

Mr. Mick Fallon
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NSW Department of Planning, Industry and Environment

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Sunday, 7 February 2021

Re: Inland Rail – Narromine to Narrabri Project – Environmental Impact Statement Submission

Dear Mr Fallon,

Thank you for the opportunity to make a submission on the Inland Rail (IR) Narromine to Narrabri (N2N) Environmental Impact Statement (EIS). The Narrabri Shire Council Floodplain Risk Management Committee (the Flood Committee) makes the following recommendations;

Route Alternatives and Options

- a) The Flood Committee requests IR investigate the proposed alignment depicted in the diagram below:

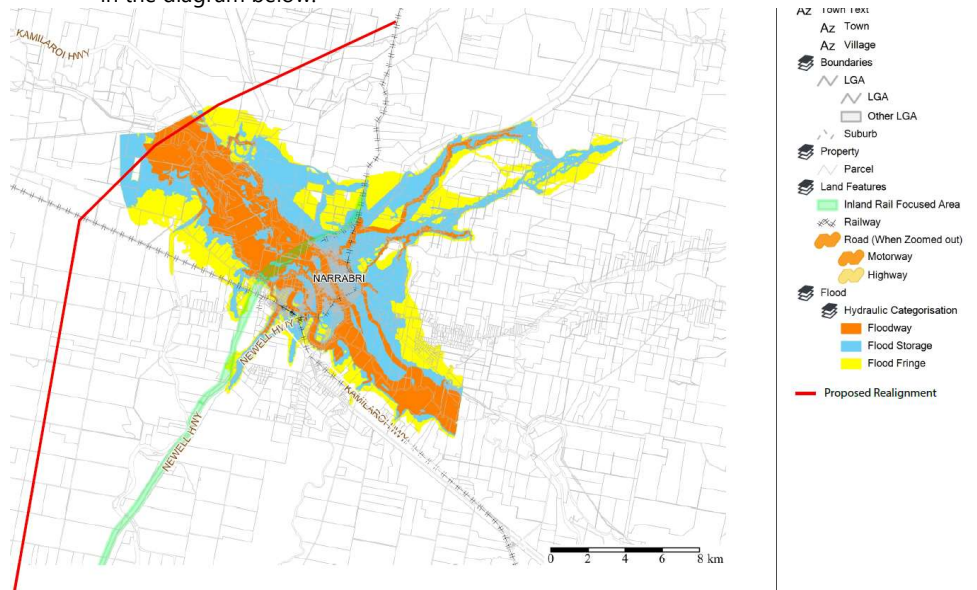


Figure 1: Alternate Route.



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- b) The Flood Committee is supportive of IR, however not in the proposed location immediately downstream of the Narrabri Township and crossing the Namoi River Floodplain in the widest location available. It seems counter-intuitive to cross Bohena Creek with a bridge near the Newell, then the Namoi River, the Island Road floodplain (on an angle), Narrabri Creek and the floodplain between Wee Waa Road and Auscott Sheds, with an enormous bridge immediately downstream of the town. By moving the alignment approximately 7 kilometres downstream it is possible to cross Bohena Creek, The Namoi River and Narrabri Creek with one structure half the length of the existing proposed structure across the Namoi and Narrabri Creek.
- c) The Flood Committee foresees the following benefits of this proposed alignment:
 - I. There is no bridge over Bohena Creek near the Newell Highway;
 - II. There is no need to squeeze past Bohena Creek again 5.7 kms to the north of the proposed Bohena Creek Bridge;
 - III. There is no need to cross Spring Creek near this same location;
 - IV. The crossing of the Namoi River is now downstream of where the Namoi River, Narrabri Creek and Bohena Creek join, and the bridge length required can be shortened by around 2.0 kilometres compared to the 4 kilometre bridge length required at the current location on the edge of town;
 - V. There are no flooding and/or noise issues or land valuation reductions on the north-western edge of Narrabri Town;
 - VI. Access requirements to the Narrabri Shire Sewage Treatment Works across the proposed line is no longer required and the Stock Route access is simplified;
 - VII. There is no longer any need to drag the large trains up over Knights' Hill opposite the Wheat Research Station.
 - VIII. Potential cost savings in construction and costs to Narrabri Residents;
 - IX. The alternative track distance is the same as that proposed;
 - X. Nil disruption from noise on the edge of Narrabri; and
 - XI. Most importantly; the removal of any flood impacts on the township of Narrabri.

Stakeholder Engagement

- a) Lack of consultation with the Flood Committee and a significant number of assumptions have been made by IR on many local issues such as;
 - i. the use of local roads,
 - ii. the identification of any potential local heritage items and discussions with heritage practitioners, historical societies and the like, and
 - iii. potential flooding.
- b) As discussed with all levels of IR representatives from the CEO, Richard Wankmuller, and Narramine to Narrabri Project Director, Duncan Mitchell down, the township of Narrabri is highly susceptible to flooding, both riverine and localised. In fact, it is considered that there is no other town in inland NSW that is more susceptible to flooding than Narrabri. Thus, the Flood Committee began discussions on this important issue with IR N2N team members as soon as possible.
- c) Members of the N2N project team attended an online meeting of the Flood Committee on 29 April 2020 via zoom. IR advised the Flood Committee that they needed a new model for whole area (Narramine-Narrabri) which is why they

developed their own. The Flood Committee questioned why IR's model did not include Mulgate Creek and local tributary flooding to which the Flood Committee still have to date not received an appropriate answer.

- d) A presentation was given by the IR N2N project team to the Flood Committee on 29 April 2020 outlining the status of the project and their flood investigations so far. The Flood Committee questioned the proposed location of the railway line immediately downstream of the township of Narrabri and highlighted the potential negative flood impacts on the town. Preliminary results showed a 1cm to 10cm increased afflux impact on Wee Waa Road and 1cm to 5cm impact for the Millicent Drive residential area for the 1% Annual Exceedance Probability (AEP) event as evidenced in the Figure below;

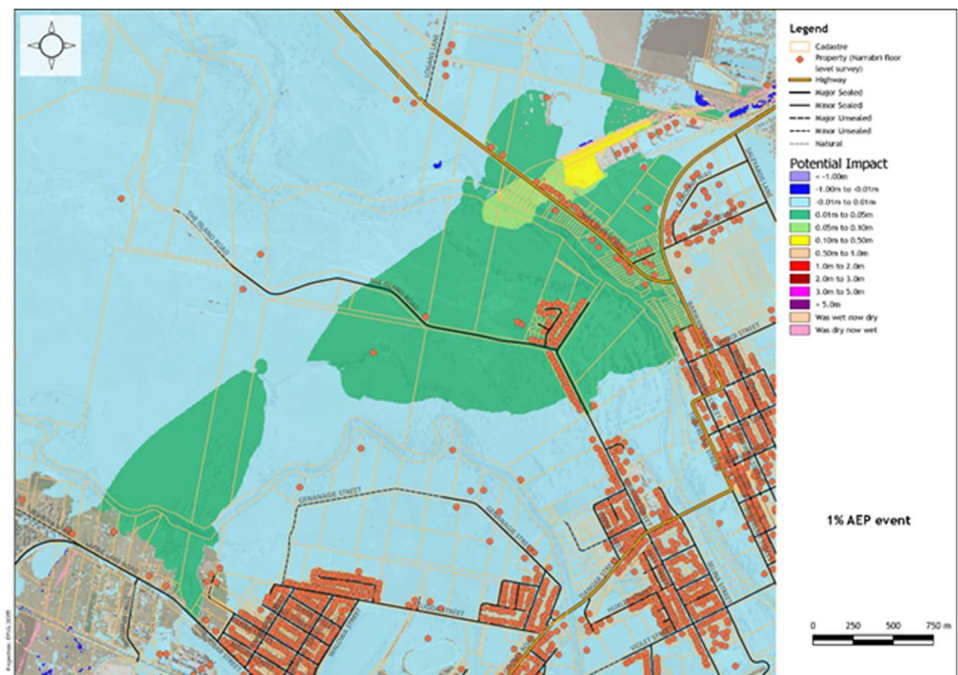


Figure 2: Provisional 1% AEP Afflux of proposed N2N infrastructure.

- e) IR have maintained that their target for all projects is to limit the afflux on existing buildings to 10mm (1cm). The results show some buildings having an afflux of between 1cm and 5cm.
- f) Discrepancies between N2N's flood modelling and Council's flood modelling were also apparent.
- g) The Flood Committee concluded to continue to hold discussions with the IR N2N project team regarding flood impacts on the township of Narrabri with the hopes of mitigating any negative flood impacts on the local community. However, the Flood Committee do not feel that IR have been as transparent as the Flood Committee with regards to facilitating the sharing of information with the view to ensure potential flood impacts caused by the N2N project are mitigated.
- h) The Flood Committee were further frustrated and surprised to be advised at the next CCC meeting held on 5 August 2020 that the N2N presentation advised "Narromine Floodplain Risk Plan is the only plan that applies to the study area".

This is despite Inland Rail having been made aware of Council's Draft Risk Plan some months earlier.

- i) N2N team members virtually attended a further meeting of the Flood Committee on 29 September 2020 via zoom. N2N staff led by Stakeholder Engagement Lead for the N2N, Louise Johnson, provided the Flood Committee with a generic update and advised that IR had consulted with the community numerous times and no one raised any issues. However, when questioned, Louise advised that they had still not discussed any potential flooding and/or afflux issues of the project with the public.
- j) While the IR N2N project team may have carried out various community consultation activities on the project in Narrabri, and with Narrabri residents, such impacts as the increased afflux during the 1% AEP flood event were never discussed with landowners, even those who would be affected by the predicted afflux. The Flood Committee is extremely concerned with this lack of transparency by IR to its local residents and feels that this is in contravention to the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual.
- k) IR refused the Flood Committee's numerous requests to include Mulgate Creek and local tributary flooding in their model and therefore flood impact assessment for the EIS. On 23 November 2020 Council received the following comments from IR's Design Manager, Joel Acosta;

"We checked the schedule to see if we could add it without impacting the EIS submission date, but unfortunately it was not possible..... The updated flooding and hydrology assessment report will be included in the Submissions and Preferred Infrastructure Report (SPIR) in 2021. As the name suggests, that is the document where Inland Rail will have to reply to all the formal submissions received during the EIS public exhibition period. For this particular example, Council will add a submission requesting Mulgate Creek scenario to be included, and Inland Rail will reply "done, please refer to updated document".

The Flood Committee are left wondering if this is/was so easy, why was it not included in the EIS in the first instance, and those in the local community potentially affected, as well as the general public, made aware of the potential afflux associated with the more frequent localised flooding?

Flooding

- a) Table 1 shows the number of buildings within Narrabri that ARTC have identified that the rail would increase above floor level flooding by more than 10 mm. The results have been separated by properties flooded by Bohena Creek and by Namoi River. The impact of the rail on Mulgate Creek flooding of properties was not calculated by ARTC.

Table 1 - No. buildings subject to above floor flooding and impacted by more than 10 mm for Bohena Creek and the Namoi River

Source	No. buildings subject to above floor flooding and impacted by more than 10 mm [#]
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	20% AEP	5% AEP	2% AEP	1% AEP	1% AEP +CC	0.5% AEP	0.2% AEP	PMF
Bohena Creek	0	29 (35)	29	29 (47)	28	20	294	400
Namoi River	0	8 (14)	20	22(133)	53	34	245	5,880

Numbers in brackets refers to the buildings flooded for the construction phase

- b) ARTC have potentially underestimated the flood impact of the rail. Research by TUFLOW suggests that both form loss coefficient and a blockage factor should be used. ARTC have only used a form loss for the bridge impact assessment. The inclusion of a conservatively low blockage factor of 5% would increase the number of properties impacted by the rail.
- c) ARTC have assumed that the bridge piers would not accumulate debris and cause additional blockage, which is not consistent with recommendations in AR&R. The inclusion of the additional 5% debris blockage (total 10%) would further increase the flood afflux and the number of impacted properties.
- d) ARTC have not estimated the impact of the rail on Mulgate Creek flooding. The most recent three floods in Narrabri, which caused above floor flooding, have been from Mulgate Creek. Mulgate Creek flooding generally occurs with minimal Namoi River flows. Modelling of the local Mulgate Creek catchment excluding Namoi River flows shows that the rail (assuming 5% blockage of the piers) would cause flood impacts on a number of properties along Wee Waa Road.
- e) ARTC have grossly overestimated the number of properties that would be flooded above floor level under existing conditions both within Narrabri and along Bohena Creek.
 - i. For the Namoi River, the number of buildings flooded above floor level estimated by ARTC is some 4 times higher for the 5% AEP event and some 3 times higher for the 1% AEP when compared to the numbers estimated for the Narrabri FMP. The reasons for the discrepancy are not clear. However, the overestimation tends to suggest that the flood level impacts from IR are not significant when compared to the existing problems.
 - ii. Along Bohena Creek, ARTC estimated some 72 buildings flooded above floor level by the 20% AEP event and 199 buildings for the 5% AEP event. This is not consistent with local observations and is not likely correct. It appears that ARTC have not considered the recorded flows at the Bohena Creek gauge when defining their design discharge estimates. For instance, ARTC's 20% AEP discharge estimate of 1,392 m³/s is about 2.8 times the largest flow recorded at the Bohena Creek gauge over the past 25 years. The use of the Bohena Creek gauge data would significantly reduce design discharges and the number of properties flooded above floor level under existing conditions along Bohena Creek.
 - iii. ARTC have predicted more properties potentially impacted during the construction phase. Although these impacts would only occur if a flood event occurred during the construction phase, the number of potential properties is significant.

- f) The EIS states that ARTC have adopted the following afflux (flood level impact) performance criteria when designing the rail (Table 3.1 of Technical report 3) for events up to and including the 1% AEP event:
 - i. Afflux less than 10 mm for:
 - properties flooded above the habitable floor level;
 - sensitive infrastructure; and
 - highways and sealed rural roads.
 - ii. Afflux less than 200 mm for urban and recreational areas.
- g) Table 1 shows that the ARTC rail design does not comply with their own design objectives with afflux exceeding the criteria at multiple properties. They have also not provided any justification for not meeting their own non-compliance. Meeting their design objectives could be met by relocating the rail downstream or extending the rail viaduct to the north.
- h) The proposed rail embankment crosses the Lower Namoi Valley floodplain, which is a declared floodplain under the Water Management (General) Regulation 2018. Under this plan, any flood works on the floodplain are regulated by the Floodplain Management Plan for the Lower Namoi Valley Order 2020 issued under the Water Management Act 2000 (FMP). A 'flood work' within the FMP means a work that is:
 - i. situated in or in the vicinity of a river, estuary or lake, or within a floodplain, and is
 - ii. of such a size or configuration that (regardless of the purpose for which it is constructed or used), it is likely to have an effect on the flow of water to or from a river, estuary or lake, or the distribution or flow of floodwater in times of flood.
- i) ARTC have stated that the rail is NOT a 'flood work' as defined by the FMP. However, the N2N rail embankment on the Namoi River floodplain would appear to fit within this definition and therefore would be a flood work. Although the project is a State Significant project and is not subject to the conditions of the FMP, it would be expected that the Minister would need to consider these criteria for this type of flood work. Under the FMP, the proposed ARTC works within the AD zone would generally not be permitted. The works in the B, C and CU management zones stipulate that the Minister would need to consider (amongst other criteria) whether the flood works would likely:
 - i. increase flood levels by greater than 20 cm on adjacent landholdings and other landholdings; and
 - ii. increase flood levels resulting in impacts on high value infrastructure (buildings).

The EIS demonstrates that the N2N rail does not comply with either of these criteria in Narrabri from the Namoi River or Bohena Creek.
- j) The proposed N2N rail is located within the Narrabri Flood Planning Area as given in the Narrabri Local Environment Plan 2012. This LEP states that "is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties". The flood level impacts at residential and commercial properties shown in the EIS would suggest that the N2N would not comply with the Narrabri LEP.
- k) NSC have recently completed a Floodplain Management Plan for Narrabri (Narrabri FMP). The current recommendation within the Narrabri FMP being considered by Council would mean that the proposed rail would not be approved as it proposes flood impacts exceeding 10mm on external property.

The Flood Committee expects that IR has, and will continue to, adhere to all applicable legislative requirements they are bound by throughout the planning process. The Flood Committee appreciates the opportunity to review the IR N2N EIS and trusts that these comments will be considered in the assessment of this document.

Yours faithfully,

The Narrabri Shire Council Floodplain Risk Management Committee