundwater impacts

54. As we understand it, the geology of the region is such that there are relatively shallow aquifers that follow the rivers and floodplains. Part of the proposed N2N alignment is also subject to the Great Artesian Basin (**GAB**).

55. It is well understood that there has been a history of over extraction of both shallow aquifers and the GAB. This is why embargoes were placed on extraction under the *Water Act 1912* prior to those water sources becoming subject to the *Water Management Act 2000*.

56. With regard to the N2N Project, the EIS provides that an estimated 4,635 mega litres (**ML**) of groundwater is required for construction, most of which is proposed to be sourced from deep groundwater bores via 12 borefields which would be installed at a spacing of about 25km along the alignment.[13] These bores are said to target groundwater from below the GAB, as the GAB and overlying shallow groundwater system are either close to being, or are already, fully allocated.[14]

57. Having spoken with many landowners along the alignment, we understand that there are significant concerns regarding the likelihood of the ARTC's proposed groundwater extraction resulting in a reduction of the groundwater level which will impact many existing bores. The landholders understand that groundwater resources in this area are already highly constrained and the concern is that the extraction of bore water will lead to significant drawdowns rendering existing bores used for stock and domestic redundant.

[12] ASTB Transport Safety Report - Derailment of Train 7SP3 Roto, 4 March 2012; ASTB Transport Safety Report - Derailment of freight train 3MP9, 10 April 2014.

[13] Technical Report 4 Groundwater Assessment prepared by JacobsGHD, page i.

[14] EIS Executive Summary, page 6.

58. This risk of drawdown is identified in the Technical Report 4 Groundwater Assessment (**Groundwater Assessment**) as being a potential impact of the N2N Project during construction. While the Groundwater Assessment concludes that the risks are low, provided the recommended mitigation measures are employed, the community remain concerned that the analysis is not sufficiently rigorous.

59. Given the fact that groundwater resources in this region are already over allocated, as is admitted in the EIS, we would suggest that the concerns raised by landowners trigger the application of the precautionary principle and the Minister must conduct a thorough investigation into the claims made in the EIS and the Groundwater Assessment as to the acceptable impacts on groundwater prior to granting approval to the N2N SSI.

60. Additionally, we note that the ARTC have raised on numerous occasions the potential for the bores to be retained following the construction of the N2N Project and that, therefore, the construction of the bores presents some long-term benefit to the local community. This position is also reflected in the Groundwater Assessment.[15] We have concerns regarding the accuracy of this statement from a legal perspective, noting that the construction of bores for the purpose of Inland Rail may not be capable of being transferred and used by local councils and members of the community by operation of relevant planning laws. We therefore suggest that this claim of ancillary community benefit should be disregarded in the assessment of the N2N SSI.

Objection 2: Unacceptable impact on soils and erosion

61. The soil make up along the proposed N2N alignment is diverse and covers red and red-brown earths as well as large areas of highly productive cracking clay vertosols.

62. Clay vertosols are recognised as being highly valuable due to their benefits for agricultural development.[16]

63. Similar soils also appear on the Condamine river floodplain in Queensland where Dr Rob Loch, a certified professional soil scientist, identified that soils of this kind behave uniquely when wetted and dried and are highly erodible:

> *When wetted, smectite clays swell, and when dried, they shrink and crack. Surface soil, where wetting and drying is greatest, tends to fragment into small aggregates, creating a loose and easily-detached layer at the soil surface by a process known as self mulching.*
>
> *Much of the volume change with water content is 3-dimensional, so the soil surface rises and falls with wetting and drying, making these soils difficult foundations…*
>
> *Cracking clay soils typically erode as small aggregates, that – because of swelling when wetted – are of particularly low density, and extremely easily transported by overland flows. Consequently, they are among the most erodible agricultural soils in the world.*[17]

[15] Technical Report 4 Groundwater Assessment prepared by JacobsGHD, page ii.

[16] Carey, B.W., Stone, B., Normal, P.L., and Shilton, P. (2015) Soil Conversation Guidelines for Queensland, Department of Science, Information Technology and Innovation, Brisbane.

[17] Dr Rob Loch, Submission 33 on the Management of the Inland Rail Project by the Australian Trail Track Corporation and the Commonwealth Government: ARTC flood plain modelling and design for crossing the Condamine River floodplain between Millmerran and Brookstead, 12 November 2019, p 3.

64. This much is acknowledged in Chapter B4 Soils and Contamination of the EIS which states that cracking clays (vertosols) are "*characterised by deep, highly-plasticity clays that crack significantly when dry and swell when wet*" and are commonly found between the Oxley Highway to Baradine, and around Narrabri.[18]

65. It is therefore noteworthy that while the EIS recognises that highly erodible and dispersive soils are "*present in the majority of the proposal site*",[19] it fails to consider the specific impacts of the N2N Project on these highly erodible soils, including whether the construction of the rail line will impact upon the long term productivity of this land.

66. In fact conversely, the EIS asserts that the operation of the N2N Project "*is not likely to result in any significant impacts on soils, topography or geology*" and that "*the risk of soil erosion during operation would be minimal*".[20]

67. This, in our view, is extremely concerning and reflects a significant lack of understanding on the part of the ARTC, and should be rejected by the Minister as being without foundation.

68. As discussed above in relation to Objection 1, the N2N Project is proposed to be constructed in areas known to be highly susceptible to significant flood events where large expanses of water move down from the Warrumbungle Ranges and head west across the Warrumbungles Watershed to the Castlereagh River.

69. As we understand it, the N2N SSI proposes to erect a number of culvert banks in this area to allow for flows to move to the west of the alignment towards the Castlereagh River. This reliance on culverts, with a notable lack of appropriate bridging, will concentrate flows and increase the velocity of flood waters along the elevated rail line embankment, causing extensive scouring, erosion and gullying of the landscape. This is particularly the case where the number of culverts required has been underestimated, the location of the culverts is inappropriate and not reflective of the location of natural flows, and/or the size of the culverts are not sufficient and does not account for blockage by stubble etc. Each of these factors contribute to soil and erosion impacts because they change both the distribution and velocity of flows.

70. The use of culverts will also create what is known as 'shadowing' in small and mid-sized flood events, which is where lines of concentrated flows discharged from culverts across long distances gradually remove soil and overtime, create deep pronounced flow lines that become more prone to accelerated erosion.

71. Evidence of damage from scouring and gullying caused by flow concentrations is already evident on land along the proposed alignment. For example, a levy bank was erected on a property in Tonderburine which had the result of redirecting and increasing the velocity of flows onto neighbouring land resulting in a significant gully being carved into the land which was approximately 3.5m deep and 6m wide. Photographs of this gully are included at **Attachment C** to this objection.

72. These photos clearly demonstrate that the impacts of the N2N Project on soils and erosion will be significant, particularly if the N2N Project is permitted to proceed as currently designed. This is because the construction of significant earthen embankments on this land, and a reliance on culverts, will redirect and increase the velocity of flows.

[18] EIS Chapter B4 Soils and Contamination, Part B4.2.2, page B4-7.

[19] EIS Chapter B4 Soils and Contamination, Part B4.3.1, page B4-12.

[20] EIS Chapter B4 Soils and Contamination, Part B4.4.1, page B4-14.

73. The failure to acknowledge and respond to such a key impact of the proposal is clear evidence that the ARTC has failed to adequately meet requirement 4 in Item 12 of the SEARs which requires the proponent to assess erosion risks to ensure that the environmental values of the land, including soils, subsoils and landforms, are protected.

74. This again, in our view, triggers the application of the precautionary principle and the ARTC should be required to demonstrate why unacceptable impacts on soils from erosion and scour will not occur. In the absence of this information, the N2N SSI must be refused.

Objection 3: Failure to carry out a proper cost benefit analysis

75. Item 2 of the SEARs requires the proponent to sufficiently particularise the proposal to enable:

> *…a clear understanding that the project has been developed through an iterative process of impact identification and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including its cumulative impact.*

76. Compliance with Item 2 of the SEARs requires the EIS to provide an analysis of the feasible alternatives to the project, describe how these alternatives were analysed in the selection process, and how the project has been designed to avoid or minimise likely adverse impacts.[21]

77. In our view, the analysis provided by the ARTC in the EIS and the Technical Report 14 Economic Assessment prepared by KPMG (**Economic Assessment**) falls far short of being sufficiently rigorous to satisfy these requirements.

78. For the purpose of this objection, we have sought advice from a highly qualified economist with significant experience in Australian heavy rail and other large infrastructure projects. NSW Farmers and the CWA seek to rely on this advice for the purpose of this objection, a copy of which is included at **Attachment D**. The opinion expressed in this advice is explored below.

Assessment of the costs/benefits of the Inland Rail Project

79. The current budget for the Inland Rail Project is $14.5 billion. This is far in excess of the initial capital cost (nominal, undiscounted) which was used in May 2016 by Infrastructure Australia for the purpose of the Project Business Case Evaluation which was $9.89 billion (P50) and $10.66 billion (P90).

80. Even prior to the recent announcement of the budget increase in December 2020, the Inland Rail Project was already a project with a Net Present Value (**NPV**) of zero and (assuming a budget of $10 billion) a Benefit Cost Ratio (**BCR**) of 1.02.

81. This is significant because having a positive NPV (NPV > 0.00) and a BCR greater than 1 (BCR > 1.00) are both indicative of a project that is in the public interest following a comparison of all discounted total costs, benefits, cumulative impacts, and their unbiased mean-centered expected values properly monetised over the entire life of the project. In contrast, a negative or almost zero NPV or a BCR of statistically around one or less clearly identifies that there are superior alternative projects and better uses of public funds.

[21] Secretary's Environmental Assessment Requirements, Item 2, Requirements (e), (f), (g), (h), (i) and (j).

82. Now that the budget has been increased by an additional $5.5 billion, the real BCR for the project will drop below 1.00 (noting that the claimed BCR of 1.02 was already inflated), unless the N2N Project can be reframed to provide significant tangible benefits.

83. Also, the recent announcement suggested that the additional $5.5 billion allocated to the Inland Rail Project was for "*project enhancements*". To date, there has been no information made publicly available as to what those project enhancements involve and how the benefits were derived. We are therefore sceptical whether these supposed 'enhancements' are real and would suggest that perhaps the additional funding may have been required to address some of the adverse impacts from Inland Rail which are already coming to light.

Use of multi-criteria analysis in route selection

84. The advice from the economist confirms that the ARTC has not undertaken a proper cost benefit analysis (**CBA**) for the N2N Project. Rather, the ARTC have engaged in optimism bias and relied on a multi-criteria analysis (**MCA**) that has enabled them to ignore costs, important assumptions and unbiased economic modelling in order to generate skewed results.

85. The use of an MCA over a CBA is noteworthy because an MCA compares and sums metrics in different, incompatible dimensions and is a form of 'non-monetary' valuation. The resulting score produced in an MCA has no real units and no meaning beyond the specific piece of analysis. Even the meaning within the analysis is questionable due to the subjectivity and lack of transparency around conversion, scores and weights.

86. The ARTC's own documents which detail the route selection history record their understanding that delivering the Inland Rail Service Offering "*requires a route that is flat, safe and as fast as possible*"[22] and therefore, "*adopting a route that is as direct as possible has been a critical consideration in route selection"* because it drives the delivery of the *"key economic benefits that underpin the Inland Rail Business Case*".[23]

87. The importance of delivering a service that provides a sub-24 hour travel time from port to port has been the central focus of the Inland Rail Project, to the exclusion of almost all other factors. This is why the ARTC has utilised an MCA to justify route selection and not a CBA, because it essentially enables it to 'stack the deck' so that the fastest route will always be the most preferable.

88. We note that a CBA is accepted as being best practice by Infrastructure Australia and NSW Treasury, with an MCA being understood as being a sub-optimal methodology in comparison.

89. To date, the only explanation that has been provided by the ARTC regarding why they have elected not to undertake a CBA for the N2N Project in accordance with accepted best practice principles is a throw-away line in the Economic Assessment which states that:

> *A proposal-specific CBA has not been undertaken as the results will not capture the full economic impact that is expected to be delivered upon completion of the Inland Rail Program.*

90. This statement is reflective of a deliberate intention by the ARTC to focus on the overstated benefits of the Inland Rail Project as a whole, without consideration of the specific risks and costs. This includes, for example, an unwillingness to acknowledge risks associated with changes in demand, which might lead to a reduction in freight flows in the Melbourne-Brisbane corridor, or

[22] Inland Rail, Melbourne to Brisbane: Inland Rail Route History 2006-2019, page 16.

[23] Inland Rail, Melbourne to Brisbane: Inland Rail Route History 2006-2019, page 21.

increases in project costs beyond the estimates included in the business case which could significantly impact the final BCR.

91. The problem with the focus on the service offering is that the design of the N2N Project in fact results in very few benefits (if any) to the regional communities who will bear the burden of the infrastructure, because providing local benefits is not a consideration weighted highly in the MCA.

Consideration of the alternative alignment to Coonamble using the existing track

92. To date, no robust economic analysis has been undertaken of an alternative proposal that would follow the existing rail line to Coonamble.

93. The reason for this is that the focus of the ARTC has always been on identifying opportunities to gain time as against the service offering. This has the consequence that anything that increases time will not be considered, even if the resultant benefits could, in a cost/benefit sense, offset any additional travel time.

94. As we understand it, there are numerous benefits that would arise from augmenting the existing rail line to Coonamble, rather than principally relying on new greenfield track. These include, but are not limited to:

    (a) Benefit 1: Less land needs to be acquired, meaning that the impacts associated with severance are also less significant. This is because the farms that already adjoin the existing alignment have been historically developed with this limitation in mind;

    (b) Benefit 2: Coonamble already has significant infrastructure in and around the vicinity of the existing rail line including large depots, silos and other storage infrastructure, and Coonamble Shire Council has already been investing in the maintenance and growth of this infrastructure. As opposed to Curban where much of the existing infrastructure has been decommissioned for some time. For example, we understand that the Curban Silos have been closed somewhere between 6-8 years and did not even reopen last harvest, which was one of the biggest harvests in recent years;

    (c) Benefit 3: The location of the alignment to the west of the Castlereagh River up to Coonamble would also avoid the crossing of the Castlereagh River at Curban which we understand may have significant flooding and hydrology issues; and

    (d) Benefit 4: The existing rail line has already been earmarked for significant upgrade works as part the Country Lines Improvement Program. This means that some of the funding for this part of the Project could be redirected towards this alignment, rather than the proposed alignment, thereby reducing costs.

95. Conversely, the principle disadvantages of greater utilisation of the existing track to Coonamble are said by the ARTC to be as follows:

    (a) the route and the travel time are said to be longer. The ARTC claim that the extended route would jeopardise the operational business case requiring sub-24 hour travel time from end to end. However, as discussed above at paragraph [93], if a proper CBA were undertaken for the N2N Project, then the costs of an extended travel time could be offset by the benefits of the proposal. This argument also does not account for potential time saving that could be generated on other areas of the Inland Rail route;

    (b) the ARTC claim that the current alignment was relatively flood-free and could capture potential fill material for construction. We note that we have serious concerns regarding

the accuracy of this assertion regarding the nature of the flooding and hydrology conditions of the proposed N2N alignment which are outlined in detail in relation to Objection 1; and

(c) the ARTC claim that a route travelling to Coonamble is longer and therefore more costly in the sense of time, dollars, and harm to the service offering. Although, no economic analysis has been undertaken or disclosed which would support this conclusion.

96. Overall, greater use of the existing Dubbo to Coonamble rail line presents an opportunity to provide tangible benefits to this regional community, with few disadvantages.

Consideration of an alternative alignment further to the west of Narrabri

97. Similar arguments can also be levelled at the ARTC for their failure to consider an alternative alignment of the proposed rail corridor at Narrabri.

98. Residents in this area (as well as Narrabri Council, as we understand it), have been arguing for some time that the proposed alignment which is located to the immediate west of Narrabri is inappropriate and results in unacceptable environmental impacts.

99. Rather, the suggestion is that significant benefits could be obtained if the alignment were moved 10km further west from the township of Narrabri. In particular, a more westerly alignment at Narrabri would give rise to the following benefits:

(a) Benefit 1: Improved impacts on flooding and hydrology. As we understand it:

(i) the current alignment requires the construction of very extensive bridging because of its location at the junction of the Namoi River, Narrabri Creek and Bohena Creek;

(ii) conversely, if the alignment was moved to the preferred route (10km west of Narrabri), then the rail corridor would cross the Namoi River further downstream of the junction with Narrabri Creek and Bohena Creek, meaning that there is potential for reducing the amount of bridging proposed;

(iii) it would avoid the need to squeeze past Bohena Creek again 5.7km past the proposed Bohena Creek Bridge;

(iv) it would remove the need to cross Spring Creek near this same location; and

(v) it would remove the need for a bridge over Bohena Creek near the Newell Highway,

The most significant benefit that comes from the improved flooding and hydrology conditions of this alternative alignment is that the critical concerns of flood impacts on the township of Narrabri are avoided. This is essential given that Narrabri is a large regional centre, meaning that there are significant risks to people and property should the construction of the N2N Project result in the township being impacted in flood events.

(b) Benefit 2: Potential costs saving given the reduced number and extent of bridging;

(c) Benefit 3: Potential for improved travel time given that there is a shortening of track distance by about 4km;

(d) Benefit 4: Improved noise and vibration impacts, given that the route would be moved further away from the township of Narrabri; and

(e) Benefit 5: Improved opportunities for connectivity because a more westerly alignment would place the rail corridor in closer proximity to the proposed Northern NSW Inland Port and the Narrabri Industrial and Logistics hub.

100. We are also not aware of any significant detriments of this alternative alignment.

101. In light of this, it seems unacceptable and indeed negligent for the ARTC to have refused to adequately consider this alternative alignment.

102. We understand that this issue is a matter that will be raised in greater detail by Narrabri Council in their submission in response to the EIS for the N2N Project.

103. We nevertheless state that the significant environmental and human costs of the anticipated flooding and hydrology impacts of the proposed alignment of the rail corridor at Narrabri would, in our view, trigger the application of the precautionary principle, justifying the refusal of the N2N SSI.

104. Alternatively, we would argue that the significant impacts identified in this objection would require the Minister to at least request that the ARTC justify why their proposed alignment has the "*least adverse environmental, social and economic impact*" as per Item 2 of the SEARs.

Conclusions regarding economic analysis in the EIS

105. The failure to undertake a transparent and fulsome economic analysis is critical to the assessment of the N2N Project and is a ground for refusing the N2N SSI.

106. This was the case in *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 where the court refused consent to the Rocky Hill Coal Project on the basis that the economic benefits of the project would be small, that the NPV used inflated figures that were unreliable and unproven,[24] and that the economic cost benefit analysis was incorrect and substantially overstated.[25]

107. We consider that these same criticisms can be levelled at the ARTC in relation to the economic analysis used in the EIS to justify the N2N Project, and we contend that this justifies the refusal of the N2N SSI.

108. Notwithstanding this, we consider that there are options available to the ARTC to recast the N2N Project to generate real benefits and drive up the actual BCR (rather than the overstated BCR) to over 1.00. This includes principally considering an alternative alignment that would utilise the existing rail line to Coonamble, as well as moving the alignment further to the west of Narrabri.

109. However, to do so would require the N2N SSI to be refused in its current formulation, with more detailed analysis required to be undertaken adopting a cost-benefit problem shifting analysis approach to drive up the real and enduring benefits to the community, thereby generating a stronger BCR.

Objection 4: Inadequate ecological assessment

110. The impact of the N2N Project on ecology is significant and has the potential to create serious permanent and irreversible impacts on the environment. It is therefore imperative that the

[24] *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 per Preston CJ at [636].

[25] *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 per Preston CJ at [664]-[665].

Minister, as consent authority, assesses these impacts with a critical eye and is satisfied that these impacts have been adequately identified and can be appropriately managed and offset.

111. If the Minister is unable, based on the information provided in the EIS, to reasonably form this state of satisfaction, then it must refuse the N2N SSI.

112. Numerous provisions in the SEARs require the ARTC to identify and assess the impact of the proposal on biodiversity. This includes:

    (a) Item 1 of the SEARs which requires an assessment of the impacts on matters of national environmental significance protected under the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (**EPBC Act**); and

    (b) Item 6 of the SEARs which requires the proponent to establish that the project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity.

113. The approach to be adopted when considering impacts on biodiversity is to avoid, minimise, and offset. This is expressly reflected in s 1.3(k) of the *Biodiversity Conservation Act 2016* (**BC Act**) and also the operation of the EPBC Act.

114. The 'avoid, minimise, offset' approach operates as a hierarchy, with avoidance and mitigation measures being the preferred and primary strategies for managing the environmental impact of a proposal. This is because avoidance and mitigation directly reduces the scale and intensity of the potential impact, whereas offsets do nothing to reduce the impact and only compensate for any residual significant impact.[26]

115. As is outlined in NSW Government policy regarding the application of offsets under the EPBC Act:

> *Avoidance and mitigation measures can reduce and, in some cases, remove the need for offsets if the residual impact is not significant.* ***Offsets will not be considered until all reasonable avoidance and mitigation measures are considered****, or acceptable reasons are provided as to why avoidance or mitigation of impacts is not reasonably achievable.*[27]

116. The ARTC has clearly adopted an approach which is inconsistent with the 'avoid, minimise, offset' hierarchy.

117. Rather, the ARTC's position as reflected in the EIS, is that its preliminary investigations should be accepted for the purpose of determining whether to grant consent to the N2N SSI and that further investigations to scope the actual impacts are to be undertaken later during the detailed design phase.

118. In particular, our review of the EIS indicates that there are numerous deficiencies in the ecological analysis in the EIS, including in relation to the following:

    (a) the assessment has been limited to the study area only, being the temporary construction footprint plus a buffer area of 50m from the proposed alignment, and does not consider

[26] Department of Sustainability, Environment, Water, Population and Communities, 'Environment Protection and Biodiversity Conservation Act 1999 – Environmental Offsets Policy', October 2012, p 7.

[27] Department of Sustainability, Environment, Water, Population and Communities, 'Environment Protection and Biodiversity Conservation Act 1999 – Environmental Offsets Policy', October 2012, p 7.

any impacts (other than via database search) beyond the immediate footprint,[28] which is an unreasonably narrow scope given the potential for direct and indirect impacts;

(b) the site assessments were undertaken during extended drought conditions which, as admitted in the EIS, substantially impacted the conditions in the survey areas and had an effect on the vegetation integrity and detectability of threatened species;[29] and

(c) the assessment does not assess changes to surface hydrology on ecology due to the ARTC classifying the potential for changes to hydrology as "*minimal*",[30] which is a major gap given the nature of the flood prone environment and the potential for the N2N Project to cause significant changes in surface hydrology (as discussed in Objection 1 above).

119. In our view, this inadequate assessment triggers the application of the precautionary principle and the Minister should not, in the circumstances, grant consent to the N2N SSI. This is because the grant of consent will result in serious and irreversible damage to the environment, including protected threatened ecological communities.

120. Given the extensive amount of clearing proposed, including 1,732 hectares of native vegetation including threatened ecological communities listed under the BC Act and/or the EPBC Act[31] which is acknowledged as causing "*permanent and irreversible*" impacts,[32] we say that it is incumbent upon the Minister to refuse the N2N SSI on the basis that:

(a) the ARTC have not sufficiently investigated the ability of amendments to be made to the proposal to avoid or minimise the potential impacts of the N2N Project, including by changing the proposed alignment (for example by following the existing rail line to Coonamble to a greater extent than proposed, or by following a more westerly route at Narrabri);

(b) the ARTC have not undertaken a sufficiently rigorous assessment for the Minister to be satisfied about the scope and scale of the potential impacts and the ability to mitigate and offset these impacts; and

(c) the ARTC should be required to undertake these investigations at the assessment stage so that appropriate conditions can be imposed on the grant of consent, ensuring avoidance of impacts wherever possible.

Objection 5: Failure to adequately assess noise and vibration impacts and commit to appropriate acoustic attenuation treatments

121. Item 15 of the SEARs requires the proponent to ensure that:

(a) construction noise and vibration is effectively managed to minimise adverse impacts on acoustic amenity; and

[28] EIS Chapter B1 Biodiversity, Part B1.1.2, page B1-1.

[29] EIS Chapter B1 Biodiversity, Part B1.1.2, page B1-3.

[30] EIS Chapter B1 Biodiversity, Part B1.3.7, page B1-24.

[31] EIS Chapter B1 Biodiversity, Part B1.5.3, page B1-31.

[32] EIS Chapter B1 Biodiversity, Part B1.3.1, page B1-14.

(b) increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community.

122. We have engaged an accredited acoustic consultant, Mr Brian Clarke of Acoustic Dynamics, to conduct a peer review of the noise and vibration analysis in the EIS, including Technical Report 8 which is the Noise and Vibration Assessment – construction and other operations prepared by JacobsGHD (**Construction Noise Assessment**) and Technical Report 9 which is the Noise and Vibration Assessment – operational rail prepared by SLR Consulting (**Operational Noise Assessment**). A copy of the advice from Mr Clarke is at **Attachment E** of this objection. NSW Farmers and the CWA rely on this advice for the purpose of this objection and invite the ARTC to respond to the matters raised in this advice as part of its Response to Submissions.

123. From this advice, we understand that there are numerous issues with the noise and vibration assessment that has been undertaken for the N2N Project. These issues are discussed in more detail below.

Deficiencies in construction noise analysis

124. We note at the outset that the EIS indicates that the ARTC propose to carry out construction works generally between the hours of 6am to 6pm, 7 days a week (Monday to Sunday).[33]

125. These proposed construction hours extend far beyond the recommended standard hours for construction work provided by the NSW EPA's *Interim Construction Noise Guideline* (DECC, 2009) (**EPA Guideline**). Specifically, the proposed hours would result in:

(a) works commencing at 6am, rather than 7am, Monday to Friday (1 hour extra each day);

(b) works commencing at 6am, rather than 8am, and extending beyond 1pm to 6pm on Saturdays (6 hours extra); and

(c) works being undertaken on a Sunday where ordinarily no works are allowed (12 hours extra).[34]

126. In addition to this, the EIS states that additional out-of-hours work will also be required, including during night time periods.

127. Therefore, the adequacy of the assessment of noise and vibration impacts during the construction phase needs to be understood against this backdrop. Namely, that the construction works are proposed to be undertaken during extended hours, 7 days a week, and will cross into the night time period.

128. In this regard, we note that the Construction Noise Assessment is infected by a critical deficiency in that the ARTC proposes for construction noise management levels to be determined by reference to the minimum background noise levels in the NSW Industrial Noise Policy (which has been superseded by the NSW Noise Policy for Industry), rather than the existing ambient noise levels at receiver locations.

129. This is problematic because the existing ambient noise levels at surrounding receiver locations have been determined to be very low and in many cases below 30dB(A) in all periods of the day. Therefore, in applying the Policy over the known existing noise levels, the ARTC are downplaying

[33] EIS Chapter B8 Noise and Vibration, Part B8.1.2, page B8.5.

[34] EIS Chapter B8 Noise and Vibration, Part B8.1.2, page B8.5.

the impacts of construction noise because the assumed levels are actually higher than the actual recorded noise levels. In our view, this is misleading and the ARTC should be required to acknowledge, assess and mitigate the noise impacts by reference to the increase in actual noise generated, and not the assumed noise impacts, particularly where the project is proposed in a location that enjoys high degrees of acoustic amenity at all hours of the day.

130. Further to this, we note that the assessment of sleep disturbance in the Construction Noise Assessment makes clear that there will be significant sleep disturbance impacts on large numbers of sensitive receivers for extended periods of time. Specifically, the report concludes that:[35]

(a) for rail infrastructure, works will exceed the relevant external sleep disturbance criteria at up to **981** residential receivers and the internal awakening criteria at up to **220** residential receivers, with the duration of impact estimated to be up to **8 weeks**;

(b) for road infrastructure, works will exceed the relevant external sleep disturbance criteria at up to **564** residential receivers and the internal awakening criteria at up to **69** residential receivers, with the duration of impact estimated to be up to **12 weeks**; and

(c) for construction infrastructure, works will exceed the relevant external sleep disturbance criteria at up to **414** residential receivers and the internal awakening criteria at up to **90** residential receivers, with the duration of impact estimated to be up to **6 weeks**.

131. Given the sheer number of impacted receivers and the severity and duration of the stated impacts, we suggest that the Minister must require that any construction works *only* be conducted in standard day time hours and not during night time periods (10pm to 7am). This is because the proposed impacts on sleep disturbance are unacceptable and the EIS does not demonstrate that the impacts can be appropriately managed, as per Item 15 of the SEARs.

132. Equally, we question the voracity of the claim made in the EIS that the ARTC have consulted with 118 affected landowners on this question with "*about half indicating they would support the primary proposal construction hours*".[36] This is firstly because no evidence as to landowner support has been provided by the ARTC as part of the EIS. However, even if it is assumed that the ARTC have consulted with affected landowners on this point as they claim, it is not clear whether the ARTC disclosed the duration and severity of the impacts and/or provided those landowners with a copy of the Construction Noise Assessment at this time. If the impacts were not transparently explained to the affected parties, then any verbal consent provided by the landowners cannot be said to be informed consent and should not be accepted on this basis.

Deficiencies in continuous rail noise impact assessment

133. We have reviewed the ARTC's Operational Noise Assessment and take issue with this analysis in the following key respects:

(a) the Operational Noise Assessment adopts a noise criteria which is not reflective of the actual background noise resulting in misleading conclusions regarding the acceptability of operational noise impacts;

(b) the modelling assumes that rolling stock and track are in good working condition, which is a baseless assumption and ignores potential increased operational noise impacts that will be experienced by sensitive receivers;

[35] Technical Report 8, Noise and Vibration Assessment – construction and other operations prepared by JacobsGHD, page 119.

[36] EIS Chapter B8 Noise and Vibration - Construction, Part B8.1.2, page B8.5.

(c) the ARTC has not specified what mitigation options are proposed at sensitive receiver locations and there is no commitment to carry out these impact mitigation works prior to the operation of Inland Rail, leaving sensitive receivers vulnerable;

(d) no ground-truthing of aerial imaging has been undertaken to ensure that all sensitive receivers have been captured in the assessment nor has the ARTC identified the nature of each receiver (i.e. type of occupancy) and the sensitivity of that receiver location;

(e) no detailed analysis or reasoning is provided in the Operational Noise Assessment to support why exceedances of the relevant noise criteria are acceptable and/or capable of mitigation, contrary to the SEARs; and

(f) the assessment of impacts on sleep disturbance is grossly inadequate and the ARTC should be required to undertake a detailed assessment of impacts on sleep disturbance prior to approval being granted to the N2N SSI.

134. These concerns are discussed in greater detail below.

Adoption of inappropriate operational noise criteria

135. Firstly, we note that as with construction noise impacts (discussed above), the ARTC has sought to base their operational noise limit criteria on the Rail Infrastructure Noise Guideline (**RING**) rather than by reference to the existing background noise levels at receiver locations. The existing background noise levels in the vicinity of the N2N Project area are extremely low, meaning that the project area is currently experiencing very quiet conditions, far below the criteria established in the RING.

136. As this discrepancy is known, it is inappropriate and misleading in our view for the ARTC to use the RING criteria to assess predicted noise impacts and draw conclusions regarding the acceptability of those impacts. This is because compliance with the RING criteria alone does not mean that there will be no change in noise experienced by sensitive receivers and is not evidence, on face value, that those impacts are acceptable. Conversely, we consider that the ARTC must be required at a minimum to acknowledge, assess, and mitigate the actual noise impacts that will be experienced at receiver locations, whether or not they comply with the criteria specified in the RING.

Baseless assumption regarding the condition of rolling stock and track

137. The acoustic modelling that has been undertaken assumes that rolling stock and track are in good condition and assesses the acoustic impacts on this basis. The conclusion that is drawn from this is that any higher noise levels and increased impacts that would occur from rolling stock and track being in a run down or poor condition will not be experienced until the Inland Rail has been operational for some time.

138. In our view, this is an inappropriate assumption to adopt and no evidence has been provided to support the assumption that the trains using the proposed alignment will be new or maintained in good working condition. In fact, it is arguable that since most of the trains using the alignment will be operated by non-ARTC entities, the ARTC does not have actual knowledge or control over the condition of the trains that will utilise Inland Rail. Therefore, the modelling of noise impacts should not be undertaken on a best-case-scenario basis. Rather, an allowance should be made for impacts arising from rolling stock and track being in a poor or degraded condition, such that the actual or likely potential impacts can be understood. Additionally, the application of this

allowance should be disclosed in the Operational Noise Assessment so that it can be the subject of independent review.

No commitment to carry out acoustic attenuation treatments

139. The EIS acknowledges that up to 58 sensitive receivers have been identified as requiring noise and vibration mitigation.[37] However, despite this, the options for treatment are only presented as options to be explored later during the detailed design phase and the EIS only commits to the carrying out of treatment options "*where feasible and reasonable*".

140. For example, the Operational Noise Assessment states that:[38]

> *Applying the predicted noise levels and the location of the sensitive receivers; the feasible and reasonable measures adopted by ARTC to reduce railway noise impacts, beyond controlling railway noise at its source, are expected to be at-property controls such as architectural property treatments and upgrades to property fencings.* ***Options for receiver-specific measures to mitigate or manage potential noise, at identified sensitive receiver properties and land-uses, will be considered further during detailed noise****.*
>
> *Whether at-property controls or other alternative noise mitigation measures are required will be subject to ongoing assessment of railway noise from Inland Rail. This will include further railway noise modelling, analysis of engineering constraints present, constructability issues and other potential and environmental matters (flooding implications and visual impacts as examples).*
>
> ***Consultation with directly affected landowners will continue and the verification of railway noise levels will be undertaken once Inland Rail operations commence on the proposal****.*

141. This excerpt is extremely concerning because it reflects a completely inappropriate and unacceptable approach to noise impact assessment and mitigation. This is because:

    (a) firstly, it acknowledges that no attempt has been made by the ARTC to assess what treatments, if any, can mitigate the noise impacts at sensitive receiver locations and consequently, is not able to draw any conclusions regarding whether these treatments can effectively mitigate the noise and vibration impacts of the project;

    (b) secondly, it suggests that consideration of acoustic impact mitigation is a matter to be considered post-approval, which entirely misunderstands the obligations on the ARTC under Item 15 of the SEARs which requires the proponent to demonstrate that impacts can be effectively managed to protect acoustic amenity prior to approval being granted to the N2N SSI;

    (c) thirdly, because the ARTC has not undertaken an assessment of what treatments can and should be implemented at sensitive receiver locations, there is no consequential obligation or commitment on the part of the ARTC to carry out those treatments. This means that it will be entirely at the discretion of the ARTC what treatments they consider "*feasible and reasonable*" to implement and there is no commitment to undertake these works prior to the operation of the project; and

[37] EIS Chapter B9 Noise and Vibration – Operation, Part B9.4.2, page B9-6.

[38] Technical Report 9 Noise and Vibration Assessment – Operational Rail, page 4.

(d) finally, the ARTC appear to be suggesting that noise and vibration treatments will be assessed "*once Inland Rail operations commence*". This seems to indicate that there will be a period of time where Inland Rail will have been constructed and operational and yet investigations are still being undertaken as to the appropriate treatments, meaning that sensitive receivers are left vulnerable to unacceptable noise and vibration impacts for an unspecified period of time.

142. This is a critical failure on the part of the ARTC which cannot be remedied post-approval during the detailed design phase.

Failure to identify and categorise all sensitive receivers

143. It is clear that the Operational Noise Assessment has been prepared on the basis of a desktop review of aerial imagery to identify sensitive receivers in the vicinity of the N2N Project site.

144. However, from our discussions with landowners we understand that no attempt has been made by the ARTC to ground-truth this aerial imagery to ensure that:

(a) all sensitive receivers have been captured and considered as part of the assessment; and/or

(b) the nature of the sensitive receivers are understood so that their sensitivity to noise and vibration impacts can be considered.

145. We would therefore seek for the Minister to require the ARTC to develop a more comprehensive Operational Noise Assessment which would include a mandatory obligation to ground-truth aerial imagery to ensure that all impacts on sensitive receivers are identified, assessed and managed.

No justification regarding why exceedances are acceptable

146. Notwithstanding the fact that we consider that an inappropriate noise level criteria has been adopted (as discussed above at paragraph [135] and [136]), the Operational Noise Assessment acknowledges that the N2N Project will result in the noise levels "*at the majority of sensitive receivers*" exceeding this noise limit by up to 3 dBA.[39]

147. However, these exceedances are simply dismissed on the basis that they reflect "*a relatively minor margin above the trigger levels in the context of a perceptible difference between the trigger level and the predicted noise levels.*"[40]

148. This conclusion is misleading as it suggests to the reader that the exceedance of a few decibels will be an imperceptible difference and therefore the impact is acceptable. It is also simply incorrect.

149. Additionally, we note that it is the ARTC, as proponent, who must demonstrate that noise emissions at sensitive receiver locations are acceptable and can be effectively managed. This requires a level of detailed analysis.

150. We would submit that the Minister cannot and should not accept the ARTC's baseless dismissal of an acknowledged exceedance of the RING criteria as evidence that the noise impacts of the proposal are acceptable.

Grossly inadequate consideration of sleep disturbance impacts

[39] Technical Report 9 Noise and Vibration Assessment – Operational Rail, page 129.

[40] Technical Report 9 Noise and Vibration Assessment – Operational Rail, page 129.

151. The Inland Rail Project is proposed to be operational for 100 years. Therefore, sleep disturbance is a critical impact arising from the construction and operation of the N2N Project, particularly because it is proposed to be built in an otherwise quiet environment which naturally enjoys high levels of acoustic amenity.

152. In fact, sleep disturbance is arguably a more important impact to consider compared with amenity impacts because it is has known serious health implications. The nature of these impacts was recently recognised in a Commonwealth report from the Department of Health which states that:

> ***Poor sleep has been linked to numerous adverse consequences, including health conditions such as cardiovascular disease, depression and obesity*** *(Riemann et al., 2011),* ***as well as accidents and disability due to fatigue*** *(Horne and Reyner, 1999),* ***and lost workplace productivity*** *(Iverson et al., 2010; Rosekind et al., 2010). These translate into considerable social and economic costs, with three sleep disorders alone – obstructive sleep apnoea, primary insomnia and restless leg syndrome –* ***estimated to cost the Australian economy $36 billion a year*** *(DeloitteAccess Economics, 2011). The economic costs of sleep problems more broadly (such as daytime sleepiness or short sleep) are estimated to be considerably higher (Deloitte Access Economics, 2011).*[41]

153. This is why Item 15 of the SEARs expressly requires the ARTC to assess the impacts of the N2N Project on sensitive receivers, including consideration of sleep disturbance.

154. Despite this, the EIS and the Operational Noise Assessment critically fails to include <u>any</u> detailed assessment or even acknowledgement of the potential for significant impacts on sleep disturbance for properties within a 1km envelope either side of the alignment.

155. Rather, the EIS acknowledges the potential for impacts, as is evident in the following admission:

> *Based on the noise modelling,* ***the noise levels from rolling stock could be above LAmax 49 dBA within approximately 1 km from the rail corridor****. The 1 km distance is a guide to where night-time noise levels* ***may have the potential to result in sleep disturbance impacts****.*

156. However, it then goes on to dismiss the significance of this non-compliance by stating that:

> ***Individuals will respond to noise differently****, and just because railway noise can be audible does not mean it will cause disturbance or annoyance impacts.*
>
> ***It would be expected that residential property, complying to Australian building codes and standards, would achieve façade noise reductions greater than the conservative 7 dBA assumption*** *applied in this assessment. In such circumstance the building construction would assist in guideline values for internal noise amenity would be more readily achieved.*

157. In our view, this approach is unacceptable because it is unclear how many receivers will be impacted (how many are located within 1km of the corridor) and whether these exceedances can be mitigated by architectural or 'at property' treatments alone. Therefore, it is not possible to conclude that these impacts are acceptable.

158. In particular, we note that the EIS:

[41] Commonwealth of Australia, Department of Health, The health effects of environmental noise (2018), page 25.

(a) does not identify or even quantify the number of impacted receivers;

(b) relies on an entirely unproven assumption which has no inherent credibility, particularly given that most of the houses in this area have been in existence for a considerable period of time and many are built of weatherboard construction;

(c) it fails to calculate the specific anticipated internal noise levels at each of the sensitive receiver locations and the extent of the numerical non-compliance;

(d) it assumes that it is feasible to implement high noise attenuating controls at these properties;

(e) it does not confirm that the implementation of high noise attenuating controls will result in compliance with the sleep disturbance criteria; and

(f) it does not commit to the moving of any dwellings in the event that high noise attenuating controls cannot ensure compliance.

159. Conversely, we would suggest that in this area, many of the houses along the alignment are of older construction, dating from the 1950s and 1970s, and are typically fibro and timber construction (and not double-brick, for example, as appears to have been assumed in the EIS). Also, all houses, even new ones, in this climate tend to rely on fans, flyscreens and roof mounted evaporative cooling units for cooling during the hot summer months, rather than air conditioning which is expensive to run. Consequently, the usual architectural treatments that might be employed to manage these issues in an urban context, like double glazing and reticulated air-conditioning, either won't work or are not feasible in this environment. Further, any assumption relying on closed windows as a form of attenuation is not realistic.

160. In our view, the failure to clearly acknowledge, assess and mitigate these sleep disturbance impacts is plainly unacceptable and warrants the refusal of the N2N SSI.

Imposition of conditions

161. For the numerous reasons advanced above as to the inadequacy of both the Construction Noise Assessment and the Operational Noise Assessment, we say that it is clearly apparent that the ARTC has failed to meet the requirements of Item 15 of the SEARs. Consequently, because the Minister cannot be satisfied that the noise and vibration impacts arising during construction and operation of the N2N Project can be effectively managed to minimise adverse impacts, we say that the N2N SSI must be refused.

162. However, and in the event that the Minister is minded to grant consent to the N2N SSI (notwithstanding the matters raised in this objection), then we would suggest that at a minimum, conditions of consent must be imposed to:

(a) limit construction noise to normal daytime construction hours only to ensure that impacts on sensitive receivers from construction noise are acceptable;

(b) require mitigation and management strategies to be applied to construction noise as per the Transport for New South Wales *Construction Noise and Vibration Strategy* (ST-157/4.1);

(c) require the ARTC to undertake site inspections of sensitive receiver locations and commit the ARTC to carrying out works for acoustic attenuation treatments at sensitive receiver locations prior to the completion and operation of the rail line;

(d) require the ARTC to conduct a detailed assessment of sleep disturbance impacts arising from the N2N Project as per the World Health Organisation's *Night Noise Guidelines for Europe* criterion (49dBA external, windows open) and commit the ARTC to carrying out works for acoustic attenuation treatments at sensitive receiver locations prior to the completion and operation of the rail line;

(e) require the appointment of an independent project Acoustic Advisor;

(f) specify an acceptable Operational Noise and Vibration Criteria which is appropriate considering the acoustic sensitivity of the rural environment;

(g) undertake operational noise validation during the operation of the N2N Project; and

(h) require the preparation of an operational noise compliance report which is to be made freely available to the public.

Objection 6: Inadequate visual impact assessment

163. In our view, the EIS has adopted an extremely narrow scope of visual impact assessment, contrary to Item 18 of the SEARs.

164. At the outset, we note that the EIS acknowledges that the visual impacts of the proposal from private property have not been considered, despite the fact that many private landowners will be impacted by the proposal:

> ***Rural residences within proximity of the proposal may experience visual impacts from their home or surrounds, however, the focus of this assessment is from publicly accessible locations only****. Any visual impacts from these locations would likely be associated with vegetation removal, and/or new rail infrastructure within an otherwise rural landscape setting.*[42]

165. This narrow scope has been adopted without explanation or justification and is simply unacceptable, particularly for a project of this scale and in a location which otherwise enjoys high visual amenity. It is also expressly contrary to requirement 1(d) of Item 18 of the SEARs which requires the proponent to assess the visual impact of the project on "*private landowners and the local community*".

166. Additionally, we consider that the number and selection of photomontages is highly selective such that they cannot be said to portray a realistic or reasonable depiction of the visual impacts of the N2N Project. Specifically, we note that:

(a) while 26 viewpoints were selected as part of the general visual impact assessment, only 5 photomontages were prepared to support that visual impact assessment. This is particularly significant because in the absence of exhibition of the reference designs, a person reviewing the EIS is unable to determine what infrastructure is proposed on the land or the dimensions of any proposed bridge or levy bank, for example, and cannot draw inferences regarding whether the visual impact assessment at that viewpoint is fair and accurate;

(b) of the 5 photomontages that have been prepared, 4 are taken from viewpoints in the area immediately surrounding Narrabri and the only other viewpoint included is located in outer

[42] EIS Technical Report 12 Landscape and Visual Assessment prepared by JacobsGHD, page 129.

Narromine. That means that none of the photomontages reflect the visual impacts of the proposal anywhere on the alignment between Narromine to Narrabri. This can hardly be said to be representative, particularly where the project is proposed to span some 306km; and

(c) only 1 photomontage shows the visual impacts of the rail line with a double-stacked train present in the image (being viewpoint 5). The photomontages therefore cannot be said to reflect the true impact of the proposal, given that the N2N Project is stated as being designed to support up to 14 double-stacked 1.8km long trains each day.

167. This very convenient selection of photomontages, in our view, is clearly not representative of the views and viewer settings across the length of the proposal and is grossly inadequate to enable a reasonable assessment of the visual impact of the proposal.

168. We also question the reasonableness of some of the conclusions drawn regarding the nature of the impact of the N2N Project from certain viewpoints. In particular, we are of the view that the visual impact assessment is flawed in the following 4 key respects:

(a) firstly, most of the visual impact assessments are undertaken at level crossing locations where the infrastructure is at or close to existing ground level, despite the fact that for significant parts of the alignment, pronounced levy banks are proposed to be erected supporting either some of the 75 new bridges or the 630 banks of drainage culverts. The focus of visual impacts at level crossing locations at the exclusion of many other locations is curious and can only be viewed as an attempt to diminish the anticipated visual impacts which arise from significant infrastructure and earthworks in a rural setting;

(b) secondly, where assessment is undertaken in relation to a proposed bridge, that viewpoint is located at quite a distance from the proposed alignment. For example, Viewpoints 9 and 10 which relate to the proposed Castlereagh River Bridge, are taken at a distance of 1km and 700m from the proposed alignment respectively. This can only be understood as being a deliberate attempt to downplay the visual impact of the project from this viewpoint, despite the significant infrastructure proposed to be erected in this location;

(c) thirdly, where a viewpoint is of a section of proposed elevated rail line, the visual impact assessment simply states that the rail line is proposed to be "*elevated above*" the roadway without providing the specifications of the extent of the proposed elevation. See for example, Viewpoint 1 which describes that "*the rail line would be slightly elevated above the existing surface*", or Viewpoint 19 which says that "*the rail line would be elevated above the roadway*", or Viewpoint 20 which concludes that "*although it is proposed to be elevated above the floodplain, the bridge would not be visible from this location*". If conclusions are to be drawn in relation to visual impact, the extent of elevation is critical and must be expressly recorded in the analysis, particularly in the absence of the reference designs; and

(d) finally, much of the analysis references the fact that future planting would reduce the visual impact of the proposal along the alignment. This factor is weighed when assessing the magnitude of change that will arise during the construction and operation of the N2N Project. See for example, Viewpoint 2 which acknowledges that "*although the changes [being the construction of the rail line] would be obvious, the tree removal could be partially mitigated with potential future planting*". On this basis, the significance of the impact was reduced from moderate to moderate-low. However, the proposal does not specify what planting, if any, is proposed as part of the N2N Project. It is therefore misleading, in our view, to reduce the assessed visual impact of the proposal on this basis.

169. The N2N Project is a significant infrastructure project which will undoubtedly change the visual landscape between Narromine to Narrabri. The ARTC, in the EIS, appears reluctant to acknowledge this change and rather, concludes (contrary even to common sense) that the visual impact will be minor.

170. Conversely, the approach that should be adopted by the ARTC, as proponent for the N2N SSI, is to carry out a fair and representative visual impact assessment of the proposal, acknowledging the points of significant impact, and justify why these impacts are acceptable in the circumstances. The failure to acknowledge any visual impacts is dishonest and the ARTC should be required to undertake a more objective analysis so that the Minister can be satisfied that the N2N Project minimises adverse impacts on the visual amenity of the built and natural environment as per Item 18 of the SEARs.

Objection 7: Failure to address access, fragmentation and severance issues

171. Loss of access and the fragmentation and severance of properties remains a considerable concern to many, if not all, of the landowners along the proposed alignment.

172. This covers circumstances where, for example, the rail corridor would have the effect of cutting off a property from its principal access point to a public road. However, it also extends to cover access within a property itself, including access to internal road networks as well as farming infrastructure such as stock yards, dams, bores etc. In our view, it also covers connectivity between properties where farms are run as family cooperatives or community enterprises across multiple properties in different ownerships.

173. From speaking with numerous landowners along the N2N alignment, we understand that these concerns regarding access, fragmentation and severance principally relate to:

    (a) how properties, or parts of properties, are to be accessed where they become landlocked as a result of the N2N Project;

    (b) how parts of properties are to be accessed and used where they are severed and sterilised by the proposed alignment;

    (c) how access between paddocks and farms is to be maintained where existing access points will be impeded by the alignment (and its embankments);

    (d) how and where the level crossings are proposed to be constructed and what are the proposed design parameters (will they accommodate the transport of machinery as well as livestock);

    (e) the viability of paddocks for their existing land use as a consequence of interference or inconvenience caused by the alignment of the rail corridor;

    (f) the extent to which any proposed access points will be serviceable during flood or heavy rain fall events; and

    (g) how access to travelling stock reserves will be impacted by the N2N Project and the consequences of this on farming operations.

174. Despite landowners expressing these concerns for many years, the ARTC has made no real commitments in relation to how access, fragmentation and severance issues are to be resolved.

175. Rather, we have been told that the ARTC has simply been providing verbal assurances to landowners that access issues will be resolved at the detailed design phase. This approach of dealing with access post-approval is also reflected in the EIS which states that:

> *Affected landholders would continue to be consulted during detailed design to refine proposed access arrangements and minimise the potential for impacts.*[43]

176. We consider that this approach is unacceptable and contrary to Item 5 of the SEARs which requires the proponent to demonstrate that the project minimises impacts to property and businesses including through the maintenance of appropriate access to properties and the minimisation of displacement of existing land use activities, dwellings and infrastructure. Item 5 of the SEARs also requires the ARTC to address agricultural land use impacts including in relation to:

(a) division or fragmentation of property and changes to property management which could lead to the loss of viability;

(b) property access and the efficient and safe crossing of the rail corridor by machinery and livestock;

(c) connectivity of property infrastructure severed by the rail corridor; and

(d) livestock exclusion/management to minimise harm and losses.

177. The most fundamental reason why such an approach is unacceptable is the fact that the granting of consent to the N2N SSI would have the effect of 'locking in' the proposed alignment. This is problematic because the current alignment causes significant access, fragmentation and severance impacts and, due to the ARTC's failure to conduct meaningful engagement with landowners, opportunities to avoid these impacts by making amendments to the proposed alignment have not yet been explored.

178. For example, while it appears as though the ARTC have sought to locate the proposed corridor along lots boundaries, they have not explored the possibility that a neighbouring property might be in different ownership (for example, owned by a company rather than in a personal capacity) but as a practical matter, be run as part of the one farming enterprise. Similarly, the ARTC have not considered the fact that land might be in separate ownership but be run as a family cooperative with other neighbouring properties, with access to shared road networks and farming infrastructure being critical to the operation of that cooperative.

179. Accordingly, the ARTC have not taken any actual steps to avoid access issues, fragmentation or sterilisation of land. Rather, it has simply undertaken a desktop review of the cadastre without careful consideration as to the impacts of severing properties that are run together.

180. In our view, this has the consequence that the Minister must refuse the N2N SSI until such time as the ARTC has:

(a) undertaken a detailed analysis regarding the properties most likely to experience access, fragmentation and severance issues;

(b) consulted with relevant landowners regarding appropriate measures that can be implemented to mitigate access, fragmentation and severance issues where possible, including via amendments to the proposed alignment, and identified proposed locations of

[43] EIS Chapter B11 Traffic and transport, Part B11.4.2, page B11-17.

easements for access, the placement of level crossings, and the location, height and width of under bridge access points; and

(c) identified those parcels which are likely to be severed, fragmented or otherwise severely impacted by the proposal and commit to appropriately compensating those landowners for not only the acquisition of that land, but the loss of value of the businesses which rely on that land.

181. In the alternative, should the Minister be minded to grant consent to the N2N SSI, then we would urge the Minister to include as part of that project approval a condition that would enable a mediator (nominated by the landowner, not the ARTC) to be appointed to mediate any disputes between the ARTC (or its contractors) and landowners relating to issues around access.

182. The costs of the mediator should be borne by the ARTC and the mediator should be working on the basis that the affected landowners are to be no worse off as a consequence of the N2N Project.

183. Such matters may not be capable of being adequately compensated under the relevant compulsory acquisition legislation and the fear is that unless suitable arrangements are made through the project conditions, the somewhat ruthless approach to the management of costs will prevail leaving landowners without all-weather access to their properties. This would be an entirely unacceptable outcome.

Objection 8: Failure to consider the impact of the rail line on the farming capacity of the district

184. It is well understood that the land on which the N2N Project relates is highly productive land, with a gross value of agricultural production across the project site of $998 million.

185. It is therefore critical that the Minister carefully considers the agricultural land use impacts of the N2N Project as part of its assessment of the N2N SSI.

186. In this regard, we note that Danica Leys, Chief Executive Officer of the CWA is a qualified agronomist with extensive knowledge of and experience working in central west and north west New South Wales. To assist in the preparation of this submission, Ms Leys has worked with the NSW Farmers Inland Rail Taskforce Chair, Mr Adrian Lyons who has firsthand farming experience in the region and a thorough understanding of the N2N Project, to review the Technical Report 11 Agriculture and Land Use Assessment prepared by JacobsGHD (**Agricultural Assessment**) which forms part of the EIS. A copy of the report prepared by Ms Leys and Mr Lyons is at **Attachment F** of this objection. NSW Farmers and the CWA rely on this report for the purpose of this objection and invite the ARTC to respond to the matters raised in this report as part of its Response to Submissions.

187. Firstly, as with most of the EIS, it is noteworthy that the Agricultural Assessment has been undertaken on the basis of a desktop analysis with no detailed on-ground investigations having been conducted. Additionally, the one drive to the project site that has been conducted was done during the height of the November 2018 drought which would have significantly impacted observations regarding land use at this time. There has also been no attempt by the ARTC to conduct any meaningful engagement with landowners in order to fill this information gap or at least improve their understanding of the nature of farming operations in the region.

188. These factors have the consequence that the Agricultural Assessment lacks specificity and reflects inaccurate understandings of the existing land use in the region. For example, the Agricultural

Assessment asserts that grazing of modified pastures accounts for only 11% of the study area, despite the fact that local knowledge tells us that this is a gross underestimation. These deficiencies also infect the conclusions drawn in the EIS regarding the acceptability of the impacts of the N2N Project on agricultural land use, which we say are largely unfounded.

189. Critically, the EIS acknowledges that the N2N Project will result in a negative economic impact of $258 million in the project area. This equates to a permanent and irreversible loss of at least 25% agricultural production in this region, which does not account for ancillary losses caused by the impacts of severance, sterilisation of farm land, reduced productivity of soils due to erosion and flooding impacts, and potential noise and vibration impacts on livestock. This calculation also does not account for the fact that much of the land that is being used for grazing is also suitable for high value cropping as well. It is therefore possible, if not likely, that the impacts of the N2N Project on the agricultural production of the region are far greater than the EIS admits.

190. This attempt by the ARTC to downplay the impacts of the N2N Project on agricultural land use is also reflected in the analysis, or lack thereof, on Biophysical Strategic Agricultural Land (**BSAL**). Of note, existing State Government policy acknowledges that:

> *Biophysical strategic agricultural land is land with a rare combination of natural resources highly suitable for agriculture.* ***These lands intrinsically have the best quality landforms, soil and water resources which are naturally capable of sustaining high levels of productivity and require minimal management practices to maintain this high quality****. As these lands are rare, the NSW Government is putting mechanisms in place to protect these strategic land assets.*[44]

191. Despite this, the Agricultural Assessment provides a grossly inadequate assessment of the impact of the N2N Project on BSAL and does not even incorporate a site verification process. We can only assume that this has not been undertaken so as to avoid acknowledging the significant impacts, which we say are calculated at a 7% permanent loss of BSAL.

192. Unacceptable impacts on BSAL has been used as grounds for refusing major projects in the past, see for example the refusal of the Bylong Valley Coal Mine by the NSW Independent Planning Commission on 18 September 2019 (SSD 6367). This is because the significant environmental and social costs that come with a permanent loss of BSAL is inconsistent with the principles of ESD, including inter-generational equity which is concerned with ensuring that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.

193. Equally, we contend that the ARTC has failed to provide sufficient information in the EIS for the Minister to be satisfied that the N2N Project will not have an unacceptable impact on BSAL. This enlivens the precautionary principle which requires the Minister, as consent authority, to assume that the risk of environmental harm from loss of BSAL is not a scientific uncertainty but is a reality. Against this backdrop, it is clear that the N2N Project would be inconsistent with the principles of ESD and particularly inter-generational equity, which is evidence that the N2N Project is not in the public interest and should be refused.

194. Finally, we also wish to note that the mitigation measures proposed in the Agricultural Assessment are ambiguous and will be ineffective in managing the impacts of the N2N Project on agricultural land use. In particular:

[44] NSW Department of Planning and Infrastructure, Strategic Regional Land Use Plan: Upper Hunter, September 2012, page 21.

(a) it is grossly inadequate for the ARTC to simply assert that "*feasible and reasonable property-specific measures*" will be implemented to mitigate impacts, without clearly identifying what those measures are and how those measures will in fact mitigate the impacts caused by the project; and

(b) the ARTC have not made any real commitments to carry out any mitigation works and provided any indicative timeframes for when these works would be conducted.

195. In our view, it is clear that the ARTC has failed to satisfy the requirements of Item 5 of the SEARS, including specifically requirement 2 which is directed at agricultural land use impacts on the land capability and agricultural productivity.

196. This critical failure enlivens the application of the precautionary principle which has the consequence that the Minister must refuse the N2N SSI on the basis that the N2N Project is not in the public interest.

Objection 9: No proper quantitative assessment of air quality impacts

197. The EIS is particularly cursory in its consideration and assessment of the potential air quality impacts arising from the N2N Project.

198. This is concerning given the information that is known about the proposal, namely that:

(a) the Inland Rail Project involves the passage of 10 trains per day up to 2025, with this increasing to 14 trains each day by 2040;

(b) the types of trains include the faster and longer Inland Rail Express and Inland Rail Superfrieghter trains on the main line track, with other general freight types held on the crossing loops;

(c) the trains are either 3 locomotives and 2 locomotives;

(d) the trains are diesel-electric locomotive engines; and

(e) the project is proposed to be operational for 100 years.

199. Although, of concern is that most of this information was gleaned from the Operational Noise Assessment and is not separately recorded in the Air Quality Impact Assessment included in the EIS. It is therefore unclear whether these same assumptions underpin the Air Quality Impact Assessment.

200. Given this factual background, there is an enduring concern about the potential for adverse air quality impacts arising from fine particulates PM10 and PM2.5 and other carcinogenic substances that will be of concern to residences located in close proximity (that is, within at least 1 km) to the rail corridor or crossing loops.

201. The assessment of point source submissions from things like borrow pits, concrete batching plants is also a concern. The statement is made in the EIS that due to a screening process, impacts will not persist for more than 50 metres. However, no evidence is provided to support that assertion or whether the cumulative impacts of such point sources have even been considered.

202. Additionally, the risk of potential impacts of fuel emissions (from the diesel) on certain specialist crops is also of concern, particularly considering the dominant agricultural land uses in the region (outlined above in Objection 8).

203. It is therefore noteworthy that the only emissions considered for the purpose of the Air Quality Impact Assessment are oxides of nitrogen. This, in our view, is an unreasonably narrow scope which does not meet the requirements of Item 13 of the SEARs.

204. Further to this, one of the other glaring deficiencies in the Air Quality Impact Assessment is the fact that the impact assessment has arbitrarily adopted a 70 percentile level when assessing background air quality levels.[45] By subjectively electing to ignore the highest 30% of pollution events, Inland Rail creates an artificial and unrealistic picture of the existing ambient background levels. This then forms the baseline against which air quality impacts are assessed.

205. Moreover, the ARTC have also only undertaken a *qualitative*, and not a *quantitative*, assessment of air quality impacts during the **operation** of freight trains. This is problematic because a qualitative assessment is undertaken without reference to air quality standards which relate to the quantities of pollutants or poisons in the atmosphere. Rather, a *quantitative* assessment was only undertaken in respect of assessing the impacts from idling locomotives at crossing loops.

206. In our view, unreasonably restricting the scope of the Air Quality Impact Assessment in these critical respects means that the assessment in the EIS can hardly be said to be sufficiently comprehensive for the Minister to be satisfied that the air quality impacts of the N2N Project are acceptable or that the project minimises risks to human health and the environment "*to the greatest extent practicable*".

207. Accordingly, the failure to carry out a sufficiently rigorous Air Quality Impact Assessment constitutes a grounds for refusing the N2N SSI as currently formulated unless and until such time as a comprehensive quantitative assessment is undertaken of all potential air quality impacts arising from the N2N Project.

Objection 10: Misguided approach to compulsory acquisition

208. Overall, the N2N SSI reflects a misguided understanding of the NSW compulsory acquisition legislation, including the *Land Acquisition (Just Terms Compensation) Act 1991* (**Just Terms Act**).

209. The Just Terms Act states that compensation is only payable when land is acquired and even then, that compensation must be directly referrable to one or more of the heads of compensation under s 55 of that Act, including:

    (a) the market value of the land;

    (b) any special value of the land;

    (c) any loss attributable to severance;

    (d) any loss attributable to disturbance;

    (e) the disadvantage resulting from relocation; and

    (f) any increase or decrease in the value of any other land which adjoins or is severed from the acquired land by reason of the carrying out of the public purpose for which the land was acquired.

210. It is clear to us that under the current arrangements, not all of the landowners that will be impacted by the N2N Project will need to have land acquired as part of the project. This is

[45] EIS Chapter 10 Air Quality Assessment, Part B10.2.1, page B10-4.

because the impacts of the N2N Project extend far beyond the rail corridor footprint, particularly so far as they relate to flooding and hydrology, ecology, noise and vibration, and visual impact, for example.

211. However, absent any acquisition, it is not possible for these landowners to make a claim for compensation and consequently, there is no capacity for redress for the impacts of the N2N Project on their properties.

212. Given this, the Just Terms Act cannot be used as a justification to address impacts of the proposal, in our view.

213. The task of a consent authority determining an application is clear. They are to balance the public interest in approving or refusing the project, having regard to the competing economic and other benefits, and the potential negative impacts the project would have if approved.[46]

214. As was held by the Chief Judge of the Land and Environment Court in *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, if the impacts of a proposed development are unacceptable and they cannot be mitigated by conditions of approval, then it follows that the project must not be approved.

215. In the case of the N2N Project, impacts arising from additional afflux, scouring, erosion and gullying of the landscape, impacts to the productivity of the soils, impractical access arrangements, and delays on the movement of grains and crops to market will not of themselves give rise to a claim for compensation.

216. Our view is that if these impacts are not acceptable (which we say that are not) and cannot be mitigated through conditions (which we say they cannot), then it follows that the N2N SSI must be refused.

217. If the impacts are said to be acceptable (and we say they are not), then the Minister, as consent authority, should impose conditions similar to those imposed for State significant mining, petroleum and extractive industry developments, seeking to mitigate the negative impacts arising from the N2N Project.

218. Such conditions have been held to be enforceable by the Court and the benefit for the NSW Farmers and CWA members (and other landowners impacted by the N2N Project) is that they will not be forced into an argument with the ARTC (or Transport for NSW) about whether such impacts are compensable.

219. Further, it seems to us that if the ARTC's position is that such impacts are compensable (as has been stated by the ARTC in its communications with various landowners), then we see that they should have no objection to any conditions being imposed on the project approval that make that plain.

Objection 11: Inadequate fencing standards

220. The provision of adequate fencing between the rail corridor and farmland is a central concern for many, if not all, landowners whose properties will be impacted by the N2N alignment.

[46] *Warkworth Mining Ltd v Bulga Milbrodale Progress Association Inc* [2014] NSWCA 105 per Bathurst CJ, Beazley P and Tobias AJA at [171].

221. In this regard, we note that the ARTC has said that the type of fencing that would be provided is a matter that would be discussed directly with landholders and refined during the detailed design phase. Although generally, unless otherwise agreed, fencing would consist of a standard stock fence (1.2 m high), with gates provided in locations aligning with the access roads and other key access points to the rail corridor from public and private roads.

222. We understand that the ARTC has referred to the minimum (and default) fencing standard along the rail corridor as being a four strand fence (likely barb). A fence of this type is utterly inadequate and also not in keeping with the usual fencing practices of the area. No landholder uses a four strand barb fence as a boundary fence in any section of the N2N Project area.

223. When land is acquired for Inland Rail, the person whose land is being acquired would be entitled to the costs of replacing fences that were lost as a direct result of the acquisition. An alternative to the acquiring authority paying money to the landowner to put in their own replacement fences is for the acquiring authority to complete the works. That is, installing the fences themselves as part of the Project works.

224. Matters regarding the standards for appropriate fencing and the liabilities of an acquiring authority in respect of fencing have been considered by the Court. In particular, we note that:

    (a) the Court has accepted that the fencing standard should be reasonable having regard to what the land is actually being used for – not some future use. Also, that the type of fencing should reflect what the land is being used for – so for example, if land is being used for both goats and cattle, then the more expensive fencing for goats is acceptable;

    (b) the Court has accepted that in circumstances where:

        (i) some agreement is made for fencing to be carried out as an alternative to the acquiring authority paying money to the landowner for replacement fencing; and

        (ii) the land owner is not happy with the standard to which the work has been carried out,

        then the landowner should be entitled to money to replace the fencing to an acceptable standard.

    (c) the Court has accepted that it is reasonable for land either side of a road to be fenced where there was previously no fence because people need to carry out agriculture with confidence that either livestock will not escape and that there is an appropriate barrier between, in this case, the rail line and private land;

    (d) the Court has said that many fences were built a long time ago and are no longer appropriate and should be built to an acceptable standard today to reflect the actual use of the land.

225. In our view, it does not make sense for each landowner to have to negotiate with the ARTC over fencing. In fact, some landowners will not have land acquired and cannot insist that fencing comply with the Court's findings. On that basis, we suggest that if the Minister were minded to grant consent to the N2N SSI (which we say it should not, for the reasons put forward in this objection), then the conditions of consent for that approval should mandate the adoption of a fencing standard consistent with earlier decisions of the Court.

226. The required fencing standards should be clear and specify with more detail the type of fencing and should include details of strainers and creek crossings as well. See for example, the Roads and

Maritime Services standard drawings: https://www.rms.nsw.gov.au/business-industry/partners-suppliers/document-types/standard-drawings/road/fencing.html

227. At a minimum, fencing should comply with relevant Australian Standards for steel products/welded mesh to ensure that the products used are durable. Fencing must also comply with requirements relating to exempt development for rural fencing, comply with manufactures specification, and entrance gates must not open outwards.

Need to refuse the N2N SSI

228. In light of the above, we consider that the Minister is compelled to refuse the N2N SSI as currently formulated.

229. This is because the adverse impacts of the N2N project, including in relation to flooding and hydrology, acoustics, ecology, visual impacts, access and use of land, the farming capacity of the land, and air quality far outweigh the marginal (at best) economic and other public benefits of the development.

230. Balancing all of these relevant factors, and applying the precautionary principle, means that the Minister must find that the N2N Project is contrary to the public interest and should be determined by refusal.

231. If the Minister proceeds with granting consent to the N2N SSI in its current form, and the impacts identified in this submission come to fruition (which we say is likely), then the NSW Government opens itself to a potential claim for negligence on the basis that the harm suffered by the affected landowners was reasonably foreseeable at the time the approval was issued.

232. In the alternative, it is open to the Minister to invite the ARTC to withdraw the application and request that detailed consideration be paid to the following:

(a) a thorough and transparent assessment of the viability of the N2N Project following a route via Coonamble using the existing Dubbo-Coonamble rail line or similar, including on the basis of a properly formulated cost benefit analysis;

(b) the publication of the reference designs for the N2N Project;

(c) a significant increase in the number and length of bridges and the number and size of culverts to ensure that wherever possible, the proposal does not disrupt the natural flows of water across the land, thereby reducing potential for unacceptable afflux, erosion, scouring and flooding;

(d) a reduction in the reliance of culverts, particularly in areas of highly erodible vertisol soils;

(e) amending the Construction Noise Assessment and the Operational Noise Assessment to include an assessment of the actual impacts by reference to existing conditions, a thorough investigation of sleep disturbance impacts, and a commitment to undertaking appropriate acoustic attenuation treatments prior to the operation of the rail line;

(f) expanding the biodiversity impact assessment including to improve site surveys to better understand the existing ecology, and to consider the impact of surface hydrology on relevant species;

(g) review the minimum standards for access to ensure that no landowners are worse off as a result of the N2N Project;

(h) review the impact of the proposed alignment in the fragmentation and severance of land and the creation of land locked sites, and consult with landowners regarding the best options of maintaining access given the use of the land and avoiding the unnecessary sterilisation of agricultural land;

(i) undertake a thorough and more objective visual impact assessment, selecting a broader range of viewpoints, preparing additional photomontages and incorporating viewpoints on both private and public land;

(j) conduct a thorough and transparent assessment of the impacts of the N2N Project on the farming productivity of the region and existing agricultural land uses, including in particular an assessment of the impacts of the project on BSAL;

(k) undertake a comprehensive quantitative assessment of the air quality impacts from the operation of the N2N Project, not just from idling trains, covering potential impacts from a range of potential pollutants (not just oxides of nitrogen); and

(l) a comprehensive fencing standard is prepared which accurately reflects the Court's findings as to what constitutes appropriate fencing and the entitlement of landowners to insist on appropriate fencing, as well of compliance with relevant planning and construction specifications.

233. Finally, we would like to thank the Minister for considering our submission on the EIS for the N2N Project.

234. We understand that the N2N section of the Inland Rail Project gives rise to important issues of principle around impact assessment, not least the application of the precautionary principle to this sort of development in flood prone land.

235. NSW Farmers and the CWA feel that you would greatly benefit from the opportunity to visit Narromine and travel along the proposed alignment to Narrabri, and that this would give you a much clearer understanding of why they (and many of their members) take the position they do. We would be willing to facilitate such a visit, including access to numerous properties along the alignment, on your request and at a time that suits you.

Should you have questions regarding the above, please contact Peter Holt, Special Counsel on (02) 8083 0421 or Peter.Holt@holdingredlich.com.

Yours sincerely

Holding Redlich

Attachment A - Schedule of NSW Farmers and CWA Members – Inland Rail Collective

No	Name	Region
1.	Helen Hunt	Black Hollow
2.	Jennifer Knop	Not disclosed
3.	B Dean	Not disclosed
4.	R Webb	Not disclosed
5.	Lorraine Harrison	Tonderburine
6.	Thomas Lyons	Gulargambone
7.	Ian Uebergang	North Star
8.	Alex Worner	Wombat
9.	A Hernes	Not disclosed
10.	Kevin Galley	Not disclosed
11.	Dave and Karen McBurnie	Balladoran
12.	Peter Dampney	Narrabri
13.	Tony Hill	Cootamundra
14.	Carl Baldry	Bethungra
15.	Gordon Lummis	Not disclosed
16.	Doug and K Wilson	Balladoran
17.	DA Sheperd	Armatree
18.	SJ & DJ Campion	Not disclosed
19.	James Claringbol	Not disclosed
20.	Charles Ryals	Cootamundra
21.	Ian Lambell	Not disclosed
22.	Cath and Dave Peart	Gulargambone
23.	Paul Galley	Dubbo
24.	Ian Dent	Gilgandra
25.	Susan Wilson	Not disclosed
26.	Andrew Deans	Not disclosed
27.	David Campion	Dubbo
28.	Bevan Peart	Tooraweenah
29.	Maxine Finlay	Baradine
30.	Gregory and Dianne Peart	Gilgandra
31.	George Colless / UBL	Gulargambone
32.	Cameron Halfpenny	Mount Tenandra

33.	Ian Friend	Bethungra
34.	Brad Cox	Dubbo
35.	Andrew Peart	Armatree
36.	Paul Anthony Tym	Coonamble
37.	Eric McKenzie	Not disclosed
38.	S A M B Chandler	Curban
39.	Greg Doolan	Baradine
40.	Stuart Mudford	Gilgandra
41.	Ian and Anthony Corderoy	Narromine

Attachment B - Warrumbungles Watershed

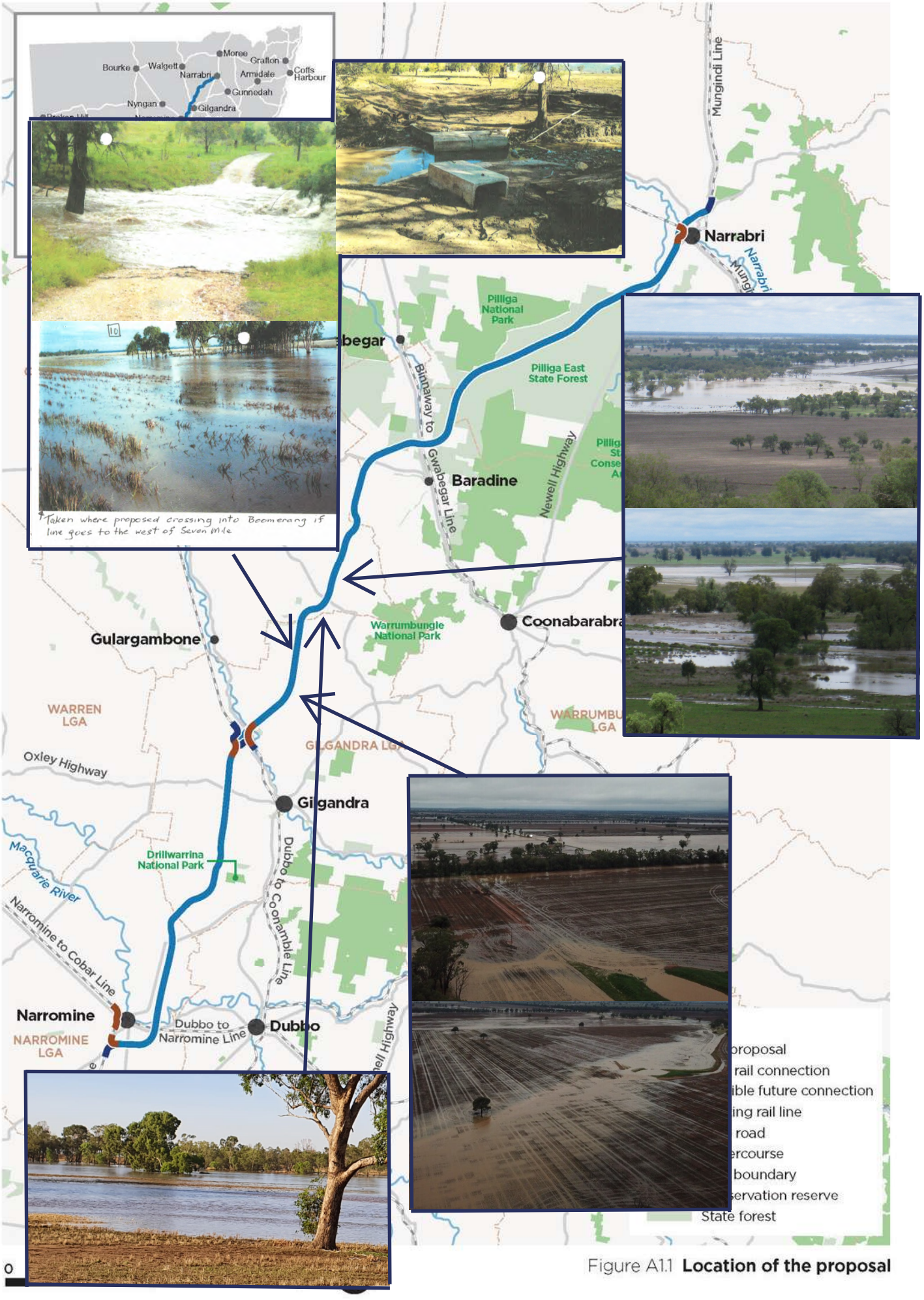

Figure A1.1 **Location of the proposal**

Attachment C – Photographs of gullying causing by earthen bank on neighbouring land

Attachment D - Economic analysis

1. Economic analysis – Narromine to Narrabri (N2N) Inland Rail Project

1.1 Background and request

(a) Post Covid Solutions (**PCS**) has been engaged on behalf of the NSW Farmers Association (**NSW Farmers**) and Country Women's Association of NSW (**CWA**) to provide economic advice in the context of a submission in response to the Environmental Impact Statement (**EIS**) for the Narromine to Narrabri Project (**N2N Project**).

(b) PCS has been asked to review those parts of the EIS that relate to the economic analysis used to justify the N2N Project, including the route selection and to advise on a number of specific questions that have been raised on behalf of the NSW Farmers and CWA collective. The specific questions are:

(i) Question 1 - What is your assessment of the overall Inland Rail Projects costs and benefits, including the costs/benefits for the N2N Project;

(ii) Question 2 - What is your opinion on the use of multi-criteria analysis to choose route selection; and

(iii) Question 3 - Provide an economic analysis on the alternative proposal that would see the alignment use the existing rail line to Coonamble.

(a) PCS has had a chance to review the June 2006 report, July 2010 final report, August 2015 report, the 2016 Infrastructure Australia Report, the official 2017 NSW Treasury Cost Benefit Analysis (**CBA**) guidelines, the Multi Criteria Analysis (**MCA**) for the route selection, the latest economic analysis that supports the NSW application, and all publically available consultant reports and related documents that PCS could readily access.

2. Summary of findings

(a) I am at a loss for words about the Inland Rail Project from an economic, financial, and farming perspective.

(b) There are so many important weaknesses in some proponent reports that there is enough to throw out the Project, the conclusions, assumptions, methodologies, viability, timing, route and service offering into question.

(c) I have previously recommended that some proponent reports be withdrawn and significantly improved.

(d) Inland Rail's CEO Richard Wankmuller reportedly said that detailed investigations undertaken by the Inland Rail team over the last five years identified that additional investment was needed and the cost is now $14.5 billion.

(e) When Inland Rail was only $10 billion it was then questionable if it generated a net economic benefit. That was long before COVID, coal shipments stranded off China, and before barley, wine, lobster and other trade issues.

(f) The issues raised by KPMG in *Appendix B: Treatment of coal demand for the Inland Rail EIS'* on page 84 highlights that at a 7% discount rate, the project has a Benefit Cost Ratio (**BCR**) less than one (BCR = 0.96) and that it takes coal demand from a linked unfunded Queensland Rail (**QR**) project to get the Inland Rail Project marginally over one (BCR = 1.02).

(g) The Inland Rail Project was always marginal at best and there are superior uses of that money. The opportunity costs are significant given that alternatives have much higher BCR's and real net public benefits.

(h) Importantly, the ARTC now have actual and detailed capital (capex), operational (opex), speed, timetabling, public relations (PR) and other useful information from the sections of the Inland Rail Project that are already completed and/or in progress.

(i) The proponents should also have the benefit of access to the latest cost benefit and other information from experts, quantity surveyors, economists, Infrastructure Australia and NSW Treasury.

(j) The use of 2015 data, unrealistic assumptions, costs, benefits and questionable analyses are completely unacceptable. These proponent reports and their proposal should now be rejected by the Department of Planning, Industry and Environment. This is 2021, not 2015, and the world is significantly different.

(k) The NSW Land and Environment Court should now adjudicate especially considering the State of NSW will own the rail corridor and be paid a lease by ARTC and because of the Chief Justice's opinions articulated in *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7.

(l) One of the reasons for refusal of that application and appeal was, *"the economic and public benefits of the mine are uncertain and overstated and not shown to be greater than the public costs of the mine."*

(m) That Land and Environment Court opinion is currently true with Inland Rail's existing proposals, including the N2N Project.

(n) My opinion, based on desktop reviews, is that Inland Rail's total project costs and net benefits for the entire project and including the N2N section, all at a 7 percent discount rate as currently proposed, is expected to have Net Present Value of approximately zero or less (NPV < 0) and a BCR of nearly or less than one (BCR < 1.00). There are many uncertainties, risks and unrealistic assumptions.

(o) There are just so many diverse reasons that this rail project is an unfortunate lemon as originally formulated. It is not a simple fix such as throwing another $5 billion more at the problem as just happened in December 2020.

(p) Starting with the actual known costs would be smart. Known costs will likely have a much smaller variance around them, such as 10 per cent or less. It would then be clearer if the project needed $15 billion or $20 billion in benefits to help it pass a NSW Treasury Cost Benefit test.

(q) Inland Rail also requires a fresh out-of-the-box holistic analysis with synergistic systems solutions.

(r) Further, Inland Rail's applications to the NSW Department of Planning, Industry and Environment should have fully complied with NSW Treasury CBA Guidelines, with the NSW Land and Environment Court rulings, and with Infrastructure Australia's Technical Guidelines. Instead it has relied on optimism bias, unrealistic assumptions, and lack of transparency to help game the results.

(s) This needs to be considered when assessing the adequacy of the EIS for the N2N Project.

3. Question 1 - What is your assessment of the overall Inland Rail Projects costs and benefits, including the costs/benefits for the N2N Project?

3.1 The Inland Rail Project as a whole

a) The current budget for the Inland Rail Project is $14.5 billion. This is far in excess of the initial capital cost (nominal, undiscounted) which was used in May 2016 Infrastructure Australia Project Business Case Evaluation which was $9.89 billion (P50) and $10.66 billion (P90).

b) Based on what we know, we can extrapolate that Inland Rail currently costs $8.5 million for each kilometre. Even before the most recent increase in the budget the Inland Rail was already statistically a project with a Net Present Value (NPV) of zero.

c) The significance of this is that a positive net present value (NPV > 0.00) and a benefit cost ratio greater the one (BCR > 1.00) when comparing all discounted total costs, all relevant benefits, cumulative and threatened species impacts, and their unbiased mean-centred expected values properly monetised excluding any double counting, and over the entire life of the project indicates that the project is in the public interest.

d) Government policy in NSW, as advised via NSW Treasury (2017 p.1) *Guide to Cost-Benefit Analysis*, is to **seek to maximise the welfare of the NSW community** (emphasis added). NSW Treasury also notes that Australia-wide analysis may be required when a CBA is being undertaken for Federal funded projects. Thus, in the first instance guidance is that a CBA of an interstate project or policy include all costs and benefits. Then supplementary analyses estimate the impacts on the welfare of the NSW as whole and relevant local communities.

e) In contrast, a negative or almost zero net present value (NPV < 0.00), or a benefit cost ratio of statistically around one or less (BCR < 1.00), clearly identifies that there are superior alternative projects that can make society much better off. They also identify opportunity costs from foregoing the projects that maximise the NPV and BCR.

f) A low NPV flags that NSW welfare is not maximised and the project is inefficient.

g) There are also other many other capital projects with much higher BCR's and NPVs (e.g., BCR > 4.00 at a 7 per cent discount rate) and large positive NPVs. From an economic perspective, the Inland Rail Project should be stopped and the money spent on other more worthwhile projects.

h) The recent announcements about an additional $5.5 billion for "*project enhancements*" (16 December 2020) were very light on detail on what those project enhancements were and how the identified additional benefits were derived.

i) Infrastructure Australia (**IA**) has previously stressed the need for a full cost-benefit analysis comparing the preferred option against alternative options, including increasing road capacity between Melbourne and Brisbane.

j) The central tenet of the Inland Rail Project is the service offering: summarised as a desire to move freight via rail between Melbourne and Brisbane in less than 24 hours, at a cost comparable to or better than road, with a 98 per cent reliability and is available when the market demands.

k) There are a number of important assumptions that underpin the Inland Rail Business Case that no longer hold true:

    (i) **Costings**. The Business Case was advanced on P50 rather than the more realistic P90 costings. Those costings have not proven to be accurate.

(ii) **Discount rate**. The Business Case results are very sensitive to the discount rate. The Business Case failed to adopt the standard 7 per cent discount rate instead preferring to use a 4 per cent discount rate. The Business Case also in some instances failed to disclose the impact of a 10 per cent discount rate.

(iii) **Price of Oil**. The Business Case considered oil prices at (USD) $70, $120, and $200 per barrel. High oil prices, and with high oil and fuel costs, the benefits of Inland Rail increase significantly. The assumed USD $120 a barrel is more than double the current and forecast prices which is somewhere around USD $50-55 a barrel. A low oil price scenario (US $50 per barrel) by 2030 would result in a 2 per cent decrease in total rail freight.

(iv) **Introduction of B-triples or super B-doubles**. The introduction of higher productivity vehicles for inter-capital freight on the Hume and Newell Highways has reduced the price competitive of the Inland Rail Project relatively to road.

(v) **Coastal shipping**. To the extent that empty ships can move freight cheaply and that full coal ships are currently idled off the coast of China may be more relevant. This may also be relevant if an extra $5 or $6 billion is needed to get across Brisbane into the Port.

(vi) **Coal exports**. If no capital investments are made to the Western Line or Brisbane metropolitan rail network to enable coal train lengths to increase from 650 metres to 1,010 metres, coal volumes would be restricted to 8 million tonnes per year as a result of reaching the cap of 87 coal paths. If China continues to restrict imports of Australian coal then the producers must diversify markets or cease operations at some point. If some mine expansions are not approved, coal could be even less.

(vii) **Coal Prices**. Coal prices vary with the type of coal (e.g., hard coking coal and thermal coal), the reference prices in Australia, a discount such as 90% of the reference price, and the relevant exchange rate (including AUD and USD rates), and trade disputes.

3.2 The Present Value of Costs

(a) At a cost of $10 billon, when measured at a 7 per cent discount rate, Inland Rail has a Benefit/Cost Ratio (**BCR**) of 1.02, meaning that the benefits are roughly equal to the cost. Under a scenario in which all sensitivity factors were applied at once, the BCR was 0.9 using the 7 per cent discount rate and P50 capital costs without Wider Economic Benefits (**WEB**), and 1.0 including WEBs.

(b) Even the 1.02 number should be treated with caution. The assumption in the Business Case was that a complementary investment in Western Line would increase the BCR from 0.96 to 1.02 based in what is noted in KPMG's Appendix B.

(c) From the outset the economic justification for the Inland Rail project was only marginal. This is reflected in Infrastructure Australia's Project Business Case Evaluation (May 2016) which clearly states that:

"Infrastructure Australia notes that the options assessment undertaken by the proponent did not robustly consider the value for money and deliverability of the full range of options. Infrastructure Australia would prefer if the proponent could present a more complete, transparent and objective assessment of the options considered, with greater detail of the relative costs and benefits of alternative options. A full cost-benefit analysis comparing the preferred option with the principal alternative option – increased road

capacity between Melbourne and Brisbane – would facilitate greater scrutiny of the relative merits of the two alternative options."

3.3 Revenue will not cover capital costs

(a) While the economic analysis indicates that Inland Rail will deliver a net economic benefit to Australia, the expected operating revenue over 50 years will not cover the initial capital investment required to build the railway—hence, a substantial public funding contribution is required to deliver Inland Rail.

3.4 Narrabri to Narromine

(a) The ARTC has not advanced any economic argument to justify the N2N Project. This is because it is said that *"the results will not capture the full economic impact that is expected to be delivered upon completion of the Inland Rail program."*[1]

(b) Similarly it says that:

"Although further costs and other technical and economic data is expected as each project progresses through design development, the 2015 Inland Rail program Business Case endorsed by the Australian Government is currently the most detailed assessment for the Inland Rail Project. For this reason, and in the interests of maintaining consistency, cost and demand profiles for the Inland Rail Project economic assessments have been based on the 2015 Inland Rail program Business Case."[2]

(c) Clearly these statements are nonsense. It is the ARTC that has chosen to advance each part of the Inland Rail Project as separate projects. The ARTC should also have actual costs from the newly constructed Parkes to Narromine that can be used to update the anticipated costings for the N2N section. These actual costs will have less expected variance and bias. The Inland Rail Business Case has been discredited. The ARTC should not be able to progress the N2N Project without a robust cost/benefit analysis that fully complies with NSW Treasury and IA's guidance and technical notes.

(d) We suspect that the ARTC are unable or unwilling to advance such a case because the costs have risen, the assumptions that underpin the Business Case about oil and coal prices, and moving freight off the road no longer hold. All previous data is pre-COVID. As with other sections of Inland Rail there are very few tangible benefits to the communities in Gilgandra and Coonamble and a considerable number of costs.

4. Question 2 - What is your opinion on the use of multi-criteria analysis to choose route selection?

(a) Decisions on route selections have been made partially on the basis of a sub-optimal Multi-Criteria Analysis (**MCA**).

(b) The choice of a MCA rather than a cost/benefit analysis (**CBA**) is a pragmatic one. Driven by a desire to select routes that best fit the articulated 'inflexible' service offering rather than looking at the costs and benefits of the project as-a-whole and synergistic opportunities in specific areas.

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[1] KPMG's Economic Benefits Assessment on page 8 of Inland Rail Narromine to Narrabri: Environmental Impact Statement Economic Assessment - Revision C – 21 October 2020

[2] KPMG's Inland Rail Narromine to Narrabri: Environmental Impact Statement Economic Assessment - Revision C – 21 October 2020, page 28

(c) It is important to restate that a MCA is not a CBA. A MCA compares and sums metrics in different, incompatible dimensions. A MCA is a form of 'non-monetary' valuation. The resulting score has no real units and no meaning beyond the specific piece of analysis. Even the meaning within the analysis is questionable due to the subjectivity and lack of transparency around conversion, scores and weights.

(d) In contrast a CBA is a 'monetary evaluation' where all units are in monetary terms, and where impacts are robustly sensitivity tested to produce mean-centred expected values. In contrast with other methods such as MCA is 'non-monetary' and ordinal evaluation. CBA is standard practice and has been for decades. CBA Master Guidelines and special guidance for coal mines, coastal erosion, sea level rises, housing, electricity savings, biodiversity losses, transfers, problem shifts, discount rates, re-switching etc. are available.

(e) NSW Treasury (2017, p67) state:

"A CBA with valuations is always preferred over multi-criteria analysis (MCA). MCA may be used only in rare cases where it is not possible or practical to value costs or benefits in monetary terms."

"Unlike CBA, MCA does not require that benefits exceed costs. MCA carries the risk that the program/project might be inconsistent with improving welfare, and that doing nothing might in fact be preferable. In practice MCA can also inadvertently include contradictory criteria, making it difficult to interpret the results of the analysis for fiscal decision making purposes."

"Given its disadvantages, notably the lack of any valuation principles, MCA should not be used as a substitute for CBA."

(f) In the words of the ARTC the:

"Achievement of the Inland Rail Service Offering requires a rail line that is as flat and straight and fast as possible."

(g) It is those considerations flat/straight/fast that are weighted heavily in the MCA done to date for the project.

(h) The problem with the focus on the service offering is that the design of a project to that service offering results in very few benefits beyond those for residents of Melbourne and Brisbane highlighted in the Business Case (and assuming the assumptions hold).

(i) The immediate concern is that because the focus of the design of the project has not been actively looking for benefits to regional communities the ARTC now's says that additional investment is required through further linkage funding to bring benefits to regional communities.

5. Question 3 - Provide an economic analysis on the alternative proposal that would see the alignment use the existing rail line to Coonamble.

(a) There has been no robust economic cost-benefit analysis of an alternative proposal that would follow the existing rail line through to Coonamble.

(b) The reason for this is that the focus has always been on identifying opportunity to gain time against the service offering and that anything that increases time would not be considered, even if the resultant benefits could in a cost/benefit sense offset any additional travel time.

(c) From an economic perspective there are a number of tangible benefits that would arise from changing the alignment.

(d) There is currently very little in the way of economic benefits to either Gilgandra or Coonamble as part of the Project as it is currently formulated. The most that can be said is that Gilgandra will get a work camp and the rail line will run close to the disused grain silo at Curban.

(e) From Coonamble's perspective, it is anticipated that most of the workforce and the regional spending will accrue to centres like Dubbo where people would commute weekly to work rather than to rent or buy in those local government areas. Further, there may be four proposed work fronts, although ARTC works normally tend to progress along the track with the same crews.

(f) In terms of the dis-benefits, there are the noise and vibration impacts of the new rail line, the enduring flood impacts, and the loss of productive farm land, the delays/deaths caused by the additional level crossings and the social disruption caused by the establishment and operations of work camps.

(g) The level of connectivity between the existing grain line running between Gilgandra and Coonamble and the Inland Rail Project is currently very poor.

(h) The current proposal does very little to improve things. One map suggests part of the Dubbo Coonamble line may be removed, another suggests connections may be added sometime later.

(i) The focus of Inland Rail is currently more about moving containerised freight from Melbourne to Brisbane than moving grain from the region to export markets.

(j) The current arrangements see grain shipped from Coonamble and Gilgandra to the Port of Newcastle and Port Botany, via Dubbo. Those arrangement also leave very little opportunity for value-added services.

(k) The current planned connection is limited to a West to North connection (i.e. from Coonamble, ability to go north only) and an East to South connection (i.e. from Gilgandra, ability to go south only).

(l) The Coonamble line is below the Inland Rail operational configuration. Works required to bring the Coonamble line up to a standard to comply with the Inland Rail Service offering would include formation reconditioning plus new ballast, 60 kg rail and concrete sleepers.

(m) Culvert and bridge structures would all need to be assessed for increased capacity and flooding and may need to be replaced, although no relevant flooding has been reported on the existing Dubbo and Coonamble corridor and the line has been properly maintained.

(n) Less land needs to be acquired, meaning that the impacts (and legal costs) associated with severance are also less significant. This is because the farms that already adjoin the existing alignment have been historically developed with this limitation in mind and no accidents.

(o) Coonamble already has significant infrastructure in and around the vicinity of the existing rail line including large depots, silos and other storage infrastructure, and Coonamble Shire Council has already been investing in the maintenance of growth of this infrastructure. As opposed to Curban where much of the existing infrastructure has been decommissioned for some time. For example, the landholders say the Curban Silos have decommissioned and have been closed somewhere between 6-8 years and didn't even reopen last harvest, which

was one of the biggest harvests in recent years. In recent times grain was railed out of Coonamble in containers by Agrigrain inferring the economic viability of that practice.

(p) Redirecting grain North-South rather than East-West creates opportunities to access both feedlots in South East Queensland and mills and Ports in Victoria.

(q) The location of the alignment to the west of the Castlereagh River up to Coonamble would avoid the crossing of the Castlereagh River at Curban which we understand may have also significant flooding and hydrology issues.

(r) The existing rail line has already been earmarked for significant upgrade works as part the Country Lines Improvement Program. This means that some of the funding for this part of the Project could be redirected towards this alignment, rather than the proposed alignment, thereby reducing costs and potential 'train-kills.'

(s) Safety benefits for the community, residents and seasonal workers, as a result of avoided incidents, removing dangerous vehicles from the road, reduced distances travelled by heavy trucks which can also damage roads and rail crossings, and make them all more hazardous.

(t) Melbourne to Brisbane rail traffic generated by the Inland Rail Project would be in addition to the existing rail traffic using other lines that the proposal interacts with, including for example the Dubbo to Coonamble Line. The trains could be a mix of grain, bulk freight and other general transport trains as originally envisioned.

(u) The demise of the Coonamble to Dubbo rail line, and loss of Coonamble grain, wheat, barley, chickpeas and canola, being directly loaded into containers, could accelerate the use of larger trucks. Highly productive assets in Coonamble can become stranded without direct access to Inland Rail. A Coonamble Special Activation Precinct is recommended.

5.1 Potential Disadvantages

(a) The principle disadvantages of greater utilisation of the existing track to Coonamble are said by the ARTC to be as follows:

(i) The route and the travel time are said to be longer. The ARTC claim that the extended route would jeopardise the operational business case requiring sub-24 hour travel time from end to end. Analysis by NSW Farmers in March 2018 identified that that additional travel time was 4 minutes (when the savings associated with going through the Piliga State Forest were considered).

(ii) The current alignment was said to be relatively flood-free and could capture potential fill material for construction. We note that we question this assertion regarding flooding and hydrology, which will be dealt with by way of a separate expert report.

(iii) The ARTC claim that a route travelling to Coonamble is longer and therefore more costly in time, dollars, and harm to the service offering.

(iv) But there are other locations where up to 120 km can be removed and speeds improved as demonstrated by the National Trunk Rail (NTR) 1,595 km proposal which saves 1 hour.

(b) Excluding opportunities such as the Coonamble line, the largest grain, wheat, barley, chickpeas and canola area in Australia, and a Coonamble Special Activation Precinct, is

amazingly hypocritical and short-sighted considering the importance of the unfunded QR line project, coal trade issues, and NS2B (Inland Rail – North Star to Border) farmers' solutions summarised by Holding Redlich in its letter of objection to the EIS for the NS2B Project on 6 October 2020.

6. Conclusions

(a) The Inland Rail Project has a NPV of zero or less. Many of the assumptions that underpin the Business Case no longer hold.

(b) As part of the EIS, the ARTC have not advanced any cost/benefit analysis of the project as a whole (having regard to updated information and more robust assumptions) or of the specific N2N Project and synergistic options.

(c) Decisions around route selection have largely been driven by Multi-Criteria Analysis. The central tenant of those analyses was the service offering and the desire to keep the travel time below 24 hours.

(d) No cost benefit analysis has been carried out on the proposal to use the Coonamble rail line and synergistic options to help increase the projects NPV and BCR.

(e) Greater use of the existing Dubbo and Coonamble rail line and adjacent lands has a number of benefits and few disadvantages.

(f) However, to do so would require the N2N SSI to be refused in its current formulation, with more detailed holistic analysis required to be undertaken adopting a holistic cost-benefit problem shifting analysis approach to drive up the real and enduring benefits to the community and to Australia thereby generating a stronger BCR and NPV. At a minimum, the CBA must be complaint, robust, transparent and pass the public interest tests required.

(g) At a 7 per cent discount rate, a low NPV and BCR flags that NSW welfare is not maximised and the project is inefficient. A high NPV and BCR says that NSW and Australia are better off if done properly.

Project 5124
4 February 2021

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Dear Georgia

INLAND RAIL - NARROMINE TO NARRABRI PROJECT
ACOUSTIC REVIEW

1 INTRODUCTION

As requested, we have conducted an acoustic review of the proposed Inland Rail - Narromine to Narrabri Project which is proposed by ARTC. In particular we have reviewed the following documents that have been supplied in support of the EIS application.

- Noise and vibration assessment – construction and other operations - Technical Report 8 prepared for ARTC by JacobsGHD ; and
- Noise and vibration assessment – operational rail - Technical Report 9 prepared for ARTC by SLR Consulting.

The following sections detail our findings which are provided so that the project can be constructed and operated in a manner that protects and preserves the acoustic amenity of residents and other sensitive receivers.

2 NOISE FROM CONSTRUCTION AND OTHER OPERATION

We note the following aspects with respect to Technical Report 8 prepared by JacobsGHD.

1. Ambient noise levels at surrounding receivers have been measured and determined to be very low, in many cases below 30 dB(A) in all periods of the day. As a result, JacobsGHD have adopted minimum background noise levels in accordance with the NSW Industrial Noise Policy, which has been superseded by the Noise Policy for Industry. Application of this policy would result in an applied RBL level of 35 dB(A) for the day period and 30 dB(A) for the evening and night periods.

   However, it is worth noting that the Interim Construction Noise Policy is silent on adopting minimum background noise levels for the purpose of establishing Construction Noise management levels. Therefore, adopting minimum background levels will somewhat downplay actual impacts of construction noise on the sensitive receivers because assumed levels are higher than actual recorded ambient noise levels.

2. Construction noise is likely to occur only during normal daytime construction hours. Given the low ambient noise levels and potential for impact it would be suitable to impose a condition on any approval for the project requiring construction noise to be limited to normal daytime construction hours to ensure that the impacts on sensitive receivers are acceptable.

   Mitigation techniques and management strategies should be applied as per the TfNSW Construction Noise and Vibration Strategy (ST-157/4.1), again this should be conditioned as part of any approval or the project.

   It should be noted that any "out of hours" work should only be considered where a separate assessment of noise and vibration is conducted and determined to meet constriction noise management levels.

3. Sleep Disturbance criteria is presented in the report based on the Road Noise Policy (RNP) and the Noise Policy for Industry (EPA2017) as L_{Amax} - internal 55 dB(A) (RNP) and 52 dB(A) external (Noise Policy for Industry). The RNP internal level equates to an external level of 62 dB(A) external (allowing for a 7 dB reduction across an open window). Further there is no mention of the more relevant WHO criteria which equates to an external level of 49 dB(A).

   Assessment of sleep disturbance in Tables 5.51 and 5.12 clearly illustrate that there is significant potential to adversely impact on large numbers of noise sensitive receivers if construction is to occur in the night period. This finding validates the recommendation in point 2 above, that works should only be conducted in normal working hours unless a further detailed assessment determines that noise adverse impact will occur at sensitive receivers.

3 OPERATIONAL RAIL NOISE

A review of the **Operational Rail Noise** prepared by SLR has been conducted with respect to noise. The following aspects being noted:

Continuous Rail Noise

1. The noise criteria for operational noise are based on the Rail Infrastructure Noise Guideline (RING). The 15 and 9 hour L_{Aeq} noise criteria are absolute levels that do not reference existing background noise levels and are significantly higher than existing ambient noise levels. Therefore in a low noise environment the adoption of these criteria is likely to be of greater impact than an urban environment where ambient noise levels would be higher.

   That is to say that even where compliance is predicted, the rail operations will result in a significant change in the noise environment at surrounding sensitive receivers. Compliance with noise criteria does not mean that there will be no impact at surrounding sensitive receivers.

2. Input assumptions and modelling techniques are consistent with the Secretaries Environmental Assessment Requirements (SEARs). Predicted noise levels in accordance with the Kilde 130 method are considered reasonable. However, it is worth noting that the modelling assumes rolling

stock and track in good condition and as such it is likely that higher noise levels and resultant impact would occur once the track has been operational for some time.

It is noted that an allowance for 'wheel rail interaction" (wheel squeal) has been included in modelling however there is no indication as to where this has been modelled, and as such, the impacts on surrounding receivers cannot be clearly determined.

3. Up to 58 receivers have been identified as requiring mitigation however options for treatment are only presented and specifically identified only to say these can be adopted "where feasible and reasonable". This approach is considered unacceptable and no clear definition of allowances to be made to mitigate noise impacts at residences has been made. As a result, it is questioned how the successful contractor can allocate sufficient funds in their tender to accommodate the necessary noise mitigation.

   It is also noted that the assessment has been conducted from aerial imagery which does not account for specific construction type (such a lightweight fibro constructions) or occupancy / sensitivity of these receivers. As a result, the assumption of noise reduction across a building façade needs to be verified by a site inspection. Further there may be additional noise sensitive receivers that have not been identified in the aerial survey.

4. The report states "*The noise levels at the majority of sensitive receivers are within 3 dBA of the criteria, which is a relatively minor margin above the trigger levels in the context of a perceptible difference between the trigger level and the predicted noise levels*." This statement could be construed to be misleading the reader in that a few more decibels means that there will be no impact. Compliance with the noise criteria will still impact on receivers and it is not acceptable to dismiss a "slight exceedance" of the RING criteria as imperceptible.

   Commentary such as the above tends to mislead occupants of sensitive receivers into thinking the exceedance will result in no noise impact. In reality there will be an impact and given that the predictions are based on good track and rolling stock any residences exceeding the criteria should be treated appropriately.

Sleep Disturbance

The intermittent noise associated with road and railway operations at night has tendered to be the major issue for residences surrounding transport infrastructure projects, particularly in cases such as this where a new line is proposed and there is no existing rail transport noise. This is evidenced by numerous complaints on the Pacific Highway in Northern NSW which lead to a Parliamentary Enquiry into the issue of intermittent truck noise at night.

Whilst the SEARs specifically require an assessment of Sleep Disturbance only a cursory review of sleep disturbance has been conducted and has been dismissed with comments such as "*The WHO acknowledges the establishment of relationships between single event noise indicators, such as L_{Amax}, and long-term health outcomes remains tentative.*

In reality the one issue that has the greatest potential to impact on surrounding receivers is the maximum noise levels and associated sleep disturbance. Therefore, a more detailed assessment with a corresponding level of importance should be applied rather than dismissing the issue as too hard.

In relation to the presented assessment, we draw to your attenuation the following;

1. The SLR assessment incorrectly applies the L_{Amax} criterion of 85 dB(A) to the issue of sleep disturbance. This criterion is significantly different to the criteria presented by JacobsGHD in the construction noise assessment and one would expect some consistency in both assessments.

   The report then offers a more reasonable criterion based on WHO recommendations of an internal L_{Amax} of 42 dB(A) which equates to an external level 49 dB(A), such a level is significantly different from the RING criterion offered by SLR of 85 dB(A).

2. Adoption of the WHO sleep disturbance L_{Amax} will result in all sensitive receivers within 1 km of either side of the railway being impacted. It can be expected that significantly more sensitive receivers are located within that area than the 35 identified by SLR (based on the 85 dB(A) criterion).

   Again, the report's author seems to dismiss the potential impact by commenting "*Individuals will respond to noise differently, and just because railway noise can be audible does not mean it will cause disturbance or annoyance impacts*". Such commentary is considered unhelpful and not in the context of potential impacts that may occur if the issue of sleep disturbance is not correctly assessed.

3. Mitigation measures options are presented in the report to be implemented "*where feasible and reasonable*" however it is unclear what measures are to be adopted at identified receivers or between the track and the receiver. At present the report lacks clarity or commitment.

   The statement that "*Where external rail noise levels are validated, through measurement, to exceed the assessment criteria a potential option is to mitigate the intrusion of rail noise within the affected property"* considered is totally inappropriate. Noise modelling should identify receivers and treatments to be implemented and validated prior to completion and operation of the rail line, not after operation of the railway. Such an approach would be difficult to implement and sensitize receivers prior to any treatment works.

In conclusion, the review of the Operation Noise report indicates that whilst predicted noise levels appear reasonable the mitigation measures to be adopted at specific locations have not been clearly defined. As such the responsibility for design and implementation lies with the successfully contractor and provides no surety that suitable measures will be implement on site. The approach adopted in this assessment differs from other projects where indicative mitigation measures, such as extent of barriers and levels of façade treatment are specified and presented to demonstrate that compliance with site specific noise criteria will be achieved.

More important/y, the noise assessment fails to adequately assess the potential for impact on Sleep. This is the issue that is likely to generate the greatest impact at surrounding receivers. Unless properly

addressed a repeat of the complaints experienced in the past on similar rail and road projects is likely to occur. This potential impact is likely to be exacerbated by the fact that the project is a new rail corridor where a new noise source will be introduced into quiet acoustic environments.

4 RECOMMENDATIONS

It is recommended that a supplementary noise assessment be conducted to address issues raised in the proceeding section in particular the assessment of sleep disturbance should be assessed in detail with a commitment to meeting WHO noise criteria.

Based on the findings of the revised assessment potentially affected residences should be identified and indicative treatment such as barriers and property treatments should be specified. In the case of property treatments degrees of treatments can be provided depending on the predicted levels of exceedance so that the successful contractor can commit, cost and allow for mitigation measures that are considered reasonable for the successful completion of the project.

The above works should be conducted prior to any approval so that the Minister can be satisfied that the impacts are acceptable and that appropriate mitigation measures can/will be undertaken.

In addition, it is recommended that the conditions of consent that are applied by the Department of Planning be best practice, as illustrated in the recent approval for Coffs Harbor Bypass:

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-7666%2120201108T234139.951%20GMT .

These conditions include:

- An independent project Acoustic Advisor (AA)
- Construction Noise and Vibration Hours of Operation and Management including out of hours operations
- Operational Noise and Vibration Criteria
- Noise Mitigation
- Operational Noise Validation
- Operational Noise Compliance Report

5 CONCLUSION

A review of the **Noise Reports** supporting the EIS indicates that the assessments do not adequately define the measures to be adopted to successfully mitigate the impacts of operational noise and vibration. In addition, the assessment of Sleep Disturbance is inadequate and does not identify potential impacts or mitigation measures to be adopted prior to operation of the project.

In order to clearly define the measures necessary to mitigate noise impacts a supplementary report should be prepared that can be supplied in the tender so the detail design reflects the requirements of the SEAR's. In addition, it is recommended that "best practice" conditions of approval be applied including the appointment of an Acoustic Advisor consistent with current practice.

Yours Faithfully
ACOUSTIC DYNAMICS

Brian Clarke
Senior Associate

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Technical Report 11 Agriculture and Land Use Assessment Review

The following comments and observations were collated by the CEO of the Country Women's Association of NSW, Ms Danica Leys, in conjunction with the NSW Farmers Inland Rail Taskforce Chair, Mr Adrian Lyons, to support the work of Holding Redlich in their review of the Environmental Impact Statement ("EIS") for the Narromine to the Narrabri ("N2N") section of Inland Rail. These comments focus Technical Report 11 - Agriculture and Land Use Assessment. The credentials of the authors are briefly outlined below:

Ms Danica Leys: *currently CEO of the Country Women's Association of NSW. Has extensive agronomic background and experience in North-West and Central-West NSW (including throughout the project area) across a range of farming systems as a Commercial Agronomist and Technical Agricultural Sales Representative. Extensive experience in policy and industrial relations law. Holder of a Bachelor of Science in Agriculture (Hons), majoring in agronomy from the University of Sydney and a Bachelor of Laws from the University of New England. An admitted solicitor in NSW.*

Mr Adrian Lyons: *background as a mixed cropping and grazing farmer in the Coonamble, Walgett, and Quirindi areas since 1989. Holder of an Advanced Certificate in Business from Macleay College and has completed an AWB leadership course. Held a range of representative positions including founding Chairman of the Coonamble Farming Cooperative, Vice-Chair of the Coonamble Branch of NSW Farmers Branch, general member and Vice-Chair of the NSW Farmers Grains Committee and member of the NSW Farmers Drought Taskforce and has developed a range of agricultural management apps. Currently volunteers his time as Chair of the Presidential NSW Farmers Inland Rail Taskforce (a position held since the taskforce's inception). Currently farming 5000Ha in the Coonamble/Gulargambone district (not currently impacted by the project proposal), utilising modern farming practices such as zero and minimum tillage, camera spraying and applying water use efficiency measures to all farm operations along with a high-tech on-farm grain storage and loading/unloading facility.*

Introduction:

In summary and overall, Technical Report 11 ("the report") section of the EIS tends to minimise, underestimate and dismiss agricultural impacts along the N2N section of the Inland Rail project, and has failed to adequately address the SEARS issued to the proponent, specifically SEARs sections 5.2 (a), (b), (d) and (f), and section 5.6.

These inadequacies are a direct symptom of deficient community and landholder consultation, combined with no meaningful ground-truthing of issues, and a clear lack of understanding of the dynamics of modern farm businesses. The report repeatedly states that extensive consultation has taken place in and around the project area. This sentence gives the impression that directly impacted landholders have been consulted about the agricultural impacts to their properties. We know this is not true, as we have approximately 40 directly impacted landholders who are members of our collective and they have not been approached in relation to any agricultural impact assessment work and have not held one-on-one engagement conversations with Inclusive Engagement nor JacobsGHD in relation to agricultural impact assessments.

By their own admission, the proponent has stated that the agricultural impacts have been assessed utilising a predominantly desktop approach, combined with one drive of the N2N area (which would have involved access via public roads only, not the actual farms impacted), during the height of the drought in November 2018. This is a woefully inadequate approach that fails to recognise and accurately document this highly varied agricultural area, and also leads to a report that is broad in nature, lacking specifics and not taking into account seasonality influences.

We provide some specific comments on various sections of the report below and have numbered our headings to align with the numbering used in the report.

4. Existing Environment

Land use mapping relies on one data set only being September 2017, which was "ground-truthed" in November 2018. There are a number of issues with this approach. The first issue is that the ground-truthing described did not involve actually seeing and examining the proposed line itself. We know this as it intersects at least 121 private properties and landholders have not, as far as we are aware, hosted Inclusive Engagement, nor JacobsGHD on their properties for one-on-one consultations. The use of the phrase "ground-truthed" is a stretch, as any on-ground examinations could have only been done from a vehicle on a public road. There are stretches of this rail proposal that no person from the Australian Rail Track Corporation ("ARTC") or their representatives, have ever stepped foot on or seen. The second issue with this approach is that in November 2018, NSW had entered a severe and prolonged drought. Ground-truthing exercises undertaken at this time would have shown the farming area impacted to be a in a state of drought rather than under crop or improved pasture. This inaccuracy is reflected in the figures in

Table 4.1 where it is asserted that grazing of modified pastures accounts for only 11 percent of the study area, when local knowledge tells us that there is far more improved pasture in the alignment area than native pasture. Lastly, there remains an issue in relation to utilising the most recent data sets available to provide an accurate picture of the agricultural impacts in the area. In many respects, 2020 was an exceptional year for the project area agriculturally. The figures used to calculate and illustrate agricultural impacts should include the most recent data sets available.

The report also does not consider how much of the grazed or improved pasture areas could be used for cropping. Much of the grazing area overlaps significantly with high capability soils and may go into and out of cropping over long term cycles and various ownership scenarios.

The climate assessment methodology used in s4.2.1 is significantly flawed in that the data set for Trangie has been used for the southern end of the N2N alignment. Trangie has a much different climatic profile than Narromine and a significantly different climatic profile that Gilgandra. Trangie has a 498 mm average annual rainfall, Gilgandra's average annual rainfall is approximately 604mm and Narromine is 597mm. The data for Narrabri and Trangie will also not reflect the reality of what occurs in the Warrumbungle Watershed areas during flooding events. These issues need to be well understood in the context of agricultural impacts, particularly in relation to high value, yet fragile, soil profiles that exist right across the project area. The Trangie data set should not be used at all to inform the agricultural impact assessment for N2N.

Section 4.4 briefly outlines the environmentally sensitive lands and processes. Our review and commentary in this document is restricted to Technical Report 11 only so we hope that there will more detail in relation to environmentally sensitive areas in other areas of the EIS, as the detail in Technical Report 11 is seriously lacking. We note that it fails to mention, for example, the issue of Hudson Pear management and in particular the Qanda-Five Ways Hudson Pear Management Plan 2019-2024.

In section 4.6.2 impacts to traveling stock reserves (TSR's) are highlighted and details of up to 7 TSRs areas that either straddle or are close to the proposed rail line are outlined. There are however, in this or any other section of the report, no details given as to how work, health and safety issues are to be managed in TSRs. There are serious and unanswered questions as to how crossings are to be built. The proponent has not addressed SEAR number 5.2 (d) that specifically asks for consideration of grade separated access to occur in areas where there is likely to be crossing of the line by vehicles, machinery and livestock.

There is no detail in the report in relation to how land that is only temporarily needed for the project during construction phases is to be rehabilitated. The techniques used for rehabilitation have a bearing on the ability of rehabilitated land to be used for

agriculture into the future and it is important that the rehabilitation techniques and proposed approach are fully outlined and understood.

5. Land Use, agricultural resources and current enterprises within the regional study area

The proponent states that the project is likely to result in a negative economic impact of $258 million in the area project area (which, as a matter of interest, appears to exactly match the asserted economic benefits of the proposal – see page 106 pf the report). This needs to be measured against a gross value of agricultural production across the proposal site of $998 million, meaning that there will be a 25% loss of agricultural production from the project area forever. This impact is likely to be worn wholly and solely by the landholders in the permanently impacted 1300 Ha of alignment, not the whole study area. This does not include the impacts of severance, lost area for farming, noise and vibration and other social impacts.

The report correctly points out that relying on economic figures from 2015/16 is inaccurate, mainly due to drought. JacobsGHD then attempt to place a value on agricultural production in the area utilising NSW DPI data and their own knowledge. We agree that this is a better way to attempt to understand the agricultural economic impacts across the project area, but it is based on the flawed assumptions made in Table 4.1 in relation to the breakdown of cropping, improved pasture and native pasture areas. This snapshot approach of one year only does not take into account the cropping and grazing cycles that exist on many parcels of land due to management and ownership. It is a fact that much of the area characterised as grazing (either improved or native pasture) is actually suitable for high value cropping as well, it just may not have been cropped for some time. This flawed assumption means that the calculations relied upon to assess economic impacts (in an agricultural sense) cannot be relied upon with any degree of confidence.

6. Consultation

The proponent has provided one page, out of 125 pages, to outline and describe their consultation to date. This clearly demonstrates the lack of genuine and real engagement that took place with impacted landholders across the project area. This approach is not limited to the agricultural impacts report, but is a theme that we have witnessed time and time again in relation to all aspects of the project.

The consultation methodology was not outlined, simply because there was not one that would stand up to scrutiny. This section of the report also fails to outline the many and failed consultation attempts that ARTC have been undertaking in some way since as 2016. As inadequate as these consultation sessions were, there was still data captured that has been not incorporated into this report.

Undertaking cursory and questionable conversations with those in “and around” the project area, should not replace the requirement to genuinely consult with those that

are actually, and directly, impacted. There are further comments about inadequate consultation in other sections of the Holding Redlich submission.

7. Assessment of Impacts

The vastly inadequate section outlining impacts on Biophysical Strategic Agricultural Land ("BSAL") in section 7.2 is highly concerning. This section seeks to intentionally minimise the impact of the rail line on BSAL. Additionally, a site verification process has not been undertaken as there is no requirement to do so under the Mining SEPP. When considering the cumulative impacts of this project, alongside other extractive projects in and around the area, we consider it critical that site verification be undertaken to verify the true extent of impacts on BSAL.

DPI describes BSAL as *"land with a rare combination of natural resources highly suitable for agriculture. These lands intrinsically have the best quality landforms, soil and water resources which are naturally capable of sustaining high levels of productivity and require minimal management practices to maintain this high quality."* It is land that has been identified as being of high value to the agricultural industry across the state. Major projects have previously failed to gain approval because the impacts on BSAL have either not been addressed, or been deemed to be too high in terms of area lost.

The impacts on BSAL from this project are indeed, significant. The proponent reports that the proposal site contains 90.9Ha of BSAL. The area of impacted BSAL is reported by the proponent as representing 0.064 percent of the regional study area which is correct, but this is the incorrect comparison to be making. The percentage of BSAL lost should be viewed in the context of the 1300Ha to be permanently removed as a result of the project. In this context, the there is a 7% loss of BSAL. Any loss of BSAL is concerning, and a loss of this magnitude is significant, especially when considering other route alignments that would impact less on this finite resource.

Whilst there is no requirement for a site verification certificate for BSAL, we strongly suggest this occur, especially in light of the impacts outlined above. The reason for this is that the land capability class maps clearly show large areas of land that are classified as either "Very High" or "High" capability land that if examined, would be also likely to be classified as BSAL. The maps provided by the NSW Government in relation to BSAL are a baseline indication only of the areas of BSAL in existence. In reality, the areas of BSAL in NSW and in the project area, are likely to be much higher and given their importance to the broader agricultural industry, it is important that the true area of BSAL it is well known and understood.

Indirect effects on BSAL have not been considered and are potentially significant. These need to be assessed also.

Section 7.5.2 is a curious addition to the report and reads like a media release for Inland Rail from the government. Many of the statements made are questionable, and all are without reference. A range of benefits of Inland Rail are outlined, with no references and no information for local impacted landholders to see how they are to supposedly benefit from this line. Freight benefits have not been proven, particularly in the context of no planned or announced intake/offtake areas for agricultural produce along the N2N as yet.

Section 7.6 outlines the direct impacts of the project in relation to the removal of agricultural land from production, however when considering direct impacts, the proponent fails to identify and describe the direct impact of significant disruptions to existing farm practices, preferring instead to list these impacts briefly as indirect in nature in Table 7.10. This minimises and incorrectly describes the impacts of construction and operation of this project to daily farm practices. Issues such as harvest movements, grain and stock cartage, road traffic, key periods such as sowing, wet weather, road damage issues from having to take an alternative route and reconfiguration of paddocks for tramlines (to name a few), all need to be listed as direct impacts, not indirect ones.

We are also of the understanding that some landholders have been informed that they will not be able to undertake aerial spraying activities in areas close to the rail line. This is a critical and important issue that if correct, devalues particularly high-yield and high-value irrigation properties that are adjacent to the line. Aerial spraying is a practice that is not as frequently undertaken as ground-spraying, but when it is, it is done so as a crucial management practice in order to deliver an agricultural chemical treatment in a timely manner to protects the ongoing viability of the crop in question. The proponent needs to describe this issue fully and outline how landholders that are prevented from spraying are to be compensated for the loss of this important agricultural practice.

Section 7.7 outlines property severance issues, however fails to recognise the way agricultural holdings are currently farmed and managed. The severance issues of this project are significant and have not been fully assessed in the report. The report takes a simplistic view of severance in that it looks at the number of properties impacted, and estimates the total severed area to be in order of 5000Ha, which is significant. What it does not do however, is comment on the degree to which severance impacts those that are not directly within the rail corridor. Many businesses are run over several properties and have often been designed around thoughtful and deliberate purchasing processes over the course of time, to allow efficient use of machinery and movement of livestock. This is common in the project area amongst multi-generational farming families and also in some instances in the case of larger conglomerates and partnerships. The failure to recognise this as an issue is a symptom of inadequate consultation, combined with a lack of understating about the way that farms are operated generally. We suggest that the section on

severance needs to be completely re-done in order to properly take into account these issues.

Less than a page is dedicated to biosecurity concerns in section 7.8, yet this is a significantly concerning aspect of the project from a farming perspective. The proponent has stated that they will continue to fulfil their obligation under the General Biosecurity Duty, yet have failed to identify the specifics of biosecurity risks as they see them, or provide a biosecurity plan for how these risks will be managed. From an agricultural impact point of view, this is inadequate. We suggest the proponent be asked to provide a biosecurity plan and consult with relevant agricultural agencies, such as Local Land Services, to identify relevant biosecurity risks. The proponent has not adequately answered the SEARs as outlined in section 5.3.

Water requirements for the project are outlined underneath Table 7.11. This section of the report has been rushed and contains absolutely no basis for the claims made. The proponent outlines a number of "potential" water sources but does not actually identify where water for earthworks and dust suppression will come from. There is commentary in relation to accessing a supposed deep water aquifer that is not allegedly used by current landholders. There is no evidence to support the claim that this deep water aquifer even exists, and no reference to any Water Sharing Plan that indicates how utilisation of water from such an aquifer would be licensed. The proponent goes on to state that another possible water source is produced water from the nearby Narrabri Gas Project. The Narrabri Gas Project has not even started construction, and even if it had, there are well-documented and serious concerns about the use of produced water in and around agricultural land and water. Any plan that proposes to utilise produced water would need to be carefully considered and monitored accordingly, particularly in relation to the impact of salts and other minerals in the area that it is being used.

9. Recommended mitigation measures

In summary, the mitigation measures proposed in relation to agricultural impacts are light on detail, and do not fully describe the issues that need to be mitigated. The proponent appears to rely heavily on a proposed iterative design and construct process, combined with an approach that relies on landholders to raise issues, and when they are raised, they are proposed to be solved by "consultation". For a project of the magnitude and scale of one such as this, combined with the significant agricultural impacts that we know about, this is not acceptable. We provide some specific comments in relation to the mitigation measures outlines in Table 9.1 below:

- Mitigation measures in relation to land use and property impacts that rely on *"feasible and reasonable property-specific measures"* are vague and ambiguous, leading to further land-use conflict issues. The proponent must be required, at the EIS stage, to outline specifically how each of the land impacts will be address.

- The proponent states that where legal access to properties is impeded, alternative access will be provided to an equivalent standard *"where feasible and reasonable"*. Again this language is ambiguous in nature and provides no assurances to landholders that they will be able to maintain access to their farms. Who decides what is *"feasible and reasonable"*?
- Impacts on livestock, and particularly livestock movements, are significant and the WHS risks associated with moving stock in and around a heavily used rail line have not been outlined at all in the report. The mitigation measures proposed seek to resolve this issue by relying on consultation with relevant landholders. Just exactly what does that mean? Are landholders able to request holding yards? How will train movements be managed and communicated?

A related issue referred to in the mitigation measures listed in Table 9.1 is fencing and this important issue needs a standalone paragraph to fully outline the large inadequacies in the EIS associated with fencing. In Table 9.1 the proponent, again, fails to identify the type of fencing that it will commit to in order to separate the rail corridor from farms. There is a reference to maintenance agreements, but again with no detail on what the baseline agreements are likely to look like. Fencing is an important management feature in all agricultural enterprises, and it must be made clear as to how this issue is to be addressed. The proponent has not even included an estimate (in kilometres) of how much fencing work needs to be done. We understand that the proponent has referred to the minimum (and default) fencing standard along the rail corridor as being a four strand fence (likely barb). A fence of this type is utterly inadequate and also not in keeping with the usual fencing practices of the area. Meetings were held between NSW Farmers and the CEO of Inland Rail approximately 4 years ago where "like for like" was promised to NSW Farmers in instances where fences needed replacement, and in instances where new fences had to be erected, that they been in keeping with the boundary fencing approaches already used by landholders. No landholder uses a four strand barb fence as a boundary fence in any section of the project area. Again the proponent shows little to no understanding of the fencing issue, or an appetite to clarify questions from landholders. A suggested approach is that NSW Farmers be consulted to inform, advise and assist ARTC in relation to fencing standards and that a streamlined approach that takes into account standards, maintenance, replacement and costs issues be developed and documented clearly. The importance of this issue cannot be overstated. The fact that this issue has been so mishandled raises serious questions in relation to the competency of the proponent to deliver this project when they have comprehensively failed to address such a simple, yet crucial issue.

Table 9.3 briefly touches on the proposed mitigation measures in relation to safety during the operation of the project. Safety of both human life and livestock is of paramount importance during construction and ongoing throughout the rail

operational life. The proponent has provided once sentence in response to this issue. They state that landholders will be given “guidance” regarding the frequency of train movements to assist with safe scheduling of routine agricultural activities. This is totally apathetic attitude to a significant safety issue which underestimates the risks involved in moving farm machinery, vehicles, persons and livestock in and around a rail corridor. The proponent should be directed to develop a safety management plan and consult with all impacted landholders in its development.

Conclusion

These comments cannot, and do not, seek to address every aspect of the report. However and where possible, an attempt has been made to highlight the larger issues and omissions that have arisen in an agricultural and farming systems context. Overall it is disappointing and frustrating to review a report that is confused, vague and deliberately minimising the impacts on agricultural land across the project area. The issues that we have raised above touch on all aspects of the report, from the baseline environmental scan, the assessment of direct and indirect impacts and the vast inadequacies set out in the mitigation measures proposed. The proponent has clearly failed to address the SEARs issued to them. For a project of the scale, size and budget of Inland Rail, the community and individual landholders deserve better. Because of the many deficiencies within the report, it is our view that it would be difficult to revise or to place conditions on approval that require the proponent to address the issues raised. Instead, and in light of the proponents failure to address the SEARs issued to them, a complete rethink of approach in relation to documenting impacts to agricultural land is needed. We recommend that this section of the EIS be completely rewritten, preferably utilising a different consultant that is able to demonstrate a real and tangible understanding of agricultural issues and how a project such as this impacts farms in the project area and how these impacts are to be appropriately managed.