PART D
EIS synthesis and conclusion

INLAND RAIL

CHAPTER D6
Conclusion and justification

Narromine to Narrabri
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_1929

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D6. Conclusion and justification

This chapter provides the conclusion to the EIS. It summarises the Narromine to Narrabri project (the proposal) for which approval is sought and provides the justification for the proposal, having regard to biophysical, economic and social considerations.

D6.1 Summary description of the proposal for which approval is sought

This EIS considers the potential impacts of the proposal to construct and operate the Narromine to Narrabri section of Inland Rail. It has been prepared to support ARTC's application for approval of the proposal in accordance with the requirements of Division 5.2 of the EP&A Act, and as a controlled action under the EPBC Act. The EIS addresses the environmental assessment requirements of the Secretary of the Department of Planning, Industry and Environment, dated 9 September 2020.

D6.1.1 The proposal

The proposal consists of about 306 kilometres (km) of new single-track standard-gauge railway with crossing loops. The proposal also includes changes to some roads to facilitate construction and operation of the new section of railway, and ancillary infrastructure to support the proposal.

The proposal would be constructed to accommodate double-stacked freight trains up to 1,800 metres (m) long and 6.5 m high. It would include infrastructure to accommodate possible future augmentation and upgrades of the track, including a possible future requirement for 3,600-m long trains.

The land requirements for the proposal would include a new rail corridor with a minimum width of 40 m, with some variation to accommodate particular infrastructure and to cater for local topography. The corridor would be of sufficient width to accommodate the infrastructure currently proposed for construction, as well as possible future expansion of crossing loops for 3,600-m long trains. Clearing of the proposal site would occur to allow for construction and to maintain the safe operation of the railway.

D6.1.2 Location

The proposal would be located between the towns of Narromine and Narrabri in NSW. The proposal would link the Parkes to Narromine section of Inland Rail, located in central west NSW, with the Narrabri to North Star section of Inland Rail, located in north-west NSW.

The location of the proposal is shown in Figure A1.1. Further information on the location, study area and proposal site is provided in chapter 2.

D6.1.3 Key design features

The key features of the proposal include:

- Rail infrastructure
  - A new 306-km long rail corridor between Narromine and Narrabri
  - A single-track standard-gauge railway and track formation within the new rail corridor
  - Seven crossing loops located at Burroway, Balladoran, Curban, Black Hollow/Quanda, Baradine, The Pilliga and Bohena Creek
  - Bridges over rivers and other watercourses (including the Macquarie River, Castlereagh River and the Narrabri Creek/Namoi River system), floodplains and roads
  - Connections with existing rail lines
  - Level crossings
  - New rail connections and possible future connections with existing ARTC and Country Regional Network rail lines, including a new 1.2-km long rail junction between the Parkes to Narromine section of Inland Rail and the existing Narromine to Cobar Line (the Narromine West connection).
- Road infrastructure
  - Road realignments at various locations, including realignment of the Pilliga Forest Way for a distance of 6.7 km
  - Limited road closures.

The key features of the proposal are shown in Figure A1.2.

Ancillary infrastructure to support the proposal would include signalling and communications,; drainage, signage and fencing; and services and utilities.

Further information on the proposal's key features is provided in chapter 7.

D6.1.4 Construction features

The following key infrastructure is proposed to support construction of the proposal:

- Borrow pits:
  - Borrow pit A—Tantitha Road, Narromine
  - Borrow pit B—Tomingley Road, Narromine
  - Borrow pit C—Euromedah Road, Narromine
  - Borrow pit D—Perimeter Road, Narrabri
- Three main compounds, which would include a range of facilities to support construction ('multi-function compounds'), located at:
  - Narromine South
  - Curban
  - Narrabri West.
- Temporary workforce accommodation for the construction workforce:
  - Within the Narromine South multi-function compound
  - Narromine North
  - Gilgandra
  - Baradine
  - Within the Narrabri West multi-function compound.

The key construction infrastructure is shown in Figure A1.3.

Other construction infrastructure would include a number of smaller compounds of various sizes located along the proposal site; concrete batching plants; laydown areas; welding yards; a concrete pre-cast facility; and groundwater bores for construction water supply.

D6.1.5 Operation

The proposal would form part of the rail network managed and maintained by ARTC. Train services would be provided by a variety of operators.

It is estimated that Inland Rail would be trafficked by an average of 10 trains per day (both directions) in 2025, increasing to about 14 trains per day (both directions) in 2040. This rail traffic would be in addition to the existing rail traffic using other lines that the proposal interacts with.

The trains would be a mix of grain, bulk freight, and other general transport trains. Total annual freight tonnages would be about 10 million tonnes in 2025, increasing to about 17.5 million tonnes in 2040.

Train speeds would vary according to axle loads and range from 80 to 115 km per hour.

D6.1.6 Timing

Subject to approval, the first phase of construction is anticipated to start in late 2021 and is expected to take about four years to complete. The proposal is expected to be operational, as part of Inland Rail as a whole, once all 13 sections are complete, which is estimated to be in 2025.

D6.2 Justification of the proposal

The SEARs and clause 7(1)(f) of Schedule 2 of the EP&A Regulation require an EIS to provide '*the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4)*'.

D6.2.1 Biophysical considerations

Detailed environmental investigations have been carried out as described in chapter A9 and the chapters in Part B to:

- Understand the existing environment of the proposal site and surrounds
- Inform route selection and option development
- Inform development of the reference design and preliminary construction planning
- Undertake the environmental impact assessment and prepare the EIS.

To provide a high level of certainty in understanding the environment and identifying potential impacts, all investigations were undertaken by technical specialists experienced in impact assessment using best-practice methodologies in accordance with relevant statutory requirements and guidelines. A summary of the investigations undertaken, methodologies applied and results achieved are described in Part B. Further detailed information is provided in the technical reports.

The first step of the impact assessment process involved identifying key potential environmental issues, impacts and risks that would be subject to detailed assessment as part of the EIS. Investigations were informed by the impact scoping exercise and environmental risk assessment, as described in chapter A9, and were undertaken in accordance with the SEARs. The results of environmental investigations and consideration of the environmental risk assessment were used to ensure that potential impacts are avoided as much as possible. The key potential biophysical impacts of the proposal, based on the design and construction methodology described in chapters A7 and A8, are summarised in section D5.1.

Ways to further reduce and minimise unavoidable potential impacts on the environment have also been considered. Mitigation and management measures to minimise any outstanding impacts are identified in this document. These measures, and the proposed approach to environmental management during construction and operation, are provided in chapter D5.

It is noted that some assessments were not able to undertake fully comprehensive field surveys/site assessments as a result of land access limitations in some areas. For these assessments (including biodiversity and Aboriginal heritage), additional targeted surveys are proposed during detailed design to confirm the potential impacts and any additional mitigation measures required.

D6.2.2 Economic and social considerations

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, increasing use of heavy trucks, such as B-doubles and, potentially, 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, and provide linkages between Melbourne, Brisbane, Sydney, Adelaide and Perth. It will reduce freight transit times, reduce congestion on rail and road networks and 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.

Inland Rail is fundamental to the continued growth of rail freight. It is estimated that Inland Rail will shift the share of freight moved by rail between Melbourne and Brisbane from 26 to 62 per cent, so that by 2050 about 7.9 million tonnes of inter-capital freight will be moved by rail between the two cities (ARTC, 2015). Inter-capital freight includes products such as hardware, steel, groceries and other consumer goods. It travels between major ports and capital cities before being distributed to retailers.

Inland Rail will also travel through some of Australia's richest farming regions and mining regions. It is expected to draw significant volumes of grain, cotton, chilled beef, coal and other commodities onto rail. During construction, Inland Rail is expected to be a major economic enabler in the regions, as ARTC will aim to utilise local procurement and employment as far as possible.

In summary, as described in chapter A5, 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 and is required to enable Inland Rail to operate. The benefits of Inland Rail are summarised below.

The potential for social and economic impacts have been assessed by the EIS. The key potential socio-economic and community impacts of the proposal are summarised in section D5.1. The approach to managing the identified impacts is described in chapter D5.

Benefits of Inland Rail

Inland Rail will deliver on key national priorities for infrastructure and economic policy. Inland Rail will provide a comprehensive and accessible rail transport system that links communities and strengthens industry. Better infrastructure and an effective national freight operation are key to delivering efficient supply chains, improving Australia's global competitiveness and lifting our nation's wealth and prosperity.

The key overall benefits of Inland Rail are:

- **Improved network efficiency and reliability**: transit time between Melbourne and Brisbane is less than 24 hours, with 98 per cent reliability, which matches current road transport levels
- **Safety improvements**: up to 15 serious crashes, involving fatalities and serious injuries, will be avoided every year. Road congestion on some of Australia's busiest highways, including the Hume, Newell and Warrego, will also be reduced.
- **Boost to the Australian economy**: Inland Rail is expected to increase Australia's GDP by $16 billion during its construction and first 50 years of operation
- **Job creation**: Inland Rail is expected to create up to 16,000 new jobs at the peak of construction, with an additional 700 long-term jobs once it is operational
- **Improved sustainability**: moving freight by rail is four times more fuel efficient than moving freight by road. Carbon emissions will be reduced by 750,000 tonnes per year and truck volumes will be reduced in more than 20 of our regional towns (based on a 2050 estimate).

Some of the other key benefits of Inland Rail to the freight industry are:

- **Improved access to and from regional markets**: 2 million tonnes of agricultural freight shifted from road, with a total of 8.9 million tonnes of agricultural freight more efficiently diverted to Inland Rail
- **Reduced costs for the market**: reduced rail costs for inter-capital freight travelling between Melbourne and Brisbane by $10 per tonne
- **Increased capacity of the transport network**: additional rail paths for freight (160 round trip paths per week), a 105 per cent increase on current freight paths on the coastal route alone, along with releasing capacity for passenger services in Sydney and Brisbane and removing 200,000 truck movements (5.4 billion net tonne kilometres of freight) from roads each year from 2049–50
- **Reduced distances travelled**: a 200-km reduction in rail distance between Melbourne and Brisbane, and a 500-km reduction between both Brisbane and Perth and Brisbane and Adelaide
- **Reduced travel time**: reducing the travel time for freight (mainly grain) trains from Goondiwindi to the Port of Brisbane by about 4 hours and 30 minutes compared with the current rail trip
- **Improved sustainability**: providing an alternative north–south freight path to counter weather, climactic or other disaster disruption to the transport network.

D6.2.3 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). The following sections provide reasons justifying the proposal having regard to the principles of ecologically sustainable development defined by clause 7(4) of Schedule 2 of the EP&A Regulation.

Precautionary principle

The precautionary principle is defined as '*...if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation*'.

A range of environmental investigations have been undertaken during the development of the proposal and the environmental assessment process, to ensure that potential impacts are understood with a high degree of certainty. The assessment of the potential impacts of the proposal is considered to be consistent with the precautionary principle. The assessments undertaken are consistent with accepted scientific and assessment methodologies and have taken into account relevant statutory and agency requirements. The assessments have applied a conservative approach with regard to construction and operational arrangements, and the modelling used.

The proposal alignment and design has evolved to avoid impacts, where possible, and to reflect the findings of the studies undertaken. The route for the proposal has been selected to minimise the potential environmental impacts, particularly the extent of land use impacts.

The proposal has been designed to avoid impacts, where possible, and to reflect the findings of the assessments undertaken. Mitigation and management measures have been proposed to minimise potential impacts, and these management measures would be implemented during construction and operation.

Lack of full scientific certainty has not been used as a reason to postpone or avoid identification and adoption of design or management measures to avoid or minimise environmental degradation. Where potential suitable habitat for species credit species is present, the species are assumed present and appropriate offsets have been calculated. No threat of serious or irreversible damage to the environment arising from the proposal has been identified.

Principle of inter-generational equity

The principle of inter-generational equity is defined as '*...the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations*.'

Construction of a long linear infrastructure proposal, 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 heritage sites; and localised 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 overall.

Should the proposal 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 5 have identified a strong need and justification for Inland Rail. The proposal would, as part of Inland Rail, benefit future generations by providing a safer, more efficient means of freight transport.

Conservation of biological diversity and ecological integrity

The principle of conservation of biological diversity and ecological integrity is defined as '*...conservation of biological diversity and ecological integrity should be a fundamental consideration*.'

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 much as possible.

The proposal would result in the clearing of vegetation to establish the new rail corridor. The route has been refined to minimise this impact as much as possible, while endeavouring to balance the potential for land use impacts. A biodiversity assessment was undertaken in accordance with the *Biodiversity Assessment Method* (OEH, 2017) to identify potential adverse impacts on biodiversity. 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.

Improved valuation and pricing of environmental resources

The principle of improved valuation and pricing of environmental resources is defined as '*...that environmental factors should be included in the valuation of assets and services*.'

The assessment has identified the environmental and other consequences of the proposal, and identified mitigation measures, where appropriate, to manage potential impacts. If approved, the construction and operation of the proposal would be in accordance with relevant legislation, the conditions of approval, and the construction and operation environmental management plans. These requirements would result in an economic cost to the proponent. The implementation of mitigation measures would increase both the capital and operating costs of the proposal. This signifies that environmental resources have been given appropriate valuation.

The value of environmental resources is also inherently considered in the development of a design that avoids and minimises impacts.

The concept design for the proposal has been developed with an objective of minimising potential impacts on the surrounding environment. The extra cost of alignments, designs, proposal elements, management measures and impact offset or mitigation packages, are selected to avoid and minimise environmental and/or social impacts, are included in the total estimated proposal cost. Examples include the provision of numerous bridges to minimise potential impacts on the flood plains and the proposed biodiversity offset package.

D6.3 Concluding statement

The proposal is needed to support the development of Inland Rail. The proposal, as part of Inland Rail, is needed to respond to the growth in demand for freight transport and address existing freight capacity and infrastructure issues. The proposal is a critical component of Inland Rail and is required to enable Inland Rail to operate.

A proposal of this scale would inevitably have some impacts on the local environment and community, particularly during construction and as a result of establishing a significant new section of freight rail corridor. As described in chapters A7, A8 and D5, the proposal would incorporate environmental management and design features to ensure that potential impacts are managed and mitigated as far as practicable. The majority of the potential construction-related impacts would be effectively mitigated by the implementation of best practice construction management, including the implementation of the environmental management approaches described in section D5.2 and the mitigation measures compiled in section D5.3.

The biodiversity offset strategy would be finalised and implemented to address the residual impacts of the proposal on biodiversity values, according to the requirements for Division 5.2 projects under the EP&A Act, and to offset impacts on EPBC Act matters.

The detailed design for the proposal would 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 construction and operation of the proposal. Chapter D5 summarises the mitigation measures that would be implemented. The environmental performance of the proposal would be managed by the implementation of the CEMP and OEMP. These plans would also ensure compliance with relevant legislation and any conditions of approval.

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