INLAND RAIL

Submissions Report

North Star to NSW/Queensland Border

Environmental Impact Statement

ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

IR_1535

COVER IMAGE
A visualisation created by ARTC of the proposed alignment crossing the Macintyre River, looking north from NSW towards Queensland.

Visualisations are for illustrative purposes and not to scale. Please note, the reference design may change as a result of further investigations, government approvals or during detailed design.

ACKNOWLEDGEMENT OF COUNTRY

Inland Rail acknowledges the Traditional Custodians of the land on which we work and pay our respect to their Elders past, present and emerging.

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Abbreviations

Abbreviation	Explanation
AEP	annual exceedance probability
AHIMS	Aboriginal Heritage Information Management System
AIAM	Adverse Impacts Assessment Methodology
ALCAM	Australian Level Crossing Assessment Model
ARTC	Australian Rail Track Corporation
AS	Australian Standard
ASS	acid sulfate soils
ARR	Australian Rainfall and Runoff
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method calculator
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BCD	Biodiversity, Conservation and Science Directorate
BCS	Biodiversity Conservation Strategy
BDAR	Biodiversity Development Assessment Report
CBA	Cost benefit analysis
CEMP	Construction Environmental Management Plan
CNVIA	Construction Noise and Vibration Impact Assessment
Cth	Commonwealth
DAWE	Department of Agriculture, Water and the Environment (Commonwealth)
dB	Decibel
dBA	A-weighted decibel
DPI	Department of Primary Industries (NSW)
DPIE	Department of Planning, Industry and Environment (NSW)
DTMR	Department of Transport and Main Roads (QLD)
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979 (NSW)*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cth)*
FFJV	Future Freight Joint Venture is a joint venture between AECOM and Aurecon
FM Act	*Fisheries Management Act 1994 (NSW)*
FMO	Flood Management Objectives
BRFMP	Border Rivers Floodplain Management Plan
GRC	Goondiwindi Regional Council
GSC	Gwydir Shire Council
GTIA	Guide to Traffic Impact Assessment
ID	identification
km	kilometres
km/hr	kilometres per hour
LALC	Local Aboriginal Land Councils
LAeq	A-weighted equivalent noise level measured in decibels
LAeq90	A-weighted noise level exceeded for 90% of the measurement period
LAmax	The maximum value that the A-weighted noise level reaches
LAeq, T	A-weighted equivalent noise level measured in decibels over (T) period of time

Abbreviation	Explanation
LCA	landscape character areas
LEP	Local Environmental Plan
LiDAR	Light Detection and Ranging
m	metres
m^2	square metres
m^3	cubic metres
MNES	matters of national environmental significance
MPSC	Moree Plains Shire Council
NML	noise management level
NPfI	Noise Policy for Industry
NSW	New South Wales
B2G	NSW/QLD Border to Gowrie Inland Rail project
PCT	plant community type
PIR	Preferred Infrastructure Report
POEO Act	Protection of the Environment Operational Act 1997 (NSW)
ONVIA	Operational Noise and Vibration Impact Assessment
Qld	Queensland
RBL	rating background level
RING	Rail Infrastructure Noise Guidelines
RMS	Roads and Maritime Services (NSW)
SAII	serious and irreversible impacts
SCR	State-controlled roads
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSI	State significant infrastructure
TALC	Toomelah Aboriginal Land Council
TBDC	Threatened Biodiversity Data Collection
TfNSW	Transport for New South Wales
TSR	Travelling Stock Reserve
t/year	tonnes per year
WHO	World Health Organisation

1. Introduction

1.1 Inland Rail

The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane, via central-west New South Wales (NSW) and Toowoomba in Queensland (refer Figure 1.1). Inland Rail is a major national project that will enhance Australia's existing national rail network and serve the interstate freight market.

The Inland Rail route, which is approximately 1,700 kilometres (km) long, involves:

- Using the existing interstate rail line through Victoria and southern NSW
- Upgrading about 400 km of existing track, mainly in western NSW
- Providing about 600 km of new track in northern NSW and south east Queensland.

Inland Rail has been divided into 13 sections, seven of which are located in NSW. Each project will undergo environmental assessment and approval under the relevant local, State and Commonwealth planning laws, taking into account the contribution of each project to the wider Inland Rail route.

Australian Rail Track Corporation Ltd (ARTC) (the proponent) has developed a 10-year program to deliver Inland Rail. ARTC was created after the Commonwealth and state governments agreed in 1997 to the formation of a 'one stop shop' for all operators seeking access to the national interstate rail network. Across its network, ARTC is responsible for:

- Selling access to train operators
- Developing new business
- Capital investment in the corridors
- Managing the network
- Infrastructure maintenance.

Further information on ARTC and Inland Rail can be found at **artc.com.au** and **inlandrail.com.au**.

FIGURE 1.1: PROPOSED ALIGNMENT FOR INLAND RAIL

1.2 The proposal

The proponent is seeking approval to construct and operate the **North Star to NSW/Queensland Border (NS2B)** component of Inland Rail (the proposal), which consists of approximately 30 km of new rail track and associated facilities. The proposal is one of three 'missing link' Inland Rail projects in NSW.

For design purposes, the delivery model for the proposal includes a 7-km section of new rail track north of the NSW/Queensland border that ties into the existing Queensland Rail South Western Line near Kurumbul, Queensland. For the purpose of obtaining the necessary environmental approvals, this 7-km section of new track will be assessed as part of the NSW/Qld Border to Gowrie Inland Rail project, for which a separate Environmental Impact Statement (EIS) under the *State Development and Public Works Organisation Act 1971* (Qld) is currently being prepared.

1.3 The assessment and approval process

ARTC has been prescribed as a 'public authority' under Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act), through the effect of clause 277(1)(b) of the Environmental Planning and Assessment Regulation 2000 (NSW) (EP&A Regulation), in relation to development for the purposes of 'ARTC rail infrastructure facilities', but only for the purpose of making ARTC a 'determining authority' in relation to such development where it is subject to Part 5 of the EP&A Act.

The proposal would be permitted without development consent in accordance with Clause 79 of the State Environmental Planning Policy (Infrastructure) 2007 (NSW), and is subject to assessment under Part 5 of the EP&A Act.

Section 5.12 of the EP&A Act provides for development to be State significant infrastructure through a Ministerial Order or through a State Environmental Planning Policy (SEPP). Clause 14 of the State Environmental Planning Policy (State and Regional Development) 2011 (NSW) provides for development specified in Schedule 3 of the SEPP to be State significant infrastructure. The types of development listed in Schedule 3 include '*development for the purpose of rail infrastructure by or on behalf of the Australian Rail Track Corporation that has a capital investment value of more than $50 million*' (clause 3). The proposal is, therefore, State significant infrastructure (SSI), and proposed critical SSI, so is subject to approval from the NSW Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act.

Other approvals and permits are also required, including approval as a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) (referral reference 2018/8222).

An EIS was prepared in relation to ARTC's application for approval of the proposal in accordance with the requirements of Division 5.2 of the EP&A Act. The EIS was released for public exhibition by the Department of Planning, Industry and the Environment (DPIE) for a period of 30 business days, commencing on Wednesday 26 August 2020 and concluding on Tuesday 6 October 2020. During the public exhibition period, key stakeholders and the community were able to review the EIS online or at display locations, participate in consultation activities and make written submissions to the DPIE (refer Section 4.2).

1.4 Purpose and structure of the report

This report comprises the Submissions Report for the proposal, which has been prepared in accordance with the requirements for State significant infrastructure under Division 5.2 and, more specifically, Section 5.17(6) of the EP&A Act.

5.17 Environmental assessment and public consultation (cf previous s 115Z)

(6) The Planning Secretary may require the proponent to submit to the Planning Secretary—

(a) a response to the issues raised in those submissions, and

(b) a preferred infrastructure report that outlines any proposed changes to the State significant infrastructure to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned.

Responses to issues raised in the submissions are provided in Appendix B: Public Submissions, Appendix C: Organisation Submissions and Appendix D: Public authority Submissions.

This report is structured as follows:

- An introduction to the report (Section 1)
- An overview of the exhibited proposal (Section 2)
- An overview of the submissions, including numbers, types of submitters and key issues (Section 3)
- A description of consultation that was undertaken during and after the exhibition period (Section 4)
- A description of the actions that were undertaken during the exhibition period (Section 5)
- A summary of the responses to issues raised by public submitters (Section 6)
- A summary of the responses to issues raised by organisation and public agency submitters (Section 7)
- An evaluation of the proposal, including uncertainties, justifications, environmental considerations, ecologically sustainable development and revised mitigation measures (Section 8)
- A list of references that were used in this report (Section 9).

A detailed response to each submission is provided as Appendices B, C and D.

2. Overview of the exhibited proposal

2.1 Overview of the proposal as described by the EIS

2.1.1 Location

From a point approximately 900 m north of North Star, the proposal follows the existing non-operational Boggabilla rail corridor for approximately 25 km towards Whalan Creek (refer Figure 2.1). The proposal then continues along a 5-km section of greenfield rail corridor towards the NSW/Queensland border. The NSW/Queensland border is defined by the centre point of the Macintyre River.

The rail corridor for the proposal will have a general width of 40 m, with some variation to cater for local topography and certain pieces of infrastructure. The rail corridor will be of sufficient width to encompass all infrastructure currently proposed for construction, as well as possible expansions in the future.

2.1.2 Key features of the proposal

The proposal consists of the following key features:

- Twenty-five (25) km of new track within the existing non-operational Boggabilla rail corridor
- Approximately five (5) km of new track within a greenfield rail corridor
- One crossing loop
  - Designed to accommodate trains up to 1,800 m long, with provisions to accommodate trains up to 3,600 m long if required in the future
- Eleven (11) new bridges
  - This includes an approximately 1.8-km long viaduct over the Macintyre River and Whalan Creek, which are major watercourses. The viaduct is located in both NSW and Queensland; therefore, it will be assessed under the NSW *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) by this EIS, and under the *State Development and Public Works Organisation Act 1971* (Qld) by the NSW/Queensland Border to Gowrie EIS.
- Earthworks, drainage works and road works
- Level crossing works
- Ancillary infrastructure, including signalling and communications infrastructure, signage, fencing and utilities.

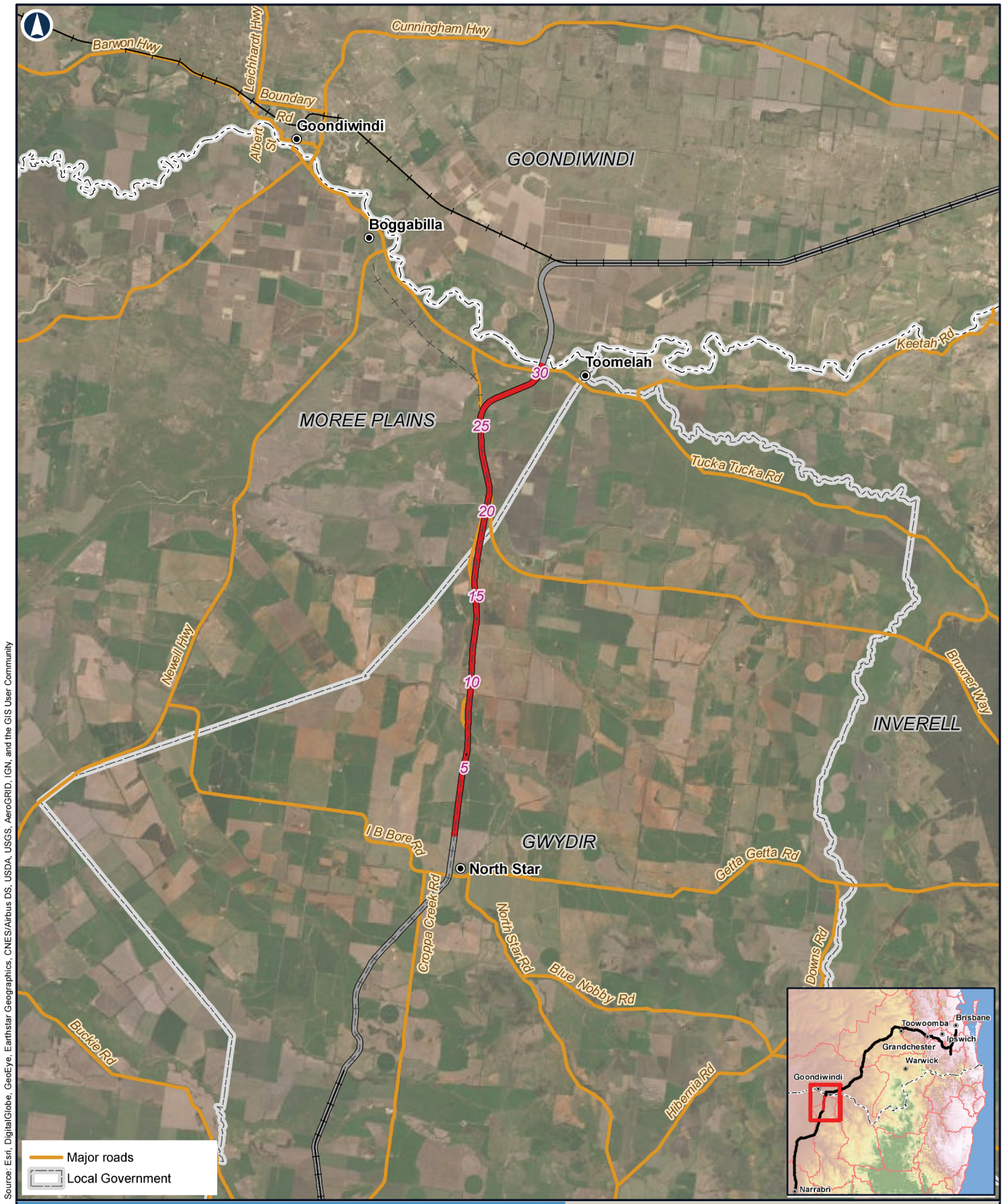
The construction phase of the proposal will also involve laydown areas, access tracks, borrow pits and workforce accommodation.

2.1.3 Timing and operation

Subject to approval of the proposal, construction of the proposal is planned to occur between 2021 and 2025. The proposal will be managed and maintained by ARTC; however, train services will be provided by a variety of operators. Train services are not expected to commence until all 13 sections of the Inland Rail Program are complete, which is planned to be in 2027.

The proposal will be trafficked by an estimated 14 trains per day in 2027, increasing to an estimated 21 trains per day in 2040. Annual freight tonnages will increase in parallel, from approximately 12 million tonnes per year in 2027 to 20 million tonnes per year in 2040.

The proposal is designed to support double-stacked, 21–25 tonne axle load intermodal (i.e. container) trains up to 1,800 m long and 6.5 m high. Depending on the tonne axle load, train speeds will vary between 80 kilometres per hour (km/hr) and 115 km/hr. In addition, the proposal footprint is future proofed to accommodate 30-tonne axle load intermodal trains up to 3,600 m long and 6.5 m high, travelling at 80 km/hr.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 1: Overview of the proposal

NORTH STAR TO NSW/QLD BORDER

9 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 29/10/2019 Paper: A4
Author: FFJV GIS Scale: 1:300,000

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail (operational)
- Existing rail (non-operational)
- NSW/QLD border
- North Star to NSW/QLD border alignment
- Adjoining alignments

ARTC InlandRail

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector.

Map by: LCT Z:\GIS\GIS_270_NS2B\Tasks\270-ECH-201910161017_Overview_of_the_proposal\270-EAP-201910161017_Figure1_Overview_of_the_proposal_ARTC_rev2.mxd Date: 8/11/2019 13:43

2.1.4 Objectives of the Proposal and Inland Rail Program

The objectives of the proposal are to:

- Enable trains using the wider Inland Rail network to travel between North Star and the NSW/Queensland border, linking with other sections of the wider Inland Rail network to the north and south
- Provide new rail infrastructure that meets the Inland Rail specifications, which includes improving the resilience of the rail corridor to flooding
- Minimise the potential for environmental and community impacts by maximising use of the existing non-operational Boggabilla rail corridor.

The four key elements of the Inland Rail Service Offering are 98 per cent reliability, road-competitive pricing, less than 24 hours transit time and freight availability in line with market needs. In conjunction with the Inland Rail Service Offering, the objectives of the Inland Rail Program are to:

- Provide a backbone rail link between Melbourne and Brisbane, that is interoperable with train operations between Perth and Adelaide, in order to serve future rail freight demand and stimulate growth for inter-capital and regional/bulk rail freight
- Provide an increase in productivity that will benefit consumers through lower freight transport costs
- Provide a step-change improvement in rail service quality in the Melbourne to Brisbane corridor to deliver a freight rail service on the east coast that is competitive with road
- Improve road safety, ease congestion and reduce environmental impacts by moving freight from road to rail
- Bypass bottlenecks on the congested metropolitan rail networks on the east coast and free up train paths for other services on the coastal route
- Act as an enabler for regional economic development along the Inland Rail corridor.

2.2 Updates to proposal since EIS exhibition

2.2.1 Optimisations in proposal footprint

Following the EIS public exhibition, the proposal footprint has undergone an optimisation process to further avoid and reduce biodiversity impacts as a result of the proposal.

The change in footprint is exhibited in Appendix F.1: Optimised Proposal Footprint.

The updated Biodiversity Development Assessment Report (BDAR) applies the optimised footprint.

2.2.2 EIS clarifications

This section outlines clarifications to the EIS

- In Section 6.2 of the Construction Noise Report, the following statement is made:

  '*The proposed site layout also assumes that a 3 metre barrier fence is erected around the northern and western perimeter of the camp*'. For clarification, the barrier fence mentioned refers to a security fence that would provide limited acoustic protection; accordingly, noise emissions may still pass to sensitive receivers.

- In Table 27.13.11 of the EIS, the following proposed mitigation measure is stated:

  '*A biodiversity offset strategy will be developed in consultation with the Department of Agriculture, Water and the Environment (DAWE) (Australian Government) and the Department of Planning, Industry and Environment (NSW)".* For clarification, this should state *"Biodiversity offsetting will be undertaken in accordance with the Biodiversity Conservation Act 2016 (NSW) and in consultation with the Department of Agriculture, Water and the Environment (DAWE) (Australian Government) and the Department of Planning, Industry and Environment (NSW)*'.

2.3 Need for Inland Rail and the proposal

2.3.1 Need for Inland Rail

Inland Rail is needed to respond to the growth in demand for freight transport and address existing freight capacity and infrastructure. The analysis of demand undertaken by ARTC indicated that there would be sufficient demand for Inland Rail.

With respect to the need for Inland Rail, the Inland Rail Implementation Group (2015) found that:

- Without Inland Rail, the amount of freight travelling by road between Melbourne and Brisbane in 2050 will be approximately 7.1 million tonnes—2.3 million tonnes more than what would be on the road with Inland Rail
- Key transport links are experiencing increasing capacity constraints and congestion due to inadequate infrastructure
- Current investment in road and rail is insufficient to address Australia's future freight task
- Further population and freight growth along the north–south corridor will increase the demand for transport services at a local, State and national level, placing freight corridors under severe pressure and compounding the inefficiencies that already exist
- If capacity constraints and congestion resulting from inadequate infrastructure are not overcome, national productivity and economic growth will be constrained, with environment and safety outcomes also becoming increasingly sub-optimal.

2.3.1.1 Growth in freight demand

The Melbourne to Brisbane corridor is one of the most important general freight routes in Australia, supporting key population and employment precincts along the east coast and inland NSW. It is estimated that 21 million tonnes of non-bulk and complementary freight moves along this corridor each year. This is expected to grow to over 40 million tonnes per year by 2050. With the population of the eastern states forecast to increase by 60 per cent over the next 40 years, the need for efficient and effective freight transport will continue to increase. Strong forecast population growth, accompanied by comparable growth in employment, is likely to place significant pressure on existing infrastructure and utilities.

2.3.1.2 Existing freight capacity and infrastructure issues

Without the increased use of rail, the growth in freight demand is likely to result in increasing pressure on the road network and associated safety and environmental issues, increased freight costs, and a loss of economic opportunity.

The current national infrastructure network cannot support this projected growth, however, with increasing pressure on already congested roads through Sydney, and increasing use of heavy trucks, such as B-doubles and B-triples, along the Hume–Pacific and Newell highway corridors. Rail is generally the most productive and efficient mode for freight travelling from regional areas to export ports and urban destinations. Freight trains travelling along the Melbourne to Brisbane corridor currently travel through the Sydney metropolitan rail network, often experiencing significant delays. Travel-time reliability is poor as a result of the priority given to passenger services, freight transit curfews in the Sydney metropolitan area and substandard rail alignments elsewhere. Limited capacity during morning and afternoon passenger peaks restricts freight movements at these times.

2.3.2 Need for the proposal

As part of the wider Inland Rail Program, the proposal will play a part in achieving improved travel times for freight between Melbourne and Brisbane. It will contribute to a reduction in the distance travelled by freight and an increase in the amount of freight that may be transported between Melbourne and Brisbane. It will also provide a new, efficient connection between regional farms in the area and international export markets.

The proposal is a 'missing link' of the Inland Rail Program between Melbourne and Brisbane; therefore, Inland Rail cannot proceed if the proposal does not proceed. This would mean that the benefits of Inland Rail would not be realised.

2.4 Summary of key potential impacts

The key potential impacts (both positive and negative) identified for the proposal are described in detail in chapters 11–27 of the EIS. The key potential impacts are also summarised in Table 2.1 for the construction and operational phases of the proposal.

TABLE 2.1: SUMMARY OF KEY POTENTIAL IMPACTS

Environmental aspect	Key potential impacts of the proposal
Biodiversity	The key potential impacts from the proposal on biodiversity include: ▸ Habitat loss and degradation from vegetation clearing/removal ▸ Fauna species injury or mortality ▸ Reduction in biological viability of soil to support plant growth due to soil compaction ▸ Displacement of flora and fauna species from invasion of weed and pest species ▸ Reduction in the connectivity of biodiversity corridors ▸ Edge effects ▸ Habitat fragmentation ▸ Barrier effects ▸ Noise, dust and light impacts ▸ Increase in litter (waste) ▸ Erosion and sedimentation ▸ Changes to hydrology and flooding affecting flood-dependent ecosystems ▸ Disturbance to species breeding and foraging habitat ▸ Trampling of threatened species ▸ Fallen timber and bush rock collection or removal ▸ Fertiliser drift (due to reduction in buffering vegetation) ▸ Increased bushfire risk
Heritage	The key potential impacts on Aboriginal heritage include: ▸ 22 artefact scatters, 12 isolated artefacts, 9 culturally modified trees and 2 intangible sites (watercourses and plant resource areas) will be directly impacted by the proposal ▸ 7 culturally modified trees will be indirectly impacted by the proposal. The main potential impacts on historical heritage are: ▸ 11 sites, including 2 railway sidings, 2 bridges and 4 fettler camps will be directly impacted by the proposal.

Surface water	The key potential impacts on surface water include:
	▸ Increased surface water turbidity and sedimentation due to earthworks, erosion of material stockpiles and maintenance of roads/tracks
	▸ Changes to surface water chemistry due to accidental chemical and fuel spills, dissolution of ballast material and maintenance of roads/tracks
	▸ Changes to the existing flood regime, such as:
	  ▸ Peak water levels and associated areas of inundation
	  ▸ Concentration and redirection of flows
	  ▸ Increased velocities leading to localised scour and erosion
	  ▸ Duration of inundation affecting trafficability of roads/tracks
	  ▸ Changes affecting the existing fluvial geomorphologic conditions of waterways due to changes in peak water levels, flood distribution and velocities.

Environmental aspect	Key potential impacts of the proposal
Groundwater	The key potential impacts on the uppermost aquifer system (Cenozoic alluvium) include: ▸ Clearing and grading could reduce evapotranspiration, potentially increasing groundwater levels ▸ Soil compaction and altering areas where surface water ponding occurs naturally may reduce groundwater recharge rates ▸ Bridge piling may lower aquifer permeability, alter groundwater flow patterns (e.g. mounding) and reduce groundwater volumes due to the extraction of wet soil/rock during piling ▸ Embankments may reduce the permeability of underlying soils, potentially affecting the flow of shallow groundwater resources beneath, and adjacent to, the embankment ▸ Contamination of groundwater resources may occur as a result of accidental spills and leaks of chemicals, fuel, washdown water and wastewater from the construction accommodation facility.
Land resources	The key potential impacts on land resources include: ▸ Activities have the potential to disturb existing contaminated soil or groundwater, which may contaminate previously unaffected soil or groundwater and affect human health ▸ Construction is likely to result in the loss of natural soil resources, including Biophysical Strategic Agricultural Land. Over time, this may cause soil structure and fertility to decline.
Land resources [continued]	▸ Potential to alter the landform and topography of the local area ▸ Excavations can lead to soil inversion and exposure of potential acid sulfate soils (ASS). The inversion of alkaline subsoils can lead to increased salinity or sodicity issues, groundwater contamination and soil fertility decline, while ASS can create damaging levels of sulfuric acid. ▸ Construction and decommissioning activities could potentially introduce invasive flora and fauna into the area through additional traffic going onsite and offsite.

Noise and vibration	The key potential impacts on noise and vibration include:
	▸ Construction noise impacts:
	  ▸ The assessment of noise associated with the construction of the proposal indicates some exceedances of the noise management levels at some receivers.
	▸ Construction traffic impacts:
	  ▸ An assessment of the likely construction traffic indicated that while increases in road traffic noise of more than 2 A-weighted decibels (dBA) may occur, road traffic noise levels would remain below the Environment Protection Authority's NSW *Road Noise Policy* criteria.
	▸ Construction accommodation noise impacts:
	  ▸ The results of the operational noise assessment show that predicted noise levels, due to the operation of the proposed construction accommodation facility, may exceed the proposal noise trigger levels by 1 dBA at up to three receiver locations.
	▸ Operational road traffic:
	  ▸ The nearest residential receiver is located 2.3 km away from the section of road to be realigned. It was found that noise levels at the most affected receiver are not predicted to increase by more than 0.3 dBA, due to the proposed realignment.
	▸ Operational noise and vibration impacts:
	  ▸ The predicted rail noise levels were above the *Rail Infrastructure Noise Guidelines* noise criteria at three receivers at the proposal opening in year 2027 and an additional two receivers, for a total of five receivers, by the design year of 2040.

Air quality	The key potential impacts on air quality include: ▸ Dust generation from construction and operational activities ▸ Emissions from refuelling activities and train idling.

Environmental aspect	Key potential impacts of the proposal
Sustainability	Sustainability is an important consideration for the proposal, especially regarding maximising resource efficiency, enhancing local economic activity, and mitigating potential environmental and social impacts. The key sustainability outcomes of the proposal include: ▸ Operational energy, related to energy consumed by the ARTC in operating the asset, and the adoption of energy efficient equipment ▸ Climate change risks ▸ Biodiversity offsets ▸ Urban design applicable to the proposal context ▸ Innovation and legacy items ▸ Waste management, including reuse of spoil ▸ Water demand during construction, including consideration of water-efficient equipment and processes ▸ Sustainable procurement.
Climate change	The key potential impacts from climate change on the proposal include: ▸ Risk to health and safety of staff working along the rail corridor through heat stress ▸ Extreme rainfall leading to increased stormwater runoff, with potential damage and/or inundation of surrounding road infrastructure impacting the ability of emergency response/workers to reach the corridor.
Traffic and transport	The key potential impacts on traffic and transport include: ▸ Impact to road–rail intersections and interfaces ▸ Impact to traffic along construction routes ▸ Increased pavement degradation during construction ▸ Impact to road safety along construction routes ▸ Impact to road safety at level crossings ▸ Construction traffic ▸ Road traffic during operation ▸ Train idling at the crossing loop.
Landscape character	The key potential impacts to landscape and visual amenity include: ▸ The removal of vegetation ▸ The raising of embankments ▸ Creation of new rail bridges.
Land use and property	The key potential impacts from land use and property include: ▸ Change in tenure and loss of property ▸ Disruption to land over which native title claims have been made ▸ Change in land use, including the sterilisation of agricultural land and disruption to agricultural practices, and alterations to Travelling Stock Reserves and informal stock routes ▸ Impacts to accessibility, including impacts on the road network and to property access ▸ Impacts on utilities ▸ Opportunities to support future industry development.

Environmental aspect	Key potential impacts of the proposal
Social and economic	The key potential social and economic impacts include: ▸ Property impacts such as land acquisition, severance of productive agricultural land, and disruptions to farm infrastructure ▸ Community conflict regarding the proposal, which may affect community cohesion ▸ Amenity impacts due to noise, changes to visual amenity, dust and increased traffic ▸ Disruption of social land uses, such as family events and fishing, where the Macintyre River and surrounds are affected by bridge works ▸ Traffic delays during construction of rail-over-road bridges, level crossings and road realignments ▸ Uncertainty and fears about the proposal's impacts are likely to cause stress for some residents living near the proposed alignment ▸ Over time, a decrease in road freight volumes may affect levels of trade for local transport businesses ▸ At the regional level, if multiple Inland Rail projects are constructed at the same time, there may be a significant draw on trades and construction labour.
Hazard and risk	The key potential hazards and risks that can affect the proposal include: ▸ Damage to infrastructure, injury to workers or public from bushfire ▸ Damage to infrastructure, potential for impacts to freight goods caused by flooding events ▸ Increased temperatures, leading to failure of infrastructure, caused by climate change (extreme weather events) ▸ Worker injury from fatigue and heat stress ▸ Rail accidents caused by increased rail movements ▸ Road accidents caused by increased vehicles required for the proposal (e.g. traffic from construction, maintenance or decommissioning) ▸ Accidents due to increased number of road–rail interface ▸ Bridge collapse or falling object strikes ▸ Worker injury from services strike at existing infrastructure, and underground and overhead utilities ▸ Health impacts to workers and public and environmental impact from contaminated land (construction) ▸ Impaired emergency access resulting in escalation of incident ▸ Loss of containment of freight dangerous goods and hazardous chemicals ▸ Damage to infrastructure, or injury or fatality caused by explosives incidents during construction blasting or by adjacent operators.
Waste and resources	The key potential waste and resource management impacts include: ▸ Waste disposal additional to current levels, resulting in increased consumption of airspace and reduction in capacity of waste facilities for local communities surrounding the study area ▸ Uncontrolled release of waste from the improper storage or failure of management systems, resulting in contamination of receiving environments (i.e. land, surface water and air) ▸ Increase in the incidence of vermin, insects and pests from the inappropriate storage and handling of putrescible wastes ▸ Reduced visual amenity of land uses adjacent to the proposal

Waste and resources [continued]	▸ Transportation of waste materials on and offsite, resulting in:
	  ▸ The increase of greenhouse gas emissions due to the combustion of hydrocarbons from the operation of vehicles/plant
	  ▸ Decreased amenity of land uses adjacent to the proposal from the generation of dust and road deterioration
	Risks to human health and safety of site personnel, through the release of pollutants from the poor management of regulated wastes.

3. Overview of submissions

3.1 Submissions received

During the EIS exhibition period, submissions were invited from the community and other stakeholders. The receipt of submissions was coordinated and managed by DPIE. Submissions were received electronically or via post, registered and uploaded onto the NSW Planning Portal. Submissions were then forwarded to ARTC for review and consideration. A total of 28 submissions were received by DPIE in response to the EIS exhibition period. The breakdown of submissions by submitter type is listed in Table 3.1 and shown on Figure 3.1.

Each submission was allocated a unique identification number. Appendix A: Register of Public Submission Items includes a table listing each submission by this identification number and provides a cross-reference to the section of this report where the issues raised are addressed.

TABLE 3.1: AN OF SUBMISSIONS RECEIVED AND SUBMISSION ITEMS

Submitter type	Number of submissions received	Number of submission items
Public	10	60
Organisation	2	187
Public authority	16	227
Total	28	474

FIGURE 3.1: BREAKDOWN OF SUBMISSION ITEMS BY SUBMITTER TYPE

3.2 Analysis of submissions

3.2.1 Issue categorisation

The analysis of submissions involved reviewing the content in each submission to identify the issues raised and coding these into a key issue category and submitter item category. These categories were developed based on the information and environmental aspects included in the EIS to provide an understanding of the frequency of the issues raised and the key areas of interest.

The breakdown of issues raised in public, organisation and public authority submissions is listed in Table 2.1 and shown on Figure 3.2, Figure 3.3 and Figure 3.4. Most of the submissions raised more than one issue; the number of issues raised is greater than the total number of submissions received.

TABLE 3.2: SUMMARY OF ISSUES RAISED

Key issue	No. of submission items identifying issue	Percentage of submission items identifying issue (%)
Air quality	1	0.2
Biodiversity	56	11.8
Construction	2	0.4
Consultation	18	3.8
Economic impact	5	1.1
Groundwater	3	0.6
Hazard and risk	1	0.2
Heritage	20	4.2
Hydrology	91	19.2
Land resources	2	0.4
Land use and property	1	0.2
Landscape and visual	13	2.7
Management plans	10	2.1
Noise and vibration	68	14.3
Operation and maintenance	2	0.4
project description	5	1.1
project need and justification	36	7.6
Proposal design and alternatives	73	15.4
Rehabilitation	11	2.3
Secondary approvals	12	2.5
Social impact	1	0.2
Sustainability	1	0.2
Traffic and transport	32	6.8
Waste	10	2.1

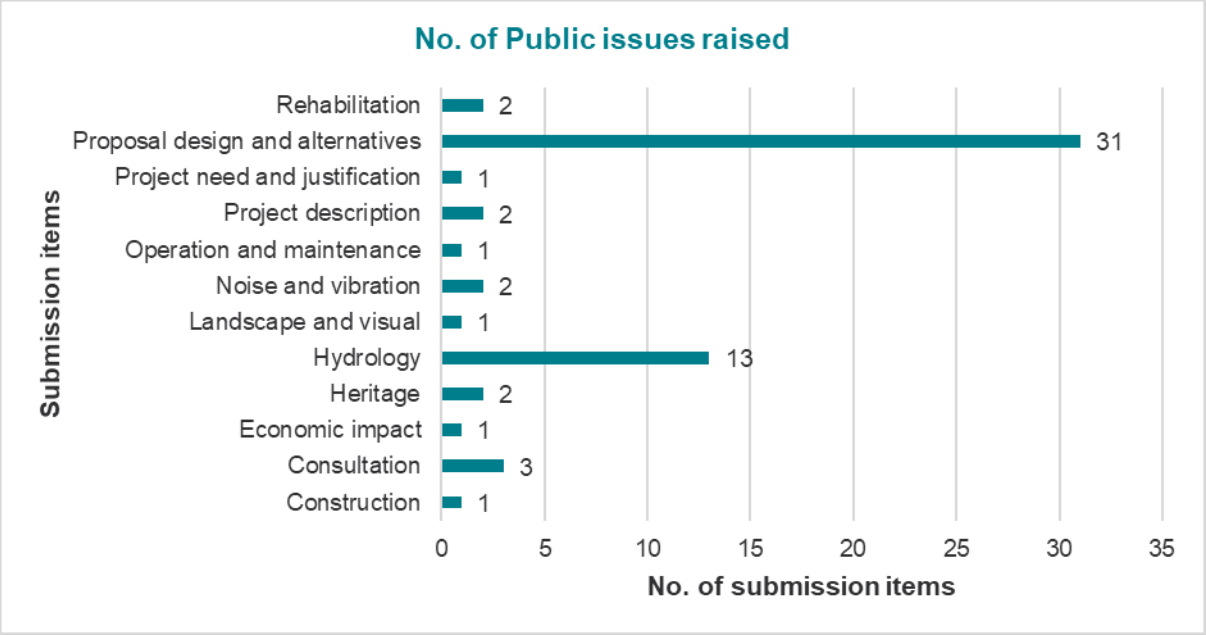


FIGURE 3.2: BREAKDOWN OF ISSUES RAISED—PUBLIC

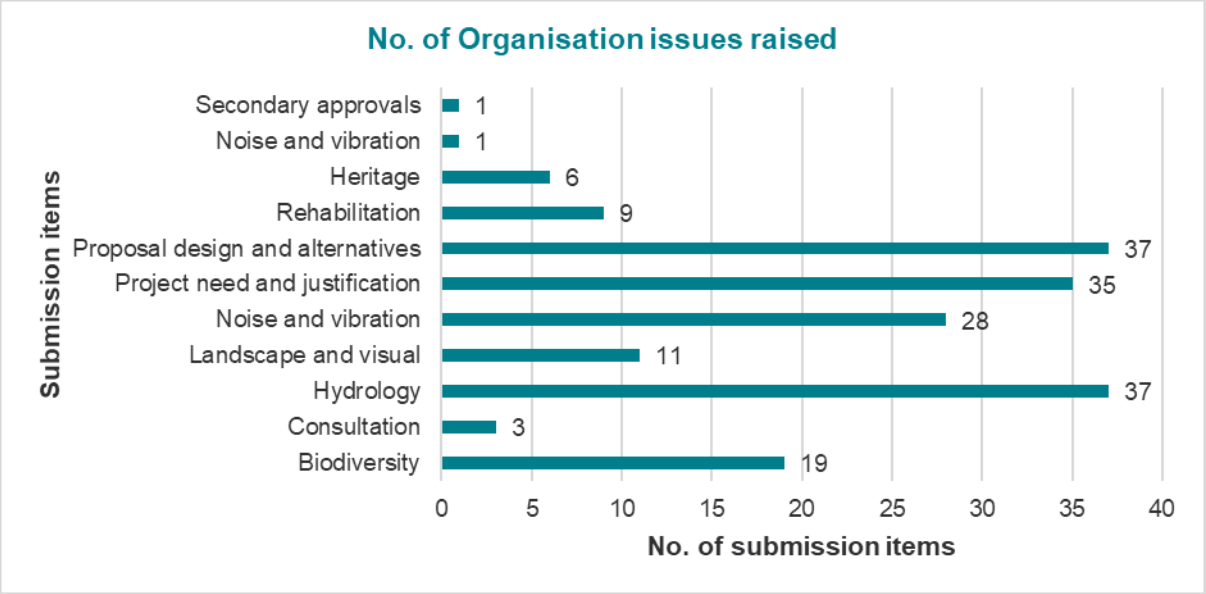


FIGURE 3.3: BREAKDOWN OF ISSUES RAISED—ORGANISATION

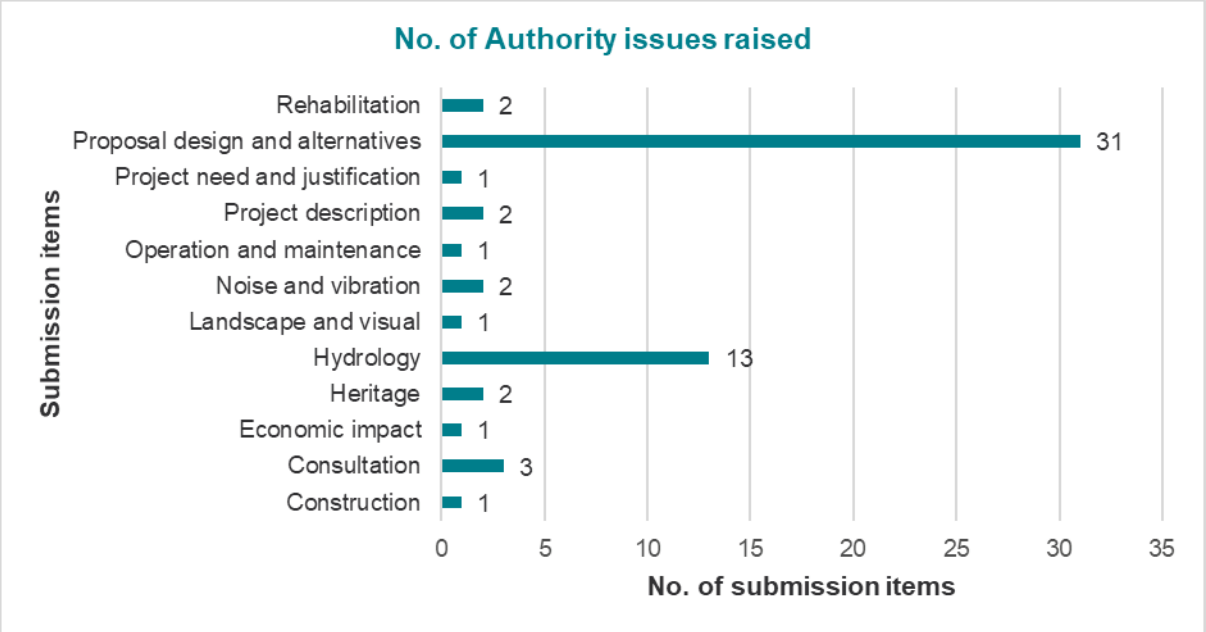


FIGURE 3.4: BREAKDOWN OF ISSUES RAISED—PUBLIC AUTHORITY

3.3 Review of submissions

3.3.1 Public submissions

Following the categorisation of each public submission, the issues raised were summarised and grouped according to the key issue category and submitter item category. Each issue identified in Section 6 (Response to public submissions) of this report is presented as a summary of the issues raised by individual submissions, with careful consideration given to the intent of each submission.

Responses to the summarised issues are provided in Section 6 (Response to public submissions) of this report according to these categories. Where required, input was sought from the technical specialists who assisted with the preparation of the EIS.

3.3.2 Review of organisation and public authority submissions

Following the categorisation of each organisation and public authority submission, the issues raised were summarised and grouped according to the key issue category and submitter item category. Each issue identified in Section 7 (Organisation and public authority submissions) of this report is presented as a summary of the issues raised by individual submissions, with careful consideration given to the intent of each submission.

Responses to the summarised issues are provided in Section 7 (Organisation and public authority submissions) of this report according to these categories. Where required, input was sought from the technical specialists who assisted with the preparation of the EIS.

4. Consultation undertaken during and after EIS exhibition

This section describes the community and stakeholder consultation undertaken subsequent to finalisation of the EIS.

4.1 Approach

ARTC's values commit the organisation to active engagement with stakeholders and the community. For Inland Rail, effective communication and stakeholder engagement are fundamental to reducing risk and minimising the potential for social and environmental impacts as far as possible. ARTC believes that identifying, engaging and effectively communicating with stakeholders is critical to the successful delivery of Inland Rail.

ARTC's approach to consultation for the proposal is described in Section 8.1 of Chapter 8: Consultation. The consultation activities undertaken prior to exhibition of the EIS are described in Sections 4.2 to 4.3 of EIS Appendix D: Consultation Summary.

The following sections describe the consultation undertaken just prior to public exhibition, consultation undertaken in conjunction with public exhibition of the EIS, and the consultation that would be undertaken during future stages of the proposal.

4.2 Consultation prior to exhibition

Section 4.2 of EIS Appendix D: Consultation Summary describe the consultation undertaken up until the end of February 2020. Subsequent to this date and prior to public exhibition of the EIS, additional consultation was undertaken. As the EIS was being finalised at this time, these activities were not described in the EIS.

Table 4.1 lists the engagement activities undertaken in 2020, prior to exhibition of the EIS.

TABLE 4.1: UNDERTAKEN IN EARLY TO MID 2020, PRIOR TO PUBLIC EXHIBITION

Activity	Detail
Program website (**inlandrail.com.au/NS2B**)	▸ Information about exhibition of the EIS was included on the Inland Rail Program website
Toll-free community information line (**1800 732 761**) and Inland Rail Program email (**inlandrailenquiries@artc.com.au**)	▸ Requests for information (the majority of which were from potential suppliers) were responded too by the stakeholder engagement team
Briefings	▸ Meetings were held with local councils to discuss options for local development to utilise Inland Rail ▸ Meetings with the NS2B Community Consultative Committee ▸ Briefings with DPIE, Transport for New South Wales (TfNSW), Department of Infrastructure, Transport, Regional Development and Communications (NSW), and DPMO's office to provide an overview of the EIS consultation focusing in on the key themes emerging from the EIS consultation ▸ Briefings with the Traditional Owners and Toomelah Local Aboriginal Land Councils (LALC) ▸ Meetings were held with interested community members to inform them of the approaching EIS public exhibition period and to finalise the hydrology consultation.
Ongoing email and telephone contact with stakeholders	▸ Regular communication was undertaken with Moree Plains Shire Council, Goondiwindi Regional Council and Gwydir Shire Council to provide updates on the proposal ▸ Ongoing engagement with the elected representatives as required ▸ Landowner enquiries were responded to as required.

4.3 Consultation during exhibition

The EIS was placed on public exhibition for a period of 42 days between 26 August and 6 October 2020. During the exhibition period, government agencies, key stakeholders (including interest groups and organisations), and the community were invited to make written submissions. A summary of the engagement activities and tools used to encourage community and stakeholder participation during the exhibition is provided below. The EIS was made available to the public at the following locations:

- Goondiwindi Library—100 Marshall Street, Goondiwindi
- Goondiwindi Regional Council—100 Marshall Street, Goondiwindi
- Goondiwindi Business Hub—116 Marshall Street, Goondiwindi
- Boggabilla Town and Country Club—94 Yeoman St, Boggabilla
- Boggabilla Central School—South St, Boggabilla
- Toomelah Aboriginal Land Council Office—Blg 41/ 3395 Tucka Tucka Road, Boggabilla
- North Star Post Office—17 Edward Street, North Star
- North Star Sporting Club—Getta Getta Rd, North Star
- Gwydir Shire Council—58 Hope Street, Warialda
- Moree Plains Shire Council—Administration/Customer Service Centre, Level 2, 30 Heber Street, Moree.

The EIS was available on the DPIE's website at: **majorprojects.planning.nsw.gov.au** and the Inland Rail Program website at **inlandrail.com.au**.

Table 4.2 lists the engagement activities undertaken during the public exhibition period. Due to COVID-19 and border crossing restrictions, the consultation during the EIS public exhibition period was tailored accordingly.

TABLE 4.2: CONSULTATION DURING THE EIS EXHIBITION PERIOD

Activity	Detail
Inland Rail Program website (**inlandrail.com.au/NS2B**)	▸ Information about public exhibition of the EIS was provided on the Inland Rail Program website
Podcast	▸ A podcast about the EIS process was made available on the Inland Rail Program website, consisting of short interviews with Inland Rail representatives
Virtual community information sessions	▸ Five virtual information sessions, including a specific session with Toomelah Land Council board members in Goondiwindi, were held during the public exhibition period. Information sessions were undertaken virtually due to the COVID-19 pandemic.
Letters to landowners	▸ Registered post letters were sent to 33 landowners directly, informing them of the commencement of the public exhibition period
Advertisements	▸ Advertisements were placed in the following local papers to provide information about exhibition of the EIS, display locations and information sessions: ▸ Moree Champion—3 September and 17 September 2020 ▸ Goondiwindi Argus—2 September and 16 September 2020 ▸ Macintyre Gazette—3 September and 17 September 2020
Summary of Findings	▸ A condensed version of the EIS, known as the Summary of Findings, was produced for the proposal to aid in communicating the main topics addressed in the EIS to members of the public
USBs containing the EIS	▸ USBs with the EIS were delivered to all directly affected landowners ▸ USBs with the EIS were provided to the local councils, Department of Infrastructure, Transport, Regional Development and Communications, local flood specialists and Toomelah LALC

Activity	Detail
Other contacts made	▸ Agencies and key stakeholders were contacted via telephone or email to encourage attendance at the community information sessions and to promote awareness of the public exhibition and submissions period. Agencies/stakeholders contacted included emergency services representatives from TfNSW (Transport for NSW), Toomelah LALC, local councils, Community Consultative Committee members and local flood specialists. ▸ Staff from Moree Plains, Goondiwindi and Gwydir councils forwarded details of the community information sessions to their contacts and ratepayers
Fact sheets	▸ A fact sheet on the proposal, which included information on how to make a submission was: made available on the Inland Rail Program website; provided to the directly affected landowners; included at public exhibition locations; and emailed through, as requested, to interested community members.

4.4 Consultation during the preparation of this report

Based on community and stakeholder feedback received during the public exhibition of the EIS, ARTC undertook additional flood consultation to address comments raised in the submissions on the EIS. This included the development of a Hydrology Working Group, which met regularly throughout the response to submissions period. Through this working group and following the receipt of a direction to produce a Preferred Infrastructure Report (PIR), the project undertook additional hydraulic and hydrological modelling to address submissions received on the EIS regarding potential flooding impacts.

Prior to the lodgement of this report, ARTC consulted with the following key stakeholders regarding the additional flood modelling:

- Department of Planning, Industry and Environment
- Moree Plains Shire Council
- Gwydir Shire Council
- Goondiwindi Regional Council
- Biodiversity, Conservation and Science Directorate of the Department of Planning, Industry and Environment (BCS)
- Directly impacted landowners.

Additional consultation was also undertaken with BCS, Transport for NSW and the Department of Primary Industry—Water regarding their submissions.

4.5 Ongoing consultation

4.5.1 Consultation plan

As described in Chapter 8: Consultation of the EIS, ARTC has developed a Communication and Engagement Plan to guide engagement with the local community. As defined by the plan, consultation will continue to be undertaken over the next three phases:

- Construction
- Commissioning and handover
- Operation.

The communication and engagement activities are tailored in the plan for each phase, and generally include:

- Meetings and briefings
- Workshops
- Community information sessions
- Phone, email and written correspondence
- Inland Rail Program website
- Distribution of information, including mail outs.

Consultation will continue on a regular basis as guided by this plan. A full list of the activities proposed is provided in Table 4.3.

TABLE 4.3: PROPOSED CONSULTATION ACTIVITIES

Activity	Timing	Design	Construction	Operation
Advertisements	Relevant milestones	✓	✓	
Stakeholder engagement team—locally based	Ongoing	✓	✓	
Community events including sponsorship	Ongoing	✓	✓	✓
Community information sessions	Ongoing	✓	✓	
Construction complaints management system	Prior to construction	✓	✓	
Construction notifications	As required	✓	✓	
Operations complaints management system	As required			✓
Email and newsletter updates	Relevant milestones and project information/updates	✓	✓	
Engagement with landowners	Ongoing	✓	✓	
Enquiries hotline and email	Ongoing	✓	✓	✓
Engagement with stakeholders including government, peak bodies, emergency services, suppliers	Ongoing	✓	✓	✓
Fact sheets	Relevant milestones	✓	✓	
project briefings and presentations	Relevant milestones	✓	✓	
Website	Ongoing	✓	✓	✓

4.5.2 Consultation and community feedback

Consultation with the community and key stakeholders will be ongoing in the lead up to, and during construction of, the preferred infrastructure. The consultation activities will aim to ensure that:

- The community and stakeholders have a high level of awareness of all processes and advanced notice of activities associated with the proposal
- Accurate and accessible information is made available
- A timely response is given to issues and concerns raised by the community
- Feedback from the community is encouraged
- Opportunities for input are provided.

The 1800 phone number and email address will continue to be available during construction, along with a 24-hour construction response line.

Targeted consultation methods, such as letters, notifications, signage and face-to-face communications, will continue to occur. The Inland Rail website and social media platforms will also include updates on the progress of the preferred infrastructure. The following communication tools and activities will be used during the construction phase:

- Email address
- 1800 phone number
- Updates to the Inland Rail website
- Targeted consultation and notifications, as required, including letters, notifications and face-to-face communication
- Construction signage.

4.5.3 Complaints management

The construction contractor engaged to construct the preferred infrastructure will be required to implement a complaints management system during construction. This system will be incorporated in the construction environmental management plan (CEMP), which the contractor will be required to prepare and have approved by ARTC prior to construction commencing. The complaints management procedure will include, at a minimum:

- Contact details for a 24-hour response line and email address, for ongoing stakeholder contact throughout construction
- Provision of accurate public information signs while construction work is in progress
- Staging of works, developed in consultation with relevant stakeholder groups, to minimise disruption and impacts on community activities and functions
- Management of complaints in accordance with ARTC's emergency management procedure, specifically:
  - Details of all complaints received will be recorded
  - Verbal and written responses will be provided within defined time limits.

5. Additional assessment undertaken following the exhibition period

5.1 Hydrology and flooding assessment

DPIE sought expert flooding and hydrology advice, noting there is a significant difference between the 1% AEP presented as the basis for assessment and mitigation in the EIS, compared to the large design flood (1976 flood event) that the *Border Rivers Floodplain Management Plan* (BRFMP) establishes as its basis for assessment. A Hydrology Working Group, with representation from DPIE, BCS, DPI—Water and ARTC was established to regularly engage on hydrology and flooding submissions during the response to submissions period and subsequent assessment period. DPIE considered that the BRFMP's large design flood (based on the 1976 flood event) provides greater consistency in assessing impacts of structures on the floodplain.

ARTC has prepared a Preferred Infrastructure Report (PIR) (2-0001-270-EAP-10-RP-0501), as directed by DPIE on 10 December 2020 (SSI-9371), which provides details for determining appropriate mitigation, where the QDLs can't be met, in consultation with the affected landowners. The project acknowledges that the QDLs and flood management objectives (FMOs) are ongoing points of consultation and, as part of the assessment work, specific consultation with affected landowners has taken place to discuss the proposal and its impacts.

5.2 Biodiversity development assessment report

An updated Biodiversity Development Assessment Report (BDAR) has been prepared, which includes the outcomes of additional surveys and presents a consolidated summation of species presence, vegetation and habitat condition, development effects and residual impacts. The Report includes revised summaries from the BDAR updates as necessary.

5.3 Social Impact Assessment—detailed response to Moree Plains Shire Council submission ID #226

In response to Moree Plains Shire Council submission ID #226, further detail has been provided in Table 5.1 on the requirements of the accommodation strategy for the proposal.

TABLE 5.1: DETAIL RESPONSES TO MOREE SHIRE PLAINS COUNCIL SUBMISSION

Matter	Response
Although the rail corridor from North Star to border is disused, there is still a need to give consideration to potential intersections with construction activities and harvest vehicle movements. This would predominantly affect the existing road system; in particular, those roads that are core roads for construction activities. There are risks, particularly with natural surface roads, that construction movements during periods of rainfall may vary and significantly impact on access for vehicles associated with harvest. This needs to be given close consideration in terms of traffic management planning and program scheduling.	ARTC acknowledges that some roads in the Project area can be in poor condition after rainfall events, with road conditions exacerbated by heavy vehicle usage. Rain may result in some roads becoming impassable. The impacts from construction vehicles on the construction routes will be minimised and mitigated through the following measures in the Traffic Management Plan (TMP): ▸ Visual assessments will be undertaken prior to, during and post construction activities, with the impacted roads maintained to a condition similar to the pre-construction condition ▸ Installation of shaker grids or rumble pads at site exit points from construction activities. The implementation of the above measures will reduce the risk of damage to roads used as part of the primary construction routes, and ensure that surveys are conducted pre, during and post construction to identify any construction--phase maintenance requirements (such as following rainfall events) and requirements for potential post-construction rehabilitation. Surveys for sealed roads may include condition assessments, such as roughness counts and visual condition assessments for unsealed roads, to ensure the road is taken back to a similar condition to what it was in the pre-construction phase. The assessment for unsealed council roads should be agreed with the relevant Council, as part of the TMP, before construction commences. The TMP will include arrangements for regularity of inspection and post-rainfall inspection requirements.

Matter	Response
[continued]	The TIA does not include the consideration of impacts to private roads. Any impacts to private roads are addressed directly with the impacted landowners as part of the project's wider consultation process, including rail interfaces with private roads. The use of any private roads during construction would require a specific agreement between the delivery contractor and the private road owner; however, a similar range of measures involving condition assessment are anticipated. As stated in the TIA, construction vehicle access will be through the existing road network and proposed access tracks. These access points will be designed in accordance with Australian Standards, with adequate sight lines to ensure they operate in a safe and efficient manner for construction traffic. In addition, where possible, access will be provided from secondary roads to minimise the potential disruptions to the nearby arterial road network. It is likely there will be some impacts to harvest season from construction vehicles; however, ongoing consultation with regulators and impacted Councils will occur in order to minimise and inform stakeholders of potential traffic impacts along harvest routes.
It is noted that a construction accommodation facility is still proposed for North Star. Council has previously made submission regarding this facility and notes that it will be very much in the hands of the Tier One contractor as to how the workers accommodation arrangements should be implemented.	ARTC will require the contractor to provide an ACMP, which will reflect ARTC's accommodation management principles and the results of the contractor's consultation with the Goondiwindi and Moree Plains Councils, and with police, regarding accommodation management and servicing. The ACMP will provide details of how the contractor will: ▸ Deliver and manage a self-sufficient accommodation facility that avoids impacts on Councils' water, sewage and waste management systems ▸ Address the results of consultation with MPSC, GRC, NSW Police and Queensland Police regarding management and servicing of the accommodation facility ▸ Monitor the number of non-local personnel who may require accommodation ▸ Minimise the use of rental housing in potentially impacted communities through the provision of a suitable, affordable accommodation ▸ Enable local businesses to benefit from the accommodation facility's supply arrangements ▸ Consult with MPSC, GSC and GRC throughout the accommodation's operational period to provide updates on workforce numbers and accommodation management strategies, and receive feedback from Councils on the effectiveness of these strategies ▸ Monitor any personnel demands on the availability and cost of rental housing, affordable accommodation provision and short-term/tourism accommodation in the SIA study area. ARTC will monitor the implementation and effectiveness of the ACMP and may require the contractor to refine their accommodation solutions if adverse impacts on housing and accommodation availability are identified.
There are significant issues around protection against risks associated with COVID–19 and these need to be closely detailed; in particular, there is evidence from other large-scale infrastructure projects that the 'catchment' for workers can be up to 110 km. In the event of shutdowns (including the Queensland border) these types of radii are problematic.	During 2020, communities, businesses, councils, and governments across Australia have been active participants in managing and avoiding the risk of COVID-19 infections. ARTC and Inland Rail take a risk-based approach to managing health and safety and have conducted risk activities to determine the risk of the coronavirus pandemic and its impact on the program. Inland Rail manages the risk of COVID-19 in accordance with the advice and guidelines provided by SafeWork Australia (the leading health and safety body in Australia) and complies with WHS Regulator (Comcare) requirements. All contractors engaged by ARTC and Inland Rail are expected to comply with these same regulatory obligations and must provide Inland Rail with assurances that it is actively managing its health and safety risks. The proposal will seek to employ locally (i.e. from the Moree Plains, Gwydir and Goondiwindi LGAs), where possible, which will minimise the risk of infection being transmitted by workers from other regions and will also mitigate the risk of restricted labour mobility to the proposal's schedule.

Matter	Response
Ideally, the workforce should be localised as much as possible, noting that this needs to be done in a way that provides support to existing accommodation providers, while avoiding overwhelming the private rental market. A work accommodation facility fundamentally needs to operate as an 'overflow' facility, given the importance of ensuring economic stimulus to existing accommodation providers.	The proposal will seek to employ locally, where possible, which will mitigate this risk to a degree. At an hour's drive between the proposal's southern point (North Star) to Moree, use of accommodation in Moree is not a viable option for workforce accommodation and Goondiwindi often has limited availability of accommodation. On this basis, the accommodation has been designed with adequate capacity for all non-local workers. The contractor's *Accommodation Camp Management Plan* will include provisions to enable local businesses to benefit from the accommodation facility's supply arrangements.
The issue of labour market is critical; in particular, there is very high level of expenditure associated with drought recovery, COVID-19 stimulus and other infrastructure spending programs. There is a high risk that the construction phase may overlap with other regionally important construction projects. Caution should therefore be exercised in terms of assuming a slack labour market.	The SIA technical report doesn't use the term' slack labour market'. The cumulative SIA notes that, *'If multiple projects are constructed in the same time frame, there may be a significant draw on trades and construction labour'.* The proposal will seek to employ locally (i.e. from the Moree Plains, Gwydir and Goondiwindi LGAs), wherever possible, which will minimise the risk of infection being transmitted by workers from other regions and will also mitigate the risk of restricted labour mobility to the proposal's schedule.
An accommodation strategy is required and this needs to be conditioned. The strategy needs to be in place substantially before the commencement of construction. Close collaboration with accommodation providers, local councils and other stakeholders is essential.	Further detail has been provided in the *Accommodation Camp Management Plan* above, including the requirement for consultation with Councils and other stakeholders.
An additional matter is the impact on health services and the importance of having self-sufficiency in terms of first-responder capability, given the industrial nature of the activity and the relative risks of injury. Careful consideration also needs to be given to access to higher order medical services, given the shortcomings of the hospital system in Moree.	The SIA notes, *'The construction workforce of up to 350 personnel may generate a small increase in demand for health services in the proposal region. For the most part this would involve minor injuries and illness attended to by GPs in Goondiwindi. Goondiwindi Regional Council advised that Goondiwindi is well supplied with health and medical staff and therefore this short-term demand is not expected to be a significant burden on local services.* *Increased demands on hospital and health services in Goondiwindi are also likely from non-local and local construction personnel. Smaller hospitals are highly tuned to their population's needs so this may require some adjustment to hospital and health service provision, which will require early communication from ARTC to Queensland Health.'* The SIA notes (section 7.6.2) that employment of paramedic staff by the proposal will offset some of the demand for health and ambulance services. Significant impacts on health services in Moree Plains are not expected from workforce demand. ARTC has committed to supplying paramedic and security staff to service the workers' accommodation, as detailed in Table 66 of EIS Appendix O: Social Impact Assessment Technical Report.

Matter	Response
Key point: An accommodation strategy is required, well before construction commences, that addresses the following: ▸ COVID-19 risk management ▸ Economic benefit to existing accommodation providers ▸ Avoidance of negative impacts on the private rental market ▸ Access to health services	1. ARTC will require the contractor to provide an ACMP, which will reflect ARTC's accommodation management principles and the results of the contractor's consultation with the Goondiwindi and Moree Plains Councils, and with police, regarding accommodation management and servicing. 2. The ACMP will provide details of how the contractor will: ▸ Deliver and manage a self-sufficient accommodation facility that avoids impacts on Councils' water, sewage and waste management systems ▸ Address the results of consultation with MPSC, GRC, NSW Police and Queensland Police regarding management and servicing of the accommodation ▸ Monitor the number of non-local personnel who may require accommodation ▸ Minimise the use of rental housing in potentially impacted communities through the provision of a suitable, affordable accommodation facility ▸ Enable local businesses to benefit from the accommodation facility's supply arrangements ▸ Consult with MPSC, GSC and GRC throughout the accommodation facility's operational period to provide updates on workforce numbers and accommodation management strategies, and receive feedback from Councils on the effectiveness of these strategies ▸ Monitor any personnel demands on the availability and cost of rental housing, affordable accommodation provision and short-term/tourism accommodation in the SIA study area. ARTC will monitor the implementation and effectiveness of the ACMP and may require the contractor to refine their accommodation solutions if adverse impacts on housing and accommodation availability are identified. Significant economic benefits for accommodation providers are not expected due to the distance (1–1.5 hr drive) between the proposal and Moree. Significant impacts on health services in Moree are not anticipated due to distance from the proposal (and because Goondiwindi facilities are closer). Responses regarding COVID-19 are noted above.

6. Response to public submissions

6.1 Support/objection

Of the 10 submissions received from the public, one submitter expressed support for the proposal, six submitters objected to the proposal and three submitters provided comments on the proposal. Appendix B: Public Submissions Responses further details the submissions and issues, and their associated responses.

6.2 Proposal design and alternatives

6.2.1 Access impacts

Identification number

265, 266, 269, 272, 273 and 276

Summary of issues raised

Six submissions raised concerns about access impacts from the proposal. Issues raised included:

- Concern with stock and heavy machinery crossing currently used at Mobinbry Creek bridge, which will be fenced off as a result of the proposal
- Concern with private new farm access (Ohmi Cattle Yards and south of Wearne siding) and provision of an 8-m wide road for farming operations, during construction of the proposal
- Concern with restriction of private rail line crossings and reduced access locations at 'Oakhurst'
- Concern with private farm access during construction of the proposal
- Concern with closure of northern entrance to 'Terenure' on the western boundary and disruption of access causing an additional 10 km of travel to North Star from the property
- Request for access locations at 'Terenure' to be documented in the detailed design of the proposal.

Response

Stock and heavy machinery crossing at Mobinbry Creek bridge

The proposal is not proposing to impact the road reserve, and the access currently available in the road reserve will not be impacted. Sufficient access to the road reserve during construction will be made available as required.

Provision of an eight-metre wide road for farming operations

The proposal will reconfirm with the landowner the reasons why an 8-m wide access track is not required at Ohmi Cattle Yards, and south of Wearne siding, as the existing access track is not 8 m wide and 8 m was not mentioned during discussions with the landowner. The proposal will reconfirm the needs, and their intended vehicles for use, to confirm reasonable access track widths and clearances.

Restriction of private rail line crossings and reduced access locations at Oakhurst

The lost access points referred to in comment ID #269 may include unapproved level crossings of the existing non-operational brownfield rail corridor and unapproved use at old bridge or drainage structures. To assist with managing road–rail safety interfaces, ARTC is seeking to minimise the number of level crossings along the Inland Rail route, consistent with ONRSR's position to remove level crossings wherever possible and limit the creation of new level crossings unless totally avoidable; as such, it is not proposed to officially create new level crossings in these locations. ARTC has engaged with the landowner and, based on this, believed we had provided appropriate reasonable access to these farms and businesses. We also only identified a total of eight extant level crossings.

The owner is still able to use the three public level crossings to access their farms. In addition, we are providing the landowner two new accesses off the road network, two new private level crossings, and two new grade-separated crossings.

The following is a breakdown of the access available in the proposal at this landowner's land parcels:

- 1 x unapproved agricultural crossing at Mobbindry Creek (Chainage 5,866)—a new private level crossing will not be opened at this location; however, 4-wheel-drive and stock access is being provided below the nearby bridge
- 2 x private accesses at existing North Star Road public level crossing (Chainage 7,058)—both accesses are being relocated further from the upgraded public level crossing for safety reasons
- 1 x private level crossing at Ohmi Stockyard (Chainage 9,039)—private level crossing is being relocated to Chainage 9,212 for safety reasons.
- 1 x unapproved agricultural crossing south of Forest Ck Road (Chainage 11,375)—a new private level crossing is not being opened at this location. The landowner is able to access their property via Forest Creek Road public level crossing.
- 1 x unapproved agricultural crossing (Chainage 17,420)—a new private level crossing is not being opened at this location. The landowner is able to access their property via a private level crossing at Chainage 19,847 or the North Star Road public level crossing.
- 2 x private level crossings (Chainage 18,810 and Chainage 19,579)—private level crossings are being consolidated to one private level crossing and this has been being relocated to Chainage 19,847.

Restriction of private farm access

ARTC will consult throughout the construction phase to provide suitable access to all local landowners in the community. This will be outlined in the Communication Strategy, which will require that adequate notice is given to the community.

Closure of northern entrance to 'Terenure'

As a result of engagement with the landowner, the existing informal rail crossing at the northern end of Lot: 7 DP756011 was relocated to the southern end of the same parcel (see comment ID #274), at the landowners request, so that it allows agricultural machinery access to a small parcel of crop land on the western side of North Star Road. The landowner is not precluded from using the new level crossing location for travel from homestead to North Star; furthermore, the difference in distance is approximately 3.8 km each way.

Documentation of access locations in detailed design

As a result of engagement with the landowner, ARTC understands the land on the eastern side of the existing corridor is especially important, for the reasons described in comment ID #276. As such, the design does not encroach over the existing corridor boundary on that side. A portion of land is, however, required, to widen the corridor to the west, and land may be required temporarily during construction for laydown, storage, and rail and bridge construction.

6.2.2 Agricultural land use impacts

Identification number

241 and 242

Summary of issues raised

Two submissions raised concerns about agricultural land use impacts from the proposal. Issues raised included:

- Concern with severance of 'Merawah' and impact on farming operations, due to limited access to the rail line, during construction of the proposal
- Concern with design flood and impact on productivity of agricultural land from inundation of 'Merawah'.

Response

Severance of 'Merawah' and impact on farming operations

The proposal has consulted with this directly impacted landowner, and the bridges that transect the property will have a 2.7-m high clearance to allow for cattle and vehicles to pass under the rail alignment safely. This will be incorporated during the detailed design phase. Discussions with directly impacted landowners will continue during the detailed design phase.

Property value and flooding of 'Merawah'

An independent qualified valuer will be engaged by ARTC to assess compensation pursuant to the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW). Flooding, visual, vibration and noise impacts of the proposal, and restriction to access as a direct and natural consequence of the acquisition will be considered by the valuer in accordance with Section 55 of the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW).

The *Hydrology Preferred Infrastructure Report* provides a summary of the updated hydraulic modelling undertaken for the proposal in compliance with ARR 2019. Flood impacts against both 1976 and 1% AEP events are documented and assessed against FMOs agreed by the DPIE Hydrology Working Group.

6.2.3 Alignment

Identification number

296, 240, 239, 246 and 289

Summary of issues raised

Five submissions raised concerns about the proposed alignment for NS2B. Issues raised included concern with:

- Selection of the Option D1 alignment due to flooding impacts and support for further studies to be conducted on the viability of the Option A alignment
- Consideration of community opinions in the selection of the Option D1 alignment
- Level of detail provided in the description and analysis for the selection of alternatives and options to define the corridor preference
- Selection of the Option D1 alignment due to flooding impacts and suggestion to use the 1922–23 flood as a key reference event in development of detailed design for the proposal
- Selection of the Option D1 alignment, due to flooding impacts, and support for the Option A alignment based on perceived greater flood amenity.

Response

Detailed consultation has been carried out throughout the route selection and EIS process and was one of the key criteria used in the multi-criteria analysis (MCA). A summary of consultation carried out is presented in Section 4: Consultation undertaken before and after EIS exhibition, and in EIS Appendix D: Consultation Summary. ARTC acknowledges that some members of the community were not supportive of the D1 alignment decision and still preferred Option A.

The chosen alignment has been supported by several technical reports and reviews, which are detailed in Section 3 of the EIS and the EIS Summary of Findings. These include the *2010 Melbourne-Brisbane Inland Rail Alignment Study*, the *2015 Alignment Development Assessment Report*, the early 2016 *Concept Assessment Study*, the late 2016 *Continuity Alignment Study*, the mid-2017 *Preparatory Alignment Assessment Report*, the early 2019 MCA revalidation and the 2019/2020 Alignment D1 and Alignment A developed comparison. Community consultation was extensive throughout this process.

The mid-2017 *Preparatory Alignment Assessment Report* consisted of an MCA for the six alignment options (2016 base case, Option A, Option D1, Option E, Option E1 and Option F). The core criteria assessed were technical viability, safety, constructability, operation, environment, community and property impacts, and statutory and regulation risk. The MCA identified that Option D1 provides the best overall improvement from the 2016 base case, with all criteria scoring equal to the 2016 base case or better. Cost is also comparable to the 2016 base case. Option A provides improvements over the 2016 base case in areas relating to community (preferred alignment for landowners), property and flooding; however, Option A is a longer route and results in comparatively significant operational impacts, such as an increased runtime of five additional minutes against the base case and Option D1. The longer route would also cost an estimated additional $45 million to construct in comparison to the base case and approximately $43 million compared to Option D1. Option A also requires more crossings than the 2016 base case and Option D1, including a crossing linking the cotton gin, which is expected to be highly used during harvesting. From an environmental perspective, Option D1 has overall reduced impacts on ecology, flooding, air quality, soils, visual and noise and vibration compared to the 2016 base case and Option A.

Due to NS2B's size, timing of EIS investigations and community feedback, ARTC decided to test the program's MCA decision-making tool. During the NS2B EIS investigation phase, an independent, evidence-based compliance review of ARTCs MCAs for NS2B was conducted to test the appropriateness of this process. The review concluded that all reports for NS2B route selection described the options assessment and MCA procedure in detail. The review for NS2B also concluded that the robust methodology applied has been consistent and transparent and directly aligns with ARTC and Australian Government objectives and policy. This process has been used on other ARTC projects for the purpose of alignment selection.

In addition to the independent review, ARTC undertook a base engineering design review for two options, to further challenge processes undertaken for route selection. Once again, given the practicality of size of NS2B, it was ideal to challenge historical decision making and processes undertaken by ARTC in phase 1 of the program. The 2019/2020 Alignment D1 and Alignment A developed comparison migrated the base engineering design and assumptions from Alignment D1 to Alignment A in order to understand the potential impacts of Alignment A when validated against the updated Macintyre River Flood Model. A key outcome of this activity was that by maintaining the same level of flood immunity, the direct cost differential between Alignment A and D1 increased substantially from the original 2017 cost comparison. This was due to Alignment A being 10 km longer, with more of the alignment located in the floodplain; hence, the option required a greater quantity of fill, as well as increased bridge length (644 m more bridges) and culvert infrastructure (469 additional culverts). This further confirms that ARTC has applied a relevant and transparent route selection process to appropriately assess alignment selection.

6.2.4 Consultation

Identification number

277, 278 and 280

Summary of issues raised

Three submissions raised concerns about consultation undertaken for the proposal. Issues raised included:

- Request for fencing requirements and maintenance to be agreed with landowners
- Concern with landowner consultation for the proposed crossing loop at chainage 17,300 and requirements of land area
- Request for construction laydown area requirements to be agreed with landowners.

Response

Fencing requirements and maintenance

ARTC is to conduct fence maintenance along the alignment in accordance with ARTC policy.

Where fencing is required, the relevant landowner will select the type of fencing in a like-for-like fashion from ARTC's standard fence and gate types, to suit the farm operations. Internal fencing matters will be considered, as appropriate, during the land acquisition process.

Crossing loop

An indicative location of the crossing loop is included in the EIS. The location of this loop may change as the design is refined during the detailed design phase. The location may change between chainage 16.5 km and chainage 24.9 km; however, it will remain within the permanent footprint shown in Figure 6.5 of the EIS. ARTC is seeking to minimise crossing delays across the entire 1,700 km Inland Rail Program by optimising the number and location of crossing loops. This is an iterative process, as all 13 Inland Rail projects are at different stages of design development and construction. projects that are in the construction phase have definitive crossing loop locations; however, opportunities exist on projects that are still in the design stage (such as NS2B) to optimise the location of crossing loops.

Extensive landowner consultation regarding the proposed route has been undertaken in the EIS and reference design phase. For a summary of the route selection process, please see Section 3.3 Alternative locations and route options for the proposal in the EIS. Consultation with landowners on the route alignment will continue throughout the detailed design, construction and operational phases.

Where full or partial property acquisition is required (i.e. where the proposed corridor deviates from the existing corridor), the acquisition of land will be undertaken in consultation with landowners and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) acquisition and compensation process.

Construction laydown area

Where land is temporarily required to support construction activities (such as for laydown areas), voluntary private agreements will be entered into between the proposal and the relevant landowner for the occupancy and use of private land. This agreement will include details around compensation and how the land is to be returned to the relevant landowner. The proposal will develop a Rehabilitation and Reinstatement Management Plan, which will form part of the CEMP. The Rehabilitation and Reinstatement Management Plan will include measures to reinstate and restore disturbed sites, as much as possible, to the pre-construction condition or better, or to the satisfaction of landowners.

6.2.5 Crossing loop location

Identification number

250

Summary of issues raised

The submitter is concerned with the location of the crossing loop in the floodplain and has expressed their preference for it to be located south of the floodplain.

Response

Crossing loops on single-line rail networks are typically located to suit the network operability as determined by detailed modelling. This modelling was undertaken in the feasibility design that incorporated all other nominated crossing loops north and south of this loop, from Melbourne to Brisbane. As this modelling is subject to a lot of variables and, therefore, change between feasibility and detailed design, a range has been proposed. The proposed range of locations for this crossing loop are detailed in Chapter 6: The Proposal (Section 6.2.2.1), with a map on page 6–30 showing the range of potential locations.

A crossing loop widens the embankment and, as such, will not place more obstruction in the floodplain. Proposed number of culverts and bridges will stay the same but they will be longer due to the wider embankment.

6.2.6 Fencing

Identification number

256 and 275

Summary of issues raised

Two submissions raised concerns about fencing impacts from the proposal. Issues raised included:

- Concern with fencing strategy for the proposal, specifically regarding fencing requirements for types of livestock and responsibility of maintenance
- Concern with fencing at the underpass at chainage 16,493, so that no livestock are capable of crossing overhead.

Response

Fencing strategy for the proposal

Where fencing is deemed appropriate at a boundary with private land, ARTC will seek to engage with that landowner to agree on the type of fencing, from ARTC's standard fence and gate types, to suit their farm operations. Rural fence types include the following:

- 4 strand barbed
- 6 strand, with top 2 barbed
- Wire netting, with top 2 barbed

These are generally 1.2 m high with Circular Hollow Section (CHS) steel strainer posts with concrete foundations at 100 m max centres and steel star posts at 5–10 m centres, with droppers at 1,665 m max centres.

The specific fencing and gate layout used will be further developed during the detailed design process in association with the landowner. Internal fencing, if impacted, will be considered during in the land acquisition process (as appropriate).

Once construction of the NS2B line is complete, operation of the rail line will be incorporated into ARTC's existing Interstate Network. Ongoing maintenance of fences will be managed in accordance with ARTC's Assets Management System, technical standards, and procedures; however, may also be adjusted to suit other constraints, such as areas around fauna crossings. General clauses included that ARTC will fix damaged fences due to action of own staff or contractors, general wear and tear, or acts of nature. ARTC will not repair damage caused by actions of others.

Fencing at the underpass at chainage 16,493

The appropriate fencing and gates will be put in place around crossings of the rail corridor in order to prevent stock entering. The gate and fencing configurations will be incorporated in the detailed design based on input from the landowner. ARTC has provided the landowner a fencing and gate feedback form and property plans to commence this process.

6.2.7 Financial inputs

Identification number

282

Summary of issues raised

The submitter does not support the proposal, particularly the change to the Option D1 alignment, as they believe that there will not be a substantial enough economic benefit to warrant the social and environmental costs.

Response

The purpose of the Investment Case (Inland Rail Program Business Case, 2015) was to inform the Commonwealth's decision on whether or not to invest in the progression of the Inland Rail project. It evaluated the benefit, cost and risk of alternative options, and provided an evidence base to inform consideration of the preferred solution. Once the financial (investment) decision had been made to proceed with the Inland Rail Program, the statutory approval process commenced. Inland Rail, as a State significant project in NSW, is required to respond to the Secretary's Environmental Assessment Requirements (SEARs) with an EIS.

The purpose of the EIS process is to inform decision makers and the public of the environmental consequences of implementing the proposal. The environmental impact assessment identifies, predicts and analyses impacts on the physical environment, as well as social, cultural, economic and health impacts. The proponent is required to produce documentation describing the proposal, the potential environmental impacts and how these impacts would be managed. The economic analysis provided in the EIS response is tailored to consider these impacts and appropriate mitigation measures.

6.2.8 Land acquisition

Identification number

290

Summary of issues raised

The submitter is concerned with acquisition of Crown land for the proposal and subsequent reduced access between Lot: 3 DP 1181234 and Lot: 4 DP 1181234.

Response

Under the current design, the permanent footprint of the proposal does not include the east–west Crown road along the southern boundary of Lot: 3 DP 1181234, introducing no impact on access to Lot: 4 DP 1181234.

6.2.9 Level crossings

Identification number

274

Summary of issues raised

The submitter requests a gate with an electric lock for their private crossing at chainage 15,350 and for it to be 12 m wide to allow for farm machinery.

Response

ARTC has noted the stock crossing and clearance of 12 m required for wide body machinery. The gate and fencing configurations will be incorporated in the detailed design based on input from the landowner. ARTC has provided the landowner a fencing and gate feedback form and property plans to commence this process. The gates to private level crossings will be managed by the landowner and locks will be at the landowner's discretion.

6.2.10 Safety

Identification number

261

Summary of issues raised

The submitter is concerned with blackouts of warning lights at crossings. The submitter suggests consideration of backup power and installation of an additional set of warning lights at the Boggabilla/North Star Road crossing in 'Ohmi'.

Response

All level crossings will be designed to comply with the Australian Standard for Railway Crossings (AS1742.7 *2016 Manual of Uniform Traffic Control Devices, Part 7 Railway Crossings*). This includes a requirement that the primary control (i.e. flashing lights) at crossings shall be visible to an approaching driver at the safe stopping distance.

All active level crossings are provided with a backup battery bank to keep the level crossing operational during power outages. The batteries give a backup of 36–48 hours. If the batteries start to go flat, alarms are sent to Network Control and trains are warned that the level crossing may be faulty and to follow the Network rules. In this case, the train will stop and ensure road traffic has stopped before proceeding across the level crossing.

In determining road and rail crossing treatments, Inland Rail has conservatively used 2040 traffic forecasts. Allowances have also been incorporated with the traffic numbers for harvest, in recognition of the fact that the initial counts were undertaken during a period of drought.

6.2.11 Traffic impacts

Identification number

238

Summary of issues raised

The submitter is concerned with the reduced number of level crossings at important thoroughfares and the Option D1 alignment causing congestions and safety implications. The submitter suggests keeping the existing road to the east of the rail line from 'Ohmi' through to 'Wearne' as the local shire council estimated the cost of this as being $7 million for the 14 km of new road needed in upgrading it, and that an upgrade would help to alleviate several blind corners and deceptive inclines on said road.

Response

The proposal uses the existing rail corridor in the area in question and includes the two stated existing level crossings. The proposal comprehensively addresses the safety implications of these two-level crossings.

The proposal is informed by the industry recognised and approved Australian Level Crossing Assessment Model investigation process, which is used for all public level crossings that are part of Inland Rail, and incorporates school bus routes and traffic numbers projected to 2040. This process determines safe traffic treatment methods. These particular crossings will be improved with new road approaches, new signs and line markings, and two will be upgraded to active level crossings with lights and booms.

The submitters idea seems simple and beneficial and was investigated by ARTC when it was first posed by the community and the local government area. This investigation identified the following additional impacts of upgrading the existing road:

- Approximately 14 km of new road
- Two (2) new bridges (approximately 244 m)
- 155 lengths of culverts (approximately 1,860 m)

- 11 km power and communications relocation
- 300,000 square metres (m^2) land acquisition
- Demolition of existing roads, culverts and bridges.

The investigation also highlighted that two of the level crossings would still be required in order to service Scotts Road and Oakhurst Road, respectively. The number of private level crossings required may also increase to service landowners now on the other side of the rail corridor, which, in turn, would minimise the potential safety benefits of the submitter's idea.

The proposal also investigated the traffic impact of these level crossings. This included estimated train numbers in 2040 and current measured road traffic numbers projected to 2040 with a 2 per cent per annum growth rate. The current Level of Service ranking of A is not impacted by the proposal.

ARTC has not seen the local shire council's estimate mentioned by the submitter; however, the value given seems, in order of magnitudes, lower than what the cost of developing the infrastructure listed above would be.

As the proposal uses the existing rail corridor and limited reduction of level crossings, it is not practical for the existing road to be upgraded by ARTC, especially when the high cost is also considered.

ARTC has no control over the stated blind corners and deceptive inclines posed by the existing roads, and concerns should be raised with the relevant road authority.

6.2.12 Travelling stock routes

Identification number

254, 258, 259 and 271

Summary of issues raised

Four submissions raised concerns about travelling stock route impacts from the proposal. Issues raised included concern regarding:

- Impact of the proposal on the functionality of the travelling stock routes
- Access to travelling stock routes and stock water under Back Creek, north of Boggabilla/North Star Road crossing at 'Ohmi' and south of Boggabilla/North Star crossing at Wearne
- Timing of train movements through properties and requirements for holding areas
- Narrower travelling stock routes as a result of the proposal and impacts to persons and animal safety.

Response

Functionality of travelling stock routes

The proposal has had meetings with Crown Lands and Local Land Services regarding the formal TSRs. While the non-operational brownfield section of the rail alignment will no longer be able to be used for stock travel, sufficient width on the roads to allow stock travel has been included and suitable crossing points (level and grade separated) have been made available in the reference design. Crown Lands and Local Land Services did not express opposition to our proposed approach regarding TSRs.

Access to travelling stock routes and stock water

As agreed by all parties, this will be further developed during detailed design of the proposal and in consultation with the relevant landowners.

Requirements for holding areas

Crossings will be designed in accordance with the relevant technical engineering standards. These standards do not include holding areas either side of the crossing. ARTC has consulted with Local Land Services on this matter and they had no objection.

Narrower travelling stock routes

Areas within the existing non-operational brownfield section of the rail corridor will no longer be able to be used as an informal stock route; however; this land was always designed as rail corridor. ARTC has consulted with Local Land Services on this matter and they had no objection.

6.2.13 Utilities

Identification number

281

Summary of issues raised

The submitter has expressed their expectations regarding utilities not being interrupted and that works are undertaken in a compliant manner.

Response

ARTC do require the existing overhead power line to be raised at the rail crossing location. This asset is owned and managed by Essential Energy and, as such, all design and construction will be required to be approved by them and done to their standards and requirements.

6.3 Project need and justification

6.3.1 Approval conditions

Identification number

292

Summary of issues raised

The submitter expressed their belief that, in its current form, the proposal does not adequately protect the communities it will impact, nor provide the intended benefits.

Response

No response required; this has been addressed in previous comments.

6.4 Project description

6.4.1 Construction accommodation

Identification number

252 and 247

Summary of issues raised

Two submissions raised concerns about construction accommodation impacts from the proposal. Issues raised included concern regarding:

- Impaired mobile phone network, due to the required usage for construction and operation of the proposal
- Location, legacy and associated arrangements of the construction accommodation facility.

Response

Impaired mobile phone network

Inland Rail understands this is a concern for the community—a telecommunications working group has been established to investigate options to address community network coverage. The working group consists of Inland Rail, the Department of Infrastructure, and Telstra representatives.

Construction accommodation arrangements

For the purpose of the EIS, it was assumed that the construction accommodation will be demobilised post completion of construction, with any use beyond this phase requiring appropriate assessment under the EP&A Act, regulations and associated SEPPs.

The EIS is only seeking approval for the use required for the proposal. Any other proposed use will require relevant approval consistent with its proposed use.

6.5 Construction

6.5.1 Borrow pits

Identification number

297

Summary of issues raised

The submitter has expressed the availability of a quarry site on their property (5535 North Star Road, North Star, NSW 2408 part of Lot: 7 DP 755984), suggesting that the quarry material is suitable for fill materials, ballast and capping.

Response

Noted.

6.6 Operation and maintenance

6.6.1 Financial impacts

Identification number

257

Summary of issues raised

The submitter is concerned with increases to their public liability insurance and access to property.

Response

When the submitter or their staff are crossing the rail corridor, they are on ARTC land and, therefore, ARTC's public liability covers them.

6.7 Economic impact

6.7.1 Cost benefit analysis

Identification number

291

Summary of issues raised

The submitter is concerned with the economic benefit of the proposal and Inland Rail to the region, specifically around its ability to connect regional producers to exporting ports, and points to the Option A alignment being a more favourable option in benefiting the community.

Response

This EIS has been developed according to the SEARs and with reference to the *Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment* (Roads and Maritime Services, 2013). Accordingly, the approach adopted for this report reflects the recognised industry approach to undertaking an environmental impact assessment.

Due to the nature of the incremental assessment approach adopted for this EIS (i.e. a separate assessment for each project within the Inland Rail Program), the benefits of the Inland Rail Program as a whole are more than the sum of the individual project benefits. Consequently, ARTC determined an economic assessment methodology should be adopted, which is designed to capture the proposal-specific impacts on a project-by-project basis. While there are benefits that are only attributable to the completion of the overarching program, the approach adopted does assess both incremental user and non-user benefits as well as impacts on the broader economy. This approach was endorsed by the NSW Government. Accordingly, EIS Appendix I: Economic Assessment has focused on the anticipated benefit streams attributable to this link of the proposal. These incremental benefits are not additive across multiple sections and cannot be summed due to interdependencies of each section.

6.8 Heritage

6.8.1 Relocation of artefacts

Identification number

253 and 279

Summary of issues raised

Two submissions raised concerns about construction accommodation impacts from the proposal. Issues raised included:

- Request for artefact relocations from the Mobinbry travelling stock route reserve to an Aboriginal site known as 'scar tree'
- Support for approach to relocating heritage items to the bank of Mobinbry Creek near significant site AHIMS #2-4-0046, which is a scar tree.

Response

Artefacts will be salvaged and held by ARTC until a management arrangement can be agreed in consultation with the RAPs. Management arrangements could include returning the artefacts to Country as an 'on country' keeping place or completing a care and custody agreement. Return to Country near the scar tree at Mobinbry Creek can be considered as an 'on Country' keeping place in these discussions (where appropriate).

6.9 Hydrology

6.9.1 1976 flood event

Identification number

248, 268, 283, 284, 293, 294 and 243

Summary of issues raised

Seven submissions raised concerns about reference to the 1976 flood event. Issues raised included:

- Request for the 1976 flood event to be used as the flood design for the proposal and the basis for compensation, as it is the experienced flood of many residents in the valley
- Concern regarding flood design based on a 1% Annual Exceedance Probability (AEP) flood rather than the 1976 flood event, which is considered the benchmark event in the valley
- Concern regarding flooding affluxes of over 0.5 m, which would significantly impact 'Budleigh' and livestock due to the 'high grounds' not being elevated high enough to protect from flooding
- Concern with safety fencing creating a hazard during flood events for livestock trying to seek refuge.

Response

The Hydrology *Preferred Infrastructure Report* provides a summary of the updated hydraulic modelling undertaken for the proposal in compliance with ARR 2019 and the requirements of DPIE's request to complete a Preferred Infrastructure Report (PIR). Flood impacts against the 1976 and 1% AEP events have been analysed and assessed against the QDLs specified in the *Narrabri to North Star Infrastructure Approval*. Alternative QDLs have also been derived that are subject to ongoing consultation and agreement with DPIE and affected landowners.

Preliminary landowner consultation has been undertaken to communicate the findings of the revised analysis in the PIR, and engagement is continuing with DPIE appointed specialists and independent reviewers as part of the function of the Hydrology Working Group. These activities will continue until final agreement on acceptable levels and the mitigations to achieve those levels is achieved.

The AEP of the 1976 event has been reviewed further as part of the updated hydraulic modelling and discussed with both DPIE and GRC.

6.9.2 Flow paths

Identification number

286 and 288

Summary of issues raised

Two submissions raised concerns about flow paths from the proposal. Issues raised included concern regarding:

- Route selection and removal of the non-operational part of the Boggabilla line up to the southern side of Whalan Creek, as it will provide insufficient flood protection. Suggests removal of Whalan Bridge and the northern embankment.
- Allowable velocities and approach to mitigation measures for scouring and erosion caused by the proposal, given the high erodibility of vertosol soils and potential for gullying and blockages at culverts. Suggests crossings to be constructed as bridges or viaducts.

Response

The EIS assessment has reviewed flow distribution, changes in levels, velocities and inundation durations, to determine the potential impact and mitigation measures required to minimise scour and erosion.

The *Hydrology Preferred Infrastructure Report* provides a summary of the updated hydraulic modelling undertaken for the proposal in compliance with ARR 2019. Flood impacts against both 1976 and 1% AEP events are documented and assessed against FMOs agreed by the DPIE Hydrology Working Group.

Flood impacts will also be considered further in detailed design, when detailed soil studies are completed.

6.9.3 Alignment

Identification number

287, 245 and 249

Summary of issues raised

Three submissions raised concerns about route selection for the proposal and flooding impacts. Issues raised included concern regarding:

- Route selection, and disagree that removal of the non-operational part of the Boggabilla line would increase peak water levels upstream; rather believe that peak water levels will decrease, as it would allow for natural drainage to occur to the south west, through Maynes and Morella Lagoons
- Route selection due to flooding from Toomelah in the east to downstream of Goondiwindi and lack of consultation with landowners. Requests ARTC to provide more detailed information on infrastructure (bridges, culverts, rail line, embankment and roads) proposed in EIS.
- Concern with route selection due to flooding impacts, affecting landowners along the Macintyre River.

Response

Removal of non-operational part of the Boggabilla line and peak water levels

This modelled scenario includes removing the old rail alignment from the existing case from North Star to Boggabilla, hence lowering flood levels downstream of the old rail line. In the Developed Case the old rail line is reinstated from north of Whalan Creek to Boggabilla and this is the area in which increased levels are shown upstream of the old rail alignment. As would be expected, introducing the old rail embankment presents restrictions to flood flows until it is overtopped.

The *Hydrology Preferred Infrastructure Report* provides a summary of the updated hydraulic modelling undertaken for the proposal in compliance with ARR 2019. Flood impacts against the 1976 and 1% AEP have been analysed and assessed against the QDLs specified in the Narrabri to North Star Infrastructure Approval. Alternative QDLs have also been derived that are subject to ongoing consultation and agreement with DPIE and affected landowners.

Refer to Section 6.2.3 for a discussion on route selection.

6.9.4 Flood duration and inundation

Identification number

285

Summary of issues raised

The submitter is concerned with route selection due to perceived risks from inundation of housing and drainage design under the embankment.

Response

The *Hydrology Preferred Infrastructure Report* provides a summary of the updated hydraulic modelling undertaken for the proposal in compliance with ARR 2019. Flood impacts against the 1976 and 1% AEP events have been analysed and assessed against the QDLs specified in the Narrabri to North Star Infrastructure Approval. Alternative QDLs have also been derived that are subject to ongoing consultation and agreement with DPIE and affected landowners.

6.10 Landscape and visual

6.10.1 Commercial impacts

Identification number

244

Summary of issues raised

The submitter is concerned with the visual assessment rating (high) for the greenfield section of the proposal and the impacts to seedstock business.

Response

The landscape and visual impact assessment has been conducted in line with the methodology outlined in Section 5 of EIS Appendix P: Landscape and Visual Impact Assessment Technical Report.

With respect to the property in question, impacts have been identified in relation to key views and landscape character.

Representative viewpoints (VP5 and VP6) are the closest available publicly accessible viewpoints and are considered representative of impacts on the property. The LVIA identifies a high magnitude of change during both construction and operation (which is the highest magnitude possible). Due to the low and moderate sensitivities of these viewpoints, respectively, the resultant impacts, as outlined in the assessment, have been reviewed and are considered appropriate. Further justification for the sensitivity rating applied to each viewpoint is provided below.

Viewpoint 5 represents typical and accessible views of residents of local rural properties, and of visitors, tourists and workers travelling along the Bruxner Way. The sensitivity of this viewpoint is considered to be low due to the very low number of rural residential receptors and low number and sensitivity of the majority of viewers (travellers along Bruxner Way (AADT of around 279 eastbound and 297 westbound of which up to 50 per cent are heavy vehicles) who are travelling at speed and experience transient views.

As per the methodology, a low sensitivity to visual impacts is described as: a small numbers of visitors with a passing interest in their surroundings or transient views, e.g. those travelling along principal roads; viewers whose interest is not specifically focused on the landscape, e.g. workers, commuters, truck drivers; isolated or small clusters of rural residential properties.

In this instance, a low sensitivity is considered appropriate and consistent with the approach and methodology applied to other locations; therefore, the combination of a low sensitivity and a high magnitude of change results in a visual impact of a moderate level of significance, in accordance with Table 13 of the methodology.

Viewpoint 6 is representative of potential views of residents of local rural properties, residents of Toomelah and of visitors and workers travelling along Tucka Tucka Road. This view is considered representative of the worst-case impacts on the Toomelah community, noting that the main residential area of the community is located approximately 2.5 km to the east of this vantage point. The sensitivity of this viewpoint is considered to be moderate, due to the low number of viewers (e.g. travellers along Tucka Tucka Road) but taking into consideration that this viewpoint is being used to represent views from the Toomelah community (in a heritage area).

As per the methodology, a moderate sensitivity to visual impacts is described as: medium numbers of residents (e.g. rural communities and townships) and moderate numbers of visitors with an interest in their environment, e.g. visitors to State forests, including bush walkers, horse riders, trail bikers; larger numbers of travellers with an interest in their surroundings, e.g. local designated scenic routes.

In this instance, a moderate sensitivity is considered appropriate, considered to recognise the nearby Toomelah community, and is consistent with the approach and methodology applied to other locations; therefore, the combination of a moderate sensitivity and a high magnitude of change results in a visual impact of a 'high' level of significance, in accordance with Table 13 of the methodology.

In regard to impacts on landscape character, the greenfield section of the alignment traverses LCT A, LCT B and LCT C in the vicinity of the property in question.

LCT A: Vegetated Watercourses—Rivers

The sensitivity of LCT A is considered to be moderate in recognition of the relatively intact and high quality of the landscape and its value for the local Aboriginal community, while noting that there are no formal landscape designations (and is not publicly accessible in this location).

As per the methodology, a landscape with a moderate sensitivity is defined as: a moderately valued landscape, perhaps a regionally important landscape and/or protected by regional/State designation, or where its character, land use, pattern and scale may have some capacity to accommodate a degree of the type of change envisaged.

In this instance, a moderate sensitivity is considered appropriate and recognises the value placed on this landscape by the local community, and is consistent with the approach and methodology applied to other locations.

As the impact is highly localised and only impacts a small section of LCT A, and does not change the fundamental character of this LCT, the overall magnitude of change is predicted to be low; therefore, the combination of a moderate sensitivity and a low magnitude of change results in a visual impact of a 'low' level of significance, in accordance with Table 9 of the methodology.

LCT B: Vegetated Watercourses—Creeks and Channels

The sensitivity of LCT B is considered to be low, as there are no formal landscape designations associated with this LCT and the landscape does not appear to be used by the local community for recreation. Additionally, parts of the LCT area are already affected by the presence of rail infrastructure (albeit some of which is disused) so it is considered to have capacity to accommodate further change.

As per the methodology, a landscape with a low sensitivity is defined as: a landscape valued to a limited extent, perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.

In this instance, a low sensitivity is considered appropriate and is consistent with the approach and methodology applied to other locations.

As the impact is highly localised and only impacts a small section of LCT B (B2), the overall magnitude of change is predicted to be low; therefore, the combination of a low sensitivity and a low magnitude of change results in a visual impact of a 'negligible' level of significance, in accordance with Table 9 of the methodology.

LCT C: Irrigated Croplands

The sensitivity of LCT C is considered to be low (refer above), due to the extensively modified character of the landscape and local value of the landscape in terms of landscape amenity.

In this instance, a low sensitivity is considered appropriate and is consistent with the approach and methodology applied to other locations.

The impact on LCT C is highly localised and only impacts a small area of the alignment within private property, where the alignment deviates from the existing rail corridor. Due to the extensively modified nature of this landscape, it is not considered to change the fundamental character of this LCT and is noted that new earthwork infrastructure within this landscape will be consistent with the current landscape character; therefore, the overall magnitude of change is predicted to be low.

It is also noted that the design has been developed to use the existing rail corridor to protect and minimise land severance, and impacts to natural and rural landscapes, to the greatest extent possible and greenfield development has been limited as far as feasibly practical. Please refer to Section 12.2 and 12.3 of EIS Appendix P: Landscape and Visual Impact Assessment Technical Report for details on mitigation measures.

The combination of a low sensitivity and a low magnitude of change results in a visual impact of a 'negligible' level of significance, in accordance with Table 9 of the methodology.

Ongoing consultation with affected private landowners will be undertaken to determine appropriate opportunities for at-property mitigation measures and treatments.

6.11 Noise and vibration

6.11.1 EIS messaging and articulation

Identification number

251 and 270

Summary of issues raised

The submitters are concerned with noise impacts to receptors 254050, 254042, 25404 and 254047.

Response

The operational noise assessment identified up to five sensitive receptors (including 254042, 254047 and 254050) where noise levels trigger a review of mitigation. The location of the five sensitive receptors, the predicted noise levels at each receptor and the principles of ARTC's management of noise on the Inland Rail Program were reviewed to identify the appropriate noise mitigation options.

In addition to source noise controls implemented in the design and construction of the proposal, each receiver is a single dwelling in isolation from neighbouring or nearby properties and, in line with ARTC's strategy for noise management on the proposal, were deemed eligible for the consideration of architectural acoustic treatment of the dwellings and upgrades to any existing property boundary fencing.

At-property mitigations can include architectural treatments to control railway noise in the building and upgrades to property fencing. Whether at-property controls or other alternative mitigation options are required will ultimately be determined in the detailed design phase. This will include consultation with the property owners, further railway noise modelling, analysis of engineering and environmental constraints, and the verification of noise levels once railway operations commence on the proposal.

The assessment of vibration from railway operations determined that predicted levels would achieve the criteria for ground-borne noise and ground-borne vibration at all but 254050. The airborne railway noise levels are expected to dominate the noise environment at the receptors. On this basis, the assessment did not identify a need for specific vibration treatments beyond the resilient matting for retention of ballast on bridge and viaduct structures.

Where the proposal achieves the noise and vibration criteria, there can still be potential for noise and vibration from railway operations to be audible/perceptible within the environment. It is not unreasonable for outdoor noise from railway operations to be audible and perceptible at least 1 km from the rail alignment. The airborne noise, ground-borne noise and ground-borne vibration levels will continue to be assessed during the detailed design and construction of the proposal.

The proposal will complete an Operational Noise and Vibration Review (ONVR), which will include an assessment of architectural at-property treatments for sensitive receivers. This will consider a range of potential noise mitigations depending on the receiver, including if this assessment deems that at-property treatments will not provide the required operational noise and vibration mitigations; then, options such as at-source treatments or relocation of the house may be considered and discussed with the property owner.

6.12 Rehabilitation

6.12.1 Borrow pits

Identification number

262

Summary of issues raised

The submitter is concerned about the restoration of borrow pits and laydown areas, following construction of the proposal.

Response

'Borrow pit' in construction and engineering simply means an area where material has been dug for use at another location. The overarching rehabilitation strategy for the borrow pits is detailed in Chapter 9: Rehabilitation Strategy. The exact strategy for each borrow pit will be detailed in the Rehabilitation and Reinstatement Management Plan and will be subject to several factors, including soil assessments and landowner discussions. ARTC has adopted an outcome-based approach and will complete what is required to ensure final landforms are safe, stable, non-polluting and self-sustaining.

Areas outside of the proposed rail corridor are outside of the NS2B project description. Areas and activities outside the NS2B project description will not be restored. The proposal will only do works relevant to constructing the proposal and ensuring stable infrastructure.

6.12.2 Rehabilitation of Back Creek

Identification number

264

Summary of issues raised

The submitter is concerned with rehabilitation to the north of Back Creek, following construction of the proposal.

Response

Areas outside the proposed rail corridor are out of scope for the proposal. Scouring and gullying in the proposed rail corridor will be remediated during construction.

6.13 Consultation

6.13.1 Communication

Identification number

255

Summary of issues raised

The submitter is concerned with communication, points of contact and general performance, particularly during construction.

Response

Fencing

Where fencing is required, the relevant landowner will select the type of fencing in a like-for-like fashion, from ARTC's standard fence and gate types, to suit the farm operations. Internal fencing matters will be considered, as appropriate, during the land acquisition process.

Crossing loop

An indicative location of the crossing loop is included in the EIS. The location of this loop may change as the design is refined during the detailed design phase. The location may change between chainage 16.5 km and chainage 24.9 km; however, it will remain within the permanent footprint shown in Figure 6.5 of the EIS.

Consultation

Extensive landowner consultation has been undertaken throughout the reference design and EIS process. Section 4: Consultation undertaken during and after EIS exhibition, and EIS Appendix D: Consultation Summary details the stakeholder consultation that has occurred, to date, for the proposal. In these documents, there is clear acknowledgement that some members of the community were not supportive of the preferred alignment and favoured Option A. Consultation with landowners on the route alignment will continue throughout the detailed design, construction and operational phases. A communication management plan will be prepared for the construction phase, which will outline signage and contact details.

6.13.2 Access impacts

Identification number

260

Summary of issues raised

The submitter requests consultation regarding appropriate points of contact and access arrangements during construction of the proposal.

Response

The proposal will continue to consult with relevant councils and impacted landowners in the detailed design phase. A communications strategy will be developed for the construction phase of the proposal, which will outline how the proposal will continue to consult with the community. The communications strategy, which will be made publicly available on the proposal's website, will outline how enquiries and complaints are managed on the proposal and will include a 24-hour toll-free number for community enquiries and complaints.

7. Organisation and public agency submissions

7.1 Submissions received

Comprehensive submissions were received from 16 public agencies, including local councils, and two organisations. These submissions raised a variety of issues and made a number of recommendations.

7.2 Summary of issues raised

A high-level summary of the submissions received by organisations and public agencies is provided in Table 7.1. Due to the length and complexity of these submissions, the full summaries and responses to issues raised are provided in Appendix C:: Organisation Submissions and Appendix D:: Public Authority Submissions.

TABLE 7.1: SUMMARY OF ORGANISATION AND PUBLIC AGENCY SUBMISSIONS

Organisation/public agency	Key issue	Submission item
NSW Macintyre Floodplain Landowners	Biodiversity	▸ Biodiversity assessment ▸ Approval conditions
	Consultation	▸ Refusal of the proposal
	Hydrology	▸ 1976 flood event ▸ AEP ▸ Afflux impacts ▸ Durability and safety ▸ Flooding and hydrology assessment ▸ Impacts on soils and erosion ▸ Approval conditions
	Landscape and visual	▸ Visual impact assessment ▸ Approval conditions
	Noise and vibration	▸ Mitigation measures ▸ Impacts on sleep disturbance ▸ Sensitive receivers ▸ Approval conditions
	Project need and justification	▸ Cost benefit analysis ▸ Land acquisition ▸ Approval conditions
	Proposal design and alternatives	▸ Access impacts ▸ Agricultural land use impacts ▸ Land acquisition ▸ Approval conditions Undetermined Aboriginal land claims
	Rehabilitation	▸ Contamination and land rehabilitation ▸ Approval conditions
Toomelah Aboriginal Land Council	Heritage	▸ Consultation
	Noise and vibration	▸ Consultation
	Secondary approvals	▸ Consultation
Biodiversity and Conservation Division	Biodiversity	▸ BAM compliance ▸ Biodiversity assessment
	Hydrology	▸ Afflux impacts ▸ Comparison of floodplain scenarios ▸ Consultation ▸ Flooding and hydrology assessment ▸ 1976 flood event ▸ Flood impact objectives (also referred to as Flood Management Objectives)

Organisation/public agency	Key issue	Submission item
Crown Lands	Consultation	▸ Borrow pits ▸ Fauna passage ▸ Rehabilitation ▸ Travelling stock routes
	Management plans	▸ Mitigation measures
	Operation and maintenance	▸ Level crossings
	Secondary approvals	▸ Detailed design ▸ Unexpected finds ▸ Legislative requirements ▸ Travelling stock routes
Department of Natural Resources, Mines and Energy (Qld)	Consultation	▸ For consideration
Transport for New South Wales	Construction	▸ Construction impacts
	Consultation	▸ Consultation
	Proposal design and alternatives	▸ Bruxner Way Overpass
	Traffic and transport	▸ Consultation ▸ project description
Department of Primary Industries—Agriculture	Management plans	▸ Biosecurity
Department of Primary Industries—Fisheries	Biodiversity	▸ Aquatic ecology offsets ▸ Fish passage
NSW Environment Protection Authority	Management plans	▸ Mitigation measures
	Noise and vibration—construction	▸ Adding of 5 decibel (dB) penalty ▸ Background vibration measurement ▸ Borrow pits ▸ Construction accommodation ▸ Consultation ▸ Cumulative impacts ▸ Duration of impacts from construction scenarios ▸ Figure consistency ▸ Mitigation measures ▸ Noise catchment areas ▸ Noise management levels ▸ Construction working hours ▸ Sensitive receivers ▸ Sound power level ▸ Impact assessment area
	Noise and vibration—operation	▸ Additional information for propagation over 15 m ▸ Additional information on propagation effects LAmax and LAeq ▸ Adjacent main line ▸ Daily train numbers ▸ Detailed design modelling ▸ ID number ▸ Mitigation measures ▸ Noise levels ▸ References

Organisation/public agency	Key issue	Submission item
Goondiwindi Regional Council	Biodiversity	▸ Biosecurity ▸ Fish passage ▸ For consideration
	Heritage	▸ Legislative requirements ▸ Unexpected finds ▸ Impact assessment area
	Hydrology	▸ Detailed design modelling
	Noise and vibration—construction	▸ Noise management levels
	project description	▸ Construction water ▸ Flooding and hydrology assessment
	Secondary approvals	▸ Conditions compliance ▸ Legislative requirements
	Traffic and transport	▸ Cumulative impacts ▸ Traffic growth rate ▸ Guide to traffic impact assessment ▸ Mitigation measures ▸ Traffic impacts
	Waste	▸ Consultation ▸ Waste facilities ▸ Landfill levy and charges ▸ Legislative requirements ▸ Mitigation measures
Gwydir Shire Council	Economic impact	▸ Cost benefit analysis ▸ Consultation ▸ Accommodation camp infrastructure ▸ Local procurement
	Hydrology	▸ Afflux impacts ▸ Submersion times
	Proposal and design alternatives	▸ Alignment
	Traffic and transport	▸ Traffic count data
Heritage NSW—Historical Heritage	Heritage	▸ Consultation ▸ Impact assessment area ▸ Mitigation measures
Heritage NSW—Aboriginal Culture	Heritage	▸ Cumulative impacts ▸ Mitigation measures ▸ Lithic analysis of surface finds

Organisation/public agency	Key issue	Submission item
Moree Plains Shire Council	Air quality	▸ Adequacy of assessment
	Biodiversity	▸ Offsets
	Groundwater	▸ Construction water
	Hazard and risk	▸ COVID-19 pandemic
	Heritage	▸ Consultation ▸ Key site of Aboriginal cultural significance
	Hydrology	▸ AEP ▸ Climate change ▸ Afflux impacts ▸ Consultation ▸ Flood duration and inundation ▸ Flooding and hydrology assessment ▸ Detailed design modelling ▸ Editorial updates ▸ 1976 flood event ▸ Flood sensitive receptors ▸ Flow paths ▸ Mitigation measures ▸ Detailed design modelling ▸ project design
Department of Primary Industries—Water	Hydrology	▸ Flow paths
	Land resources	▸ Verification of soil properties
	Management plans	▸ Mitigation measures
	Proposal design and alternatives	▸ Culvert design
	Secondary approvals	▸ Legislative requirements

8. Proposal evaluation

8.1 Proposal uncertainties

The EIS is based on the reference design for the proposal. Given the current level of design development, there remains some uncertainty relating to technical requirements, how the proposal would be constructed and how it would operate as part of the Inland Rail Program. These details would be resolved as the design of the proposal, and the Inland Rail Program, progresses.

A summary of the main uncertainties around the design, construction and operation methodologies of the proposal, and how these will be resolved, is provided in Table 8.1.

TABLE 8.1: MAIN PROPOSAL UNCERTAINTIES

Phase	Uncertainty	How uncertainties will be resolved
Design	Property acquisition—exact areas that need to be acquired	Refining the amount and location of property acquisition will involve a detailed survey of the proposal site and surrounding properties, and confirmation of the final detailed design for the proposal.
	Final level crossing design	Detailed design involves further reviewing the proposed arrangements for each crossing in detail, and confirming the preferred approach, taking into account input from affected landowners and stakeholders and opportunities for alternative access.
	Utilities—impacts to utilities to be defined in detail	Further site utilities investigations will be undertaken in consultation with, and approved by, the relevant utility owners to validate current assessments and confirm relocation/protection requirements.
	Location of the crossing loop and maintenance siding	A key driver of Inland Rail is to achieve a Melbourne–Brisbane transit time of less than 24 hours, with 98 per cent reliability. In order to achieve this target, ARTC is seeking to minimise crossing delays across the entire 1,700 km Inland Rail Program by optimising the number and location of crossing loops. This is an iterative process as all 13 Inland Rail projects are at different stages of design development and construction. projects that are in the construction phase have confirmed crossing loop locations; however, opportunities exist on projects that are still in the design stage (such as NS2B) to optimise crossing loop locations. Based on the reference design, the optimised location of the NS2B crossing loop and maintenance siding is between chainage 22.7 km and chainage 24.9 km. This location is subject to change as the program wide optimisation process progresses.
Construction	Final construction methodology	The final construction activities, sites and sequencing will be determined during the detailed design and construction phases, taking into account site-specific environmental and engineering constraints, and the construction contractor's preferred methods. All future refinements will be constrained to the maximum parameters and impacts identified in this EIS. In this way, construction and operation of the proposal will be within the parameters and impacts approved through this EIS.
	Volume of material to be extracted from borrow pits	During the feasibility design phase, 11 borrow pit sites with the potential to provide general and/or structural fill were identified and assessed. The volume of borrow material that was assessed by this EIS was more than the actual deficit of general and structural fill. This was to account for shrinkage and the likelihood of encountering unsuitable borrow pit material during construction. During the detailed design and construction phases, the required volume of borrow material will be further refined. Future refinements will be constrained to the maximum parameters and impacts identified in this EIS. In this way, construction and operation of the proposal will be within the parameters and impacts approved through this EIS.

8.2 Justification of the proposal

8.2.1 Summary of proposal justification

Australia's freight task is set to experience significant growth over the coming decades. The existing freight infrastructure cannot support this projected growth, with increasing pressure on already congested roads and rail lines through Sydney and increasing use of heavy trucks, such as B-doubles and B-triples, along the Hume–Pacific and Newell highway corridors.

Inland Rail will address the growing freight task by helping to move freight off the congested road network and moving interstate freight off the congested Sydney Suburban rail network. It provides a reliable road-competitive solution to the freight task and enables the commercial and social benefits of rail to be leveraged to meet Australia's long-term freight challenge.

Inland Rail will:

- Connect key production areas in Queensland, NSW and Victoria with export ports in Brisbane and Melbourne
- Provide linkages between Melbourne, Brisbane, Sydney, Adelaide and Perth
- Reduce freight transit times
- Reduce congestion on rail and road networks
- Enable the movement of larger freight volumes via rail by making the movement of longer and double-stacked trains possible.

Inland Rail will provide the backbone infrastructure necessary to significantly upgrade the performance of the east coast rail freight network to better serve future freight demands, while also diverting demand from the constrained road freight and rail passenger network.

In summary, Inland Rail is needed to respond to the growth in demand for freight transport and address existing freight capacity and infrastructure issues. The analysis of demands undertaken by ARTC indicated that there would be sufficient demand for Inland Rail.

The proposal is a critical component of Inland Rail. It will provide the first ever rail connection between regional NSW and Queensland. Where possible, the proposal has been designed to maximise use of the existing non-operational Boggabilla rail corridor, while still contributing to the overall efficiency of Inland Rail.

8.2.2 Summary of proposal benefits

The proposal is a key component of Inland Rail, which would:

- **Boost the Australian economy**—Inland Rail is expected to increase Australia's gross domestic product by $16 billion during its construction and first 50 years of operation
- **Create jobs**—it is estimated that construction of Inland Rail would require a workforce of up to 16,000 people at the peak of construction and an average of 700 additional jobs per year over the construction period
- **Improve connections within the national freight network**—Inland Rail will enhance the National Land Transport Network by creating a rail linkage between Melbourne and Brisbane, providing a connection between Queensland and the southern and western states, and a connection to the east-west trans-continental line (at Parkes)
- **Provide better access to and from regional markets**—Inland Rail will make it easier for freight to move from farms, mines and ports to national and overseas markets
- **Reduce costs**—it is estimated that rail costs for intercapital freight travelling between Melbourne and Brisbane will be reduced by $10 per tonne. Highway maintenance costs will also be reduced.
- **Offer better transit time and reliability**—Inland Rail will allow a transit time of less than 24 hours between Melbourne and Brisbane and a reliability of 98 per cent—matching current road levels
- **Increase the capacity of the transport network—**Inland Rail will increase the capacity for freight and passenger services by reducing congestion along the busy coastal transport route, and allow for growth in passenger services, particularly in the Sydney region
- **Reduce distances travelled**—with Inland Rail, the rail distance between Melbourne and Brisbane will reduce by 200 km, and the distance between Brisbane and Perth, and Brisbane and Adelaide will reduce by 500 km

- **Improve road safety**—it is estimated that, each year, there will be up to 15 fewer serious crashes, avoiding fatalities and serious injuries
- **Improve sustainability**—carbon emissions will reduce by 750,000 tonnes annually
- **Improve community amenity**—truck volumes and road congestion on some of Australia's busiest highways will reduce, which will also mean a reduction in trucks travelling through more than 20 regional towns. This will lead to a corresponding reduction in amenity impacts associated with the movement of freight by road, including noise and air emissions.
- **Provide an alternative north–south freight link**—Inland Rail will provide a second link between Queensland and the southern states, making Australia's national freight rail networks less vulnerable to disruptions, e.g. from extreme weather events.

8.2.3 Consequences of not proceeding with the proposal

The proposal is a section of the Inland Rail Program. As there is no operational rail link between North Star and the NSW/Queensland border, Inland Rail cannot proceed if the proposal does not proceed. This would mean that the benefits of Inland Rail would not be realised.

8.3 Environmental considerations

Environmental investigations were undertaken during preparation of the EIS to assess the potential impacts of the proposal. These included specialist assessments of terrestrial and aquatic biodiversity, cultural heritage, water quality, hydrology and flooding, groundwater, soils, noise and vibration, air quality, sustainability and climate change, traffic and transport, landscape and visual amenity, land use and property, social, hazard and risk, and waste management.

The EIS has documented the potential environmental impacts of the proposal, considering both potential positive and negative impacts, and identifies mitigation measures to protect the environment, where required.

8.3.1 Biophysical

The main potential impacts of the proposal on the biophysical environment include:

- Impacts to terrestrial and aquatic ecology during the construction and operation phases, including habitat loss, injury or mortality, displacement and habitat fragmentation
- The proposal will potentially impact surface water flows in the Border Rivers Valley Floodplain
- Construction activities have the potential to expose existing contamination and/or cause contamination through leaks or spills
- Impacts on groundwater resources due to bridge piling works
- Surface water impacts, including increased water turbidity and sedimentation, and changes to water chemistry as a result of vegetation clearing, earthworks, stockpiling, accidental spills and leaks, and soil disturbance.

8.3.2 Social, cultural and economic

The main potential impacts of the proposal on society, culture and the economy during construction and operation are:

- Changes to existing access arrangements as a result of temporary construction detours, level crossing works and road realignments
- Full and/or partial acquisition of privately owned land
- Construction activities have the potential to disturb items with cultural heritage significance
- Impacts on rural landscape values due to vegetation clearing, stockpiling, new infrastructure, construction traffic movements, construction lighting and site offices
- Amenity-related impacts during construction and operation, e.g.:
  - Noise, vibration and air quality impacts due to construction traffic, general construction activities and train movements

- Increased traffic during the construction phases impacting on the level of service of the existing road network and increasing vehicle exposure at rail crossings

- Potential impacts on employment, local business and community wellbeing, including:
  - The proposal is expected to provide employment opportunities for up to 350 construction personnel and up to 20 operations personnel
  - Local businesses may experience increased demand; however, if multiple Inland Rail projects are constructed in the same time frame, there may be a draw on regional trades and construction labour
  - The local community will experience increased workforce traffic, heavy haulage and construction vehicles during the construction phase
  - The social and cultural uses of creeks and the Macintyre River may be disrupted.

8.3.3 Addressing potential impacts

The proposal would incorporate construction management measures and design features to ensure that potential impacts are managed and mitigated as far as practicable. The majority of potential construction-related impacts would be effectively managed by the implementation of the environmental management approaches consolidated in Appendix G, some of which are revised or have been added to address concerns raised in the Response to Submissions Report.

8.4 Ecologically sustainable development

The EP&A Act adopts the definition of ecologically sustainable development contained in the *Protection of the Environment Administration Act 1991* (NSW). An assessment of the proposal against the principles of ecologically sustainable development as per clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 is provided below.

8.4.1 Precautionary principle

Under the precautionary principle, if there is a threat of serious and irreversible environmental damage from the proposal, and scientific uncertainty as to the nature and scope of that threat, then (according to case law) the Minister, as decision maker for the NS2B planning application, must assume that the threat is no longer uncertain, but is a reality, and the burden of showing that this threat does not exist, or is negligible, then reverts to ARTC as proponent. ARTC believes the principles of the precautionary principle and ecologically sustainable development have been applied and presented throughout the EIS. The EIS contains extensive assessment of all key environmental risks and impacts associated with the proposal (including engagement with many members of the local community and other stakeholders) and incorporates consideration of the principles of ESD (including the precautionary principle). As part of this assessment, the EIS contains extensive measures that are designed to avoid, mitigate, offset or manage the environmental impact or harm that may otherwise be caused by the proposal. ARTC is not proposing to postpone any measures in light of any uncertainty about the assessment or the risks or impacts being assessed and instead has proposed clear mitigation measures where these impacts cannot be avoided.

Accordingly, ARTC believes that the EIS will allow the Minister to apply to precautionary principle in determining the proposal. If the assessment in the NS2B EIS is deemed to be deficient in its rigour, under the NSW Planning Approval process, the Minister cannot grant approval if they cannot be reasonably satisfied that the construction of the proposal does not pose a serious and/or irreversible threat to the environment, as well as human life and property.

8.4.2 Principle of inter-generational equity

Construction of a long linear infrastructure project, such as the proposal, has the potential for some degree of environmental and social disturbance. These disturbances include the clearing of vegetation, some disturbance to private properties during construction, potential disturbance of some cultural heritage sites, and localised noise, vibration and air quality impacts; however, the potential for environmental and social disturbance as a result of construction has to be balanced against the long-term benefits of the Inland Rail Program.

Should Inland Rail not proceed, the principle of intergenerational equity may be compromised as future generations would experience the increased environmental and safety impacts associated with the transport of large volumes of freight via the Newell Highway.

The strategic planning studies summarised in Chapter 2: Strategic Context have identified a strong need and justification for Inland Rail. The proposal would, as part of the Inland Rail Program, benefit future generations by providing a safer, more efficient means of freight transport.

8.4.3 Conservation of biological diversity and ecological integrity

Ecological studies have been undertaken to identify potential adverse impacts on biodiversity. Where potential impacts cannot be avoided, mitigation measures would be implemented to reduce the impact as far as possible.

The proposal would result in the clearing of some vegetation associated with threatened plant communities. Mitigation measures are proposed to minimise and manage the significance of the impact on native vegetation and flora and fauna. Biodiversity offsets would be implemented to address the impacts that cannot be avoided.

8.4.4 Improved valuation and pricing of environmental resources

The assessment has identified the environmental and other consequences of the proposal and identified mitigation measures, where appropriate, to manage adverse impacts. Where possible, potential impacts have been expressed in economic terms to allow for a proper economic assessment of the costs and benefits of the proposal.

If approved, construction and operation of the proposal would be in accordance with relevant legislation, the conditions of approval, and the environmental management plans. Adhering to these requirements would increase capital and operating costs of the proposal. As far as practicable, these costs have been internalised by ARTC (i.e. not left to a third party, either in the present or future, to pay for potential impacts as a result of the proposal).

The reference design for the proposal has been developed with the objective of minimising potential impacts on the surrounding environment. This indicates that the reference design has been developed with an environmental objective in mind.

8.5 Revised mitigation measures

The approach to environmental management was initially provided in EIS Chapter 27: Environmental Management Plan. The development of submissions responses has necessitated modifications to existing mitigation measures or additional mitigation measures. These revisions are identified in the following sections:

- Additional investigations and assessment work carried out in this report to address submissions (Section 5)
- Submissions received from public submitters and organisations, and public agency submitters (Sections 6 and 7 and Appendix B, C, and D).

The revised mitigation measures are presented as an updated version of the EMP in Appendix G.

8.6 Approval requirements

A summary of the potential post-EIS approvals were provided in EIS Chapter 5: Planning and Assessment Process. Approval and permit requirements may vary depending on the final design and construction methodology, and future changes in statutory requirements, prior to proposal implementation.

Following approval, the proposal is likely to require additional post-EIS approvals under State environmental and planning legislation. The triggers impacts and permitting requirements for these approvals will not be confirmed until later design stages and the majority of the approvals will be required prior to construction or any ground-disturbing activities.

8.7 Concluding statement

The proposal involves constructing approximately 30 km of single-track, standard-gauge rail line between North Star and the NSW/Queensland border, and operating this section of rail line as part of Inland Rail Program. The proposal is needed to support the development of the Inland Rail Program between Melbourne and Brisbane.

Potential impacts resulting from the proposal are considered manageable through the implementation of the proposed mitigation measures.

The detailed design for the proposal will be developed with the objective of minimising potential impacts on the local and regional environment, and the local community. The design and construction methodology would continue to be developed with this overriding objective in mind, taking into account the input of stakeholders.

To manage the potential impacts identified by the EIS, and in some cases remove them completely, the assessment chapters outline a range of mitigation measures that would be implemented during detailed design, construction and operation of the proposal. Chapter 27: Environmental Management Plan summarises the environmental mitigation measures that would be implemented. The environmental performance of the proposal would be managed by the implementation of the CEMP and associated sub-plans. The CEMP will also ensure compliance with relevant legislation and any conditions of approval.

With the implementation of the proposed mitigation measures, the potential environmental impacts of the proposal would be adequately managed.

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