

P2_022 Central West Consolidation Centre

Central NSW Joint Organisation and Regional Development
Australia Central West

Gate 2 Pre-Feasibility Study

10 June 2022



Version history

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1.0	25 Feb 2022	EY	Draft for Proponents' Review
2.0	5 Apr 2022	EY	Early draft shared with the Department
3.0	10 Jun 2022	EY	Final Gate Lodgement

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Executive Summary

Table 1 Proposal Summary

Proposal Name	P2_022 Central West Consolidation Centre
Date and Gate Status	Gate 2 Pre-Feasibility Study (Early Draft)
Proponents	Central West Joint Organisation and Regional Development Australia Central West
Total Project Costs	<p>The total Proposal costs are detailed below.</p> <p>Option 1 – Preferred Option – A consolidation centre located within the Parkes Special Activation Precinct (SAP) (\$ million, P50, nominal, 30 year)</p> <ul style="list-style-type: none"> Capex: \$56.6 million. Opex: \$42.3 million which includes maintenance costs (\$37.8 million) and operating costs (\$4.5 million).

Proposal description

The Proposal involves the development of potential infrastructure solutions to improve the access to markets for small to medium enterprises (SMEs) in Central West New South Wales (NSW) by leveraging Inland Rail. Figure 1 below shows the Inland Rail alignment and the proposed region under investigation.

Three consolidation centre options were assessed for development within the Central West NSW region, with those options defined in terms of location, scale of centre and nature of goods handled.

Figure 1 Geographical context of the Proposal



Source: EY

This Proposal has arisen due to consultation with SMEs in the Central West region, who have raised queries regarding how to access the potential benefits of Inland Rail. Connectivity to market is a key challenge for businesses in the region with local and regional businesses relying on the road freight network for the export of commodities produced in the Central West destined for national and international markets. This Proposal investigates barriers and enablers for SMEs to

access Inland Rail as a viable option for the distribution of the products to key domestic and international markets.

Summary

The Central West of NSW is a diverse area that covers around 47,000km² with an estimated population of 157,686 persons.¹ Agriculture represents 7.7% of Central West NSW's gross regional product (GRP) and is a key industry for the region.²

The Proposal investigates a number of potential opportunities in the region including:

- The development of a consolidation centre in the Central West to improve and facilitate the ability of regional business and SMEs to access Inland Rail which will in turn create efficiencies in their supply chain by reducing freight costs.
- Increasing the proportion of freight utilising rail in the region to reduce constraints on the road network in the region and improve road safety.
- Increasing regional business movement to broader domestic and international markets to support regional economic growth opportunities which will enhance community resilience through economic diversification and create jobs (and population) growth.

Three potential locations were identified within the Central West region as options for the development of the consolidation centre. Whilst specific site locations have not been identified within Gate 2, the focus of the options assessment within the Gate 2 Pre-Feasibility Report is identifying the preferred location and infrastructure technical solution to proceed for further analysis. The following options were identified and assessed against the Base Case:

- Base Case: 'do nothing' scenario where the Proposal is compared only against currently committed / funded freight handling facility projects in the region and existing rail and road transport options.
- Option 1: A consolidation centre in Parkes.
- Option 2: A consolidation centre in Forbes.
- Option 3: A consolidation centre in Orange.

Stakeholders varied in their preferred location for a consolidation centre. Two stakeholders would prefer the centre be built in Forbes, one preferred Parkes and another preferred Orange. Three stakeholders did not indicate a preferred location.

The demand analysis undertaken has identified the medium future (2041) contestable (SME) freight demand in 2041 is 354,800 tonnes. Of this 354,800 the facility is anticipated to capture between 47,000 tonnes and 132,000 tonnes of SME freight per annum, depending on the exclusion or inclusion of fertiliser facilities.

The Multi-Criteria Analysis (MCA) and sensitivity analysis identified Option 1 (Parkes) as the Preferred Option, primarily based on supply chain efficiencies and complexity, risk, cost and deliverability. Supply chain cost analysis identified the most beneficial location for a consolidation centre in terms of economic efficiencies is in Parkes, specifically within the Parkes SAP.

A single technical solution for the consolidation centre located within the Parkes SAP was developed by SNC. The technical solution is a staged solution, consistent with the findings of the demand analysis:

- Stage 1 – Minimum Viable Product - development and construction of infrastructure sufficient for 2023 volumes excluding fertiliser.
- Stage 2 – Full Scope – expansion of Stage 1 to have sufficient infrastructure for 2041 volumes including fertiliser. Construction to commence 5 years after Stage 1.

The Preferred Option (including both Stages 1 and 2) is estimated to cost \$98.9 million, including initial capital cost estimates of \$56.6 million (on a P50 basis, in nominal terms (2022)), operating costs of \$4.5 million (P50, nominal (2022), over a 30-year period of analysis) and replacement and maintenance costs of \$37.8 million (P50, nominal, over a 30-year period of analysis).

¹ Central NSW Joint Organisation, Strategic Plan 2019





² RDA Central West, Value adding to Agriculture in Central West NSW 2016

The Proposal is estimated to result in \$35.9 million of benefits (discounted at 7% p.a. to FY22) over a 30-year appraisal period. This includes \$22.0 million in direct benefits and \$13.9 million in indirect benefits.

Consistent with the early stage of the Proposal, no funding or financing commitments have been finalised at this stage. There is an opportunity for investments to be recouped through charges or for a prospective operator to contribute to the build. At this stage of the Proposal, potential operators have not been consulted. However, this will be considered as part of future stakeholder consultation in Gate 3.

As part of the Gate 2 Study, no specific environmental or regulatory roadblocks have been identified with the development of the Proposal within the Parkes SAP, potentially streamlining the process.

Figure 2 Key findings of the Gate 2 Pre-Feasibility Study

 <p>Proposal Details</p>	<p>Key findings</p> <ul style="list-style-type: none"> • The Proposal considers infrastructure solutions to improve access to markets for SMEs by leveraging Inland Rail to increase supply chain access. • The goal is to improve and facilitate the ability of regional businesses and SMEs to access the rail line and continue to grow sustainably. The Proposal would provide long-term regional benefits, increasing the connectivity of SMEs to freight supply chains and domestic and potentially international markets. • The Proposal considers three options for increasing the access to markets of SMEs in Central West NSW. The options are three consolidation centres defined in terms of location, the scale of centre and nature of goods handled.
 <p>Problem or Opportunity Definition</p>	<p>Key findings</p> <ul style="list-style-type: none"> • An Investment Logic Mapping (ILM) Workshop was held in October 2021 to identify the opportunities in the region that could be addressed by the Proposal. • The workshop identified three opportunity statements: <ul style="list-style-type: none"> ○ The development of a consolidation centre in the Central West will improve and facilitate the ability of regional businesses and SMEs to access Inland Rail which will in turn create efficiencies in their supply chain by reducing freight costs. ○ Increasing the proportion of freight utilising rail in the region will reduce constraints on the road network in the region and improve road safety. ○ Increasing regional business movement to broader domestic and international markets may support regional economic growth opportunities which will enhance community resilience through economic diversification and create jobs (and population) growth.
 <p>Strategic Fit</p>	<p>Key findings</p> <ul style="list-style-type: none"> • The strategic fit of the Proposal has been assessed against local, state and national economic development, transport and freight priorities and programs, as well the Productivity Enhancement Program (PEP) principles. • The Proposal alignment with the PEP principles is underpinned by its focus on improving supply chain efficiencies and providing better access to Inland Rail in the Central West NSW region. • The problem and opportunity constraints addressed by this Proposal are strongly aligned with several PEP objectives, including supporting national freight and supply chain priorities, supporting regional economic growth, delivering cost-effective improvements, and increasing Inland Rail throughput.
 <p>Stakeholders</p>	<p>Key findings</p> <ul style="list-style-type: none"> • Due to the nature of the Proposal being broad and the Proponents representing the collective of Central West Councils, stakeholder engagement was undertaken in a staged approach. • Initial consultation was undertaken with the relevant Councils in the Central West region as identified by the Proponent. Consultations with five Central West councils were conducted for this Gate 2 submission. • Councils were supportive of investment in the region and facilitating the access for SMEs to utilise rail where possible, but it should be also supported by the demand analysis. • The second stage of consultation included targeted discussions with SMEs in the Central West region for this Gate 2 submission. • Support for the Proposal was mostly due to the expectation that the consolidation centre would provide the region with more options to access Inland Rail. Letters of support were provided by three stakeholders.

- Stakeholders varied in their preferred location for a consolidation centre. Two stakeholders would prefer the centre be built in Forbes, one preferred Parkes and another preferred Orange. Three stakeholders did not indicate a preferred location.
- Key barriers preventing SMEs from accessing rail were identified including: cost effectiveness; service frequency; storage requirements; consignment volume; and cost of change.
- Future consultation is recommended to focus on further engagement with SMEs within the region, and to be expanded to include existing and potential rail freight operators within the Parkes SAP.



Demand

Key findings

- Current freight demand (2021) is estimated to be between 2,160,000 and 4,012,000 tonnes per annum with an average of 3,089,000 tonnes per annum. The major commodities in the region that have been included in the catchment area include general freight, forestry and fertiliser.
- Future freight demand (2041) in the Central West catchment area is estimated to be between 3,099,000 and 4,649,000 tonnes per annum with an average of 3,874,000 tonnes per annum. Growth is assumed to follow Transport for NSW (TfNSW) long-term demand forecasting assumptions for commodities (refer to Section 5.3.1).
- The analysis has identified 279,400 tonnes of current potential SME freight. The current network demand consists of 83,200 tonnes of current rail freight (30% rail mode share) and 196,200 tonnes of current road freight (70% road mode share).
- Three demand scenarios were modelled, with scenarios varying in terms of demand and infrastructure assumptions for the consolidation facility in Parkes (the Preferred Option):
 - Base Case Scenario – no changes.
 - Scenario 1 – provision of a consolidation facility in Parkes with access to an existing rail intermodal terminal.
 - Scenario 2 – provision of a consolidation facility in Parkes with access to an existing rail intermodal terminal and fertiliser consolidation infrastructure.
- The Base Case demand largely maintains the existing road and rail mode share, which includes Inland Rail. In the Base Case scenario, the medium future contestable freight demand in 2041 is 354,800 tonnes. The future network demand consists of 104,500 tonnes of rail freight (29% rail mode share) and 250,300 tonnes of road freight (71% road mode share).
- Scenario 1 – provision of a consolidation facility in Parkes with access to an existing rail intermodal terminal. Under Scenario 1, 47,000 tonnes of rail freight is expected to be capturable by the facility, with the medium future network demand (2041) consists of 151,500 tonnes of rail freight (43% rail mode share) and 203,300 tonnes of road freight (57% road mode share).
- Scenario 2 – provision of a consolidation facility in Parkes with access to an existing rail intermodal terminal and fertiliser consolidation infrastructure. Under Scenario 2, 132,000 tonnes of freight is expected to be capturable by the facility, with the medium future network demand (2041) consists of 236,500 tonnes of rail freight (67% rail mode share) and 118,300 tonnes of road freight (33% road mode share).
- Future network freight demand estimates consider potential modal shift of road freight as a result of Inland Rail. For this Proposal, this is estimated to be between 7,000 and 11,000 tonnes and, based on the Inland Rail construction timetable, is assumed to commence operations in 2028.



Options Identification and Assessment

Key findings

- The aim of this Proposal is to identify and assess a range of possible options to facilitate the ability of regional business and SMEs to access Inland Rail.

- A consolidation centre was identified as a potential infrastructure solution whereby many suppliers deliver goods directly to the consolidation centre, where it is stored and combined with other freight within the facility before being transported to the next destination.
- Several non-infrastructure solutions such as education and potential digital solutions for SMEs were identified with as an alternate to the infrastructure solution.
- Three potential locations were identified within the Central West region as options for the development of the consolidation centre. Whilst specific site locations have not been identified within Gate 2, the focus of the options assessment within the Study is identifying the preferred location and infrastructure technical solution to proceed for further analysis. The following Options were identified and assessed against the Base Case:
 - Base Case: 'do nothing' scenario where the Proposal is compared only against currently committed / funded freight handling facility projects in the region and existing rail and road transport options.
 - Option 1: A consolidation centre in Parkes.
 - Option 2: A consolidation centre in Forbes.
 - Option 3: A consolidation centre in Orange.
- The MCA and sensitivity analysis identified Option 1 Parkes as the Preferred Option, primarily based on supply chain efficiencies and complexity, risk, cost and deliverability. Supply chain cost analysis identified the most beneficial location for a consolidation centre in terms of economic efficiencies is in Parkes, specifically within the Parkes SAP.
- It is therefore recommended to progress Option 1 (Parkes), and more specifically the Parkes SAP, as the Preferred Option for further analysis in accordance with the economy of effort principle. Options 2 and 3 (Forbes and Orange) were not progressed for detailed cost, benefit, or regulatory analysis.
- A single technical solution for the consolidation centre located within the Parkes SAP was developed by SNC. The technical solution is a staged solution, consistent with the findings of the demand analysis:
 - Stage 1 – Minimum Viable Product - development and construction of infrastructure sufficient for 2023 volumes excluding fertiliser.
 - Stage 2 – Full Scope – expansion of Stage 1 to have sufficient infrastructure for 2041 volumes including fertiliser. Construction to commence 5 years after Stage 1.



Costs

Key findings

- Strategic P50 costs have been developed for the Preferred Option in Parkes. The costs are based on high-level scoping and design.
- Initial capital cost estimates (on a P50 basis, in nominal terms (2022)) for the Preferred Option in two stages is as follows:
 - Stage 1: \$35.0million.
 - Stage 2: \$21.6million.
 - Total: \$56.6million.
- Operating and maintenance costs (P50, nominal, over the 30-year period of analysis) for the Preferred Option, in two stages are:
 - Stage 1: \$30.0million which includes maintenance costs (\$27.2million) and operating costs (\$2.8million).
 - Stage 2: \$12.2million which includes maintenance costs (\$10.5million) and operating costs (\$1.7million).
 - Total: \$42.3million which includes maintenance costs (\$37.8million) and operating costs (\$4.5million).

- Whole of Life costs (P50, nominal, over the 30-year period of analysis) for the Preferred Option, in two stages including capital, operating, and maintenance costs are:
 - Stage 1: \$65.1million
 - Stage 2: \$33.8 million
 - Total: \$98.9 million.
- Due to the level of design information available at this stage, a 50% contingency has been applied. This is in keeping with models and suggested parameters used by TfNSW on road and rail projects at the concept design stage. All capital costs have been escalated by current construction price index value of 3% per annum.
- Should this Proposal progress to Gate 3, refinement of cost estimates for the preferred option is expected in collaboration with the asset owner. Costs will also be refined to consider any potential implications from property acquisition costs, or any costs related to potential mediation, environmental activities or other regulatory approvals that may be required.



Benefits

Key findings

- The Proposal has the potential to deliver a number of direct and indirect operating benefits to local industries and community in the Central West region. These benefits are driven by addressing the opportunities as identified in the ILM.
- An economic benefits appraisal has been undertaken on the Preferred Option for a consolidation centre constructed in Parkes within the Central West. The benefits reflect the demand analysis in Section 5 and the staged approach to construction as noted in Section 6.8.2.
- The Proposal is estimated to result in \$35.9 million of benefits (discounted at 7% p.a. to FY2022) over a 30-year appraisal period. This includes \$22.0 million in direct benefits and \$13.9 million in indirect benefits.
- For this Proposal, the benefits are achieved by shifting freight from road to rail, resulting in road vehicle operating cost (VOC) savings, and indirect benefits such as reduced road damage cost savings, road environmental impacts and road crash costs. These benefits are partially offset by operating dis-benefits associated with increased usage of the intermodal pathway facilitated by the consolidation centre (i.e. the Proposal pathway) and increased rail usage.
- A number of benefits are yet to be quantified but are considered qualitatively in this Section. These include residual value benefits and generated demand benefits.
- Refinement of the demand estimates and the Proposal specifications for the Preferred Option (Option 1) at Gate 3 is recommended (if the Proposal proceeds through Gate 2), in order to support further analysis and quantification of associated benefits.



Funding and Financing

Key findings

- Consistent with the early stage of the Proposal, no funding or financing commitments have been finalised at this stage.
- The stakeholder process undertaken as part of this Gate 2 process did not identify any specific funding or financing commitments at this stage.
- State Government initiatives and Federal Government programs have been identified as potential financing sources. Eligibility requirements would need to be considered when details of the delivery proponent, partnerships and financing arrangements are further developed.
- There is an opportunity for investments to be re-couped through charges or for a prospective operator to contribute to the build. However, an operator has not been consulted with as part of the Gate 2 analysis and will be considered as part of future stakeholder consultation in Gate 3, should the Proposal proceed.

- If the Proposal proceeds through Gate 2, the funding analysis at Gate 3 will focus on the Proposal's financial viability. This analysis will build on any additional funding support provided by third parties including but not limited to stakeholders consulted at Gate 2 and potential operators of the Proposal.



Potential Regulatory Requirements

Key findings

- The potential regulatory requirements analysis has been undertaken for the Preferred Option only (Parkes). Due to the absence of an exact site location within the Parkes SAP, initial areas of concern could not be identified. However, it is acknowledged that the development of a 'freight consolidation facility' or 'warehousing and distribution centre' is a land use permitted with consent in the Regional Enterprise Zone, which comprises almost all of the SAP. Further, in complying with certain requirements (environmentally sensitive areas, heritage etc.) the Proposal could proceed as complying development.
- The NSW Government has recognised the area for future growth and investment through the establishment of the Parkes SAP.
- The State Environmental Planning Policy (Activation Precincts) 2020 establishes a streamlined development assessment process around a government led Master Plan and Delivery Plan, and the issue of Activation Precinct Certificates (APC) by the NSW Regional Growth Development Corporation for development that is consistent with these plans.
- Enabling works approvals (i.e. roads, bridges, landscaping, water supply and sewage connections) have already been issued and works are underway for the development of key transport infrastructure and utilities within the Parkes SAP.
- The Proposal would be assessed against the SAP Master Plan and Delivery Plan. For delivery of the Proposal by an entity other than a public authority, an application would need to be made to Regional Growth NSW Development Corporation (RGDC) for an APC. The Proposal would then proceed via either a complying development certificate (CDC) issued by a certifier, or in certain circumstances (i.e. where environmentally sensitive areas or heritage items or places are impacted), a development application would be required subject to the development assessment and consent requirements of Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), with the Parkes Shire Council the consent authority.
- The Activation Precinct State Environmental Planning Policy (Activation Precinct SEPP) includes an Environmentally Sensitive Areas Map and the SAP Master Plan identifies areas of high ecological value to be retained and avoided by development proposals. If these areas could not be avoided and the Proposal were determined likely to have a significant impact on a listed threatened species, then a Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) approval would be required. Similarly, impacts on native vegetation and threatened species may trigger requirements of the NSW Biodiversity Offsets Scheme.
- Development proposed in an area impacting Aboriginal or cultural heritage will require a development consent process and matters to be addressed under the Heritage Act 1977, which will have additional time and cost implications.
- The proposed freight consolidation facility and associated activities are unlikely to constitute any of the activities in Schedule 1 of the Operations Act 1997 (PoEO Act), as such Environmental Pest and Lawn Services (EPLs) are unlikely to be required.
- Once a Proposal site is identified, review of the SAP Master Plan and Delivery Plan performance criteria will identify constraints and guide the development of a concept design. Searches of any conservation, historic or heritage areas, and contaminated land registers can be undertaken that may trigger requirements for a development consent and other approvals.
-

Introduction and Context

Gate 2 approach

This section outlines the purpose of this Gate 2 Pre-Feasibility Study (the “Study”) and the methodology used to complete the analysis in accordance with the Gateway Assessment Process.

Purpose

The Australian Government's Inland Rail Interface Improvement Program (II Program) was established to assist industry, local communities and government to identify and assess Proposals that could potentially increase and maximise the long-term benefit of Inland Rail's connections to the national freight rail network.

The purpose of this Study is to progress the P2_022 Central West Consolidation Centre Proposal (the “Proposal”) through the Department of Infrastructure, Transport, Regional Development and Communications' (the “Department”) Gateway Assessment Process. This Proposal is being progressed as part of the Productivity Enhancement Program (PEP) under which Proposals are assessed against how they evaluate the costs and benefits of proposed improvements to the interface between supply chains and Inland Rail, with a view to improving community resilience.

The primary focus of this Study is on the identification and assessment of potential options. This document provides:

- Analysis of the demand, costs and benefits used to justify the selection of the preferred option.
- An initial examination of the funding and financing of the Proposal, particularly in relation to third party investment or in-kind support.
- Potential regulatory requirements which may be triggered by the Proposal.
- Identification of any data gaps that will need to be addressed should this Proposal continue to the Gate 3 Feasibility analysis.

The Department will determine whether the Proposal is eligible to proceed through the Gateway Assessment Process following the agreed feedback and review process³. Should the Proposal be eligible to proceed, the results will be investigated in further detail in subsequent Gates.

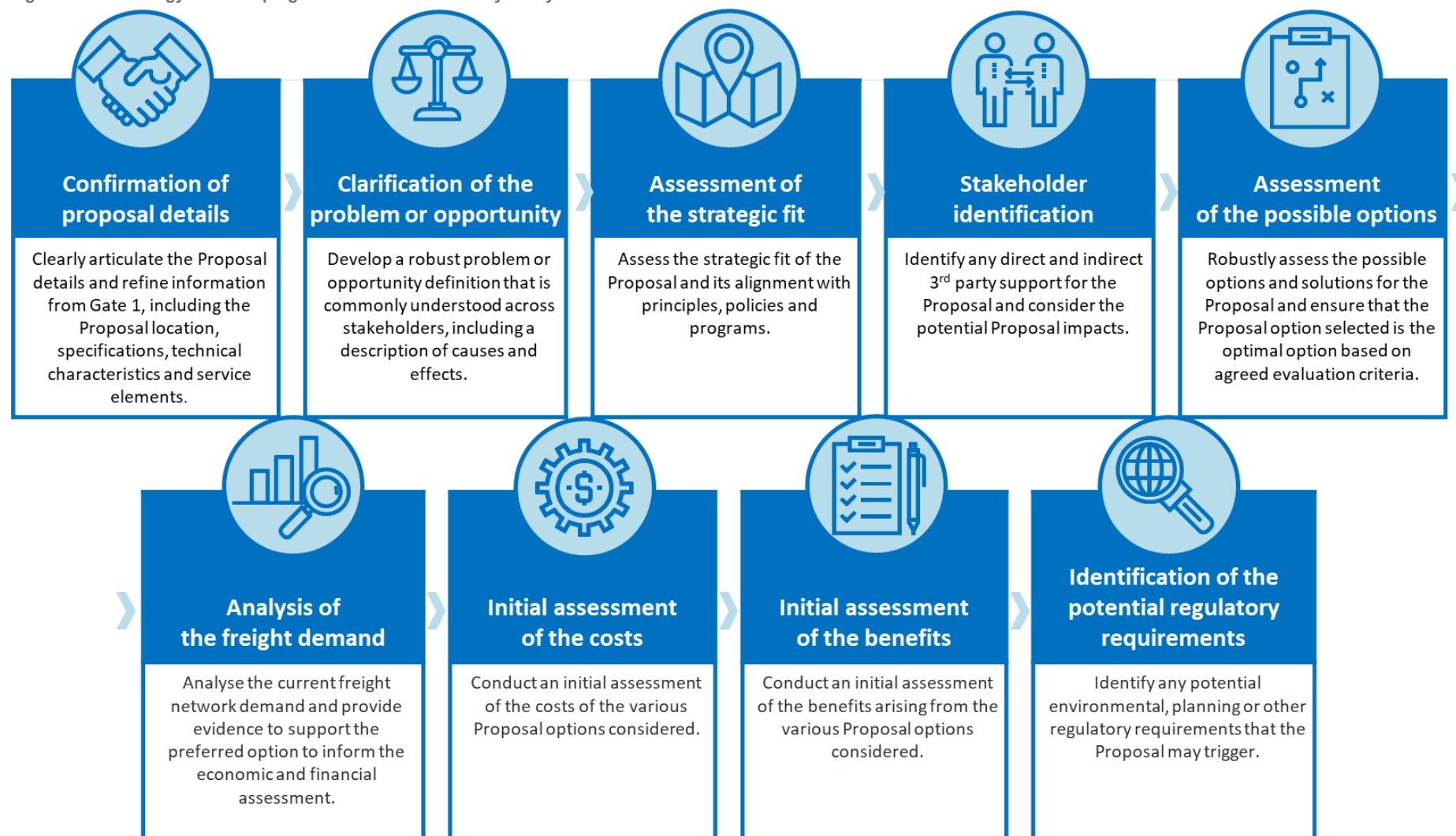
Methodology

The Proponents and EY worked collaboratively in developing this Gate 2 Pre-Feasibility Study in accordance with guidance material pertaining to the Gateway Assessment Process. Please refer to Appendix I for more detail on the key activities to be undertaken for each Gate study.

An overview of the methodology for developing this Study is provided in Figure 3 below.

³ As set out in the “Process Steps” document as at May 2020, the Department

Figure 3 Methodology in developing the Gate 2 Pre-Feasibility Study



Please refer to:

- Appendix A for further Proposal information.
- Appendix B for more detail on the information sources used including the documents considered.
- Appendix C for more detail on the stakeholders consulted during the development of this document.
- Appendix D for letters of support.
- Appendix E for more detail on demand analysis.
- Appendix F for more detail on benefits quantification.
- Appendix G for more detail on the costing of Options.
- Appendix H for more detail on the ILM.
- Appendix I for more detail on the key activities at each Gate.
- Appendix J for more detail on the SNC Options report.

1. Proposal Details

Key messages

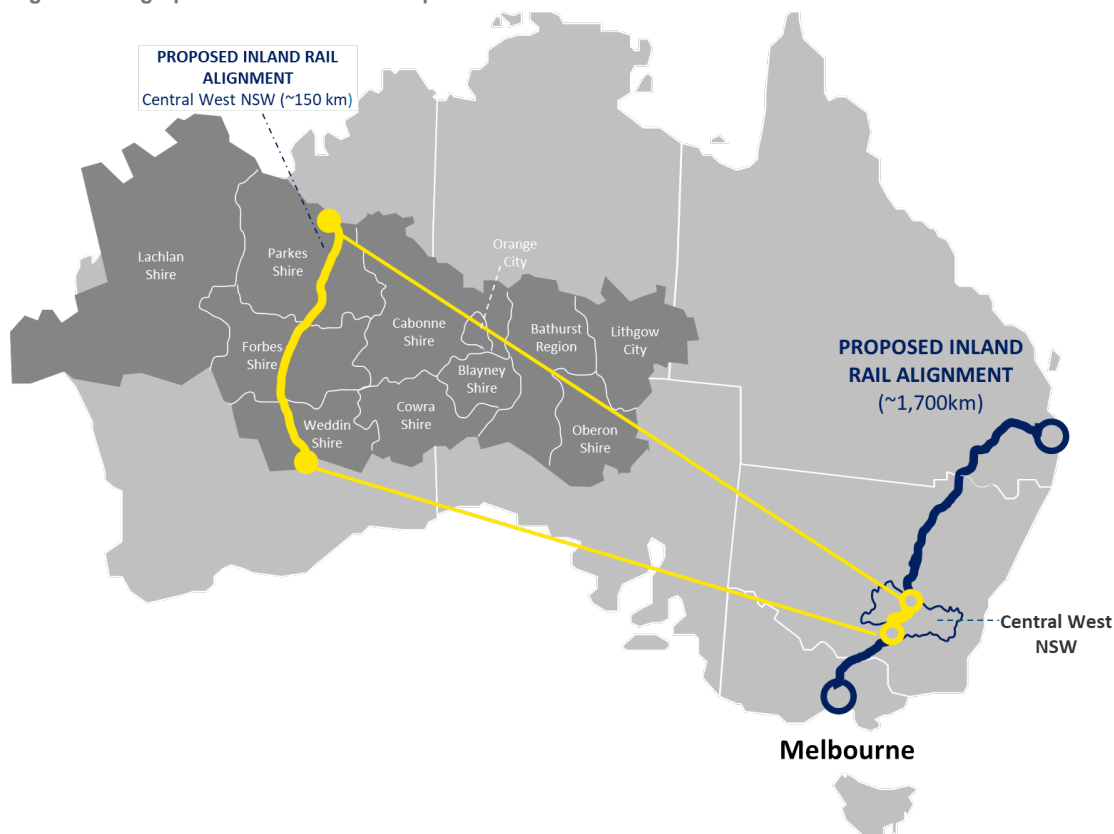
- The Proposal considers infrastructure solutions to improve access to markets for SMEs by leveraging Inland Rail to increase supply chain access.
- The goal is to improve and facilitate the ability of regional business and SMEs to access the rail line and continue to grow sustainably. The Proposal would provide long-term regional benefits, increasing the connectivity of SMEs to freight supply chains and domestic and potentially international markets.
- The Proposal considers three options for increasing the access to markets of SMEs in Central West NSW. The options are three consolidation centres defined in terms of location, the scale of centre and nature of goods handled.

1.1 Proposal Details

The Proposal involves the development of opportunities and solutions to improve the access to markets for SMEs in Central West NSW by leveraging Inland Rail. Figure 4 below shows the Inland Rail alignment and the proposed region under investigation.

Three consolidation centre options will be developed for the Central West NSW region, with those options to be defined in terms of location, the scale of centre and nature of goods handled.

Figure 4 Geographical context of the Proposal



Source: EY

This Proposal has arisen due to consultation with SMEs in the Central West region, who have raised queries regarding accessing the benefits of Inland Rail. Connectivity to market is a key challenge, with local and regional businesses in the Central West relying on the road freight network for the export of commodities destined for national and international markets. This Proposal seeks to investigate barriers and enablers for SMEs to access Inland Rail as a viable option for the distribution of the products to key domestic and international markets. Details of the Proposal are shown in Table 2.

Table 2 Proposal details

Proposal Details	
1.1 Proposal Title	P2_022 - Central West Consolidation Centre
1.2 Proponent	Central NSW JO and RDA Central West
1.3 Description	<p>The Proposal includes the identification of potential barriers that SMEs may experience in trying to access the benefits from the Inland Rail. This includes investigating potential infrastructure solutions to facilitate access to Inland Rail.</p> <p>The goal is to improve and facilitate the ability of regional business and SMEs to access the Inland Rail line and continue to grow sustainably. The Proposal would provide long-term regional benefits, increasing the connectivity of SMEs to freight supply chains and domestic and potentially international markets.</p> <p>Three consolidation centre options will be developed for the Central West NSW region, with those options to be defined in terms of location, the scale of the centre and nature of goods handled.</p>
1.4 Background	<p>Industrial context</p> <p>The Central West region of NSW covers an area of 63,000 square kilometres and is home to 177,000 people within the 11 local government areas (LGAs) of Bathurst, Blayney, Cabonne, Cowra, Forbes, Lachlan, Lithgow, Oberon, Orange, Parkes and Weddin.⁴</p> <p>The agriculture sector comprises 73% of Central Western NSW's GRP, making it the region's third most significant sector after mining and manufacturing.⁵ In 2018 - 19, the gross value of agricultural production in the Central West region was \$1.4 billion, which was 12% of the total gross value of agricultural production in NSW of \$11.7 billion.⁶</p> <p>Rail context</p> <p>Central West NSW is located in the Parkes to Narromine component of the Inland Rail project, where 98.4 kilometres of existing rail track is being upgraded and 5.3 kilometres of new rail track is being built.</p> <p>Central West NSW, along with Riverina Murray and New England North West, is one of the major areas of production of grain in NSW, and export and domestic grain movement represent 4.2% of the regional freight task.⁷</p> <p>The market share of freight using the road network over rail is increasing. Significant improvements in high performance vehicles, increased truck loads, improved fuel efficiency and safety have resulted in significant productivity gains for the road transport sector. In contrast, the rail sector has not been able to keep pace with the productivity gains and has been impeded by aging infrastructure. This has seen road capture an increasing market share of the freight task.</p>

⁴ RDA Central West, *Small Agricultural Enterprise Logistics*, 2016

⁵ RDA Central West, *Small Agricultural Enterprise Logistics*, 2016

⁶ Australian Government, *About my region – Central West New South Wales*, <https://www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-central#farm-financial-performance>, June 2021

⁷ NSW Government, *Freights and Ports Plan 2018-2023*, September 2018

2. Problem or Opportunity Definition

Key messages

- An ILM Workshop was held in October 2021 to identify the opportunities in the region that could be addressed by the Proposal.
- The workshop identified three opportunity statements:
 - The development of a consolidation centre in the Central West will improve and facilitate the ability of regional business and SMEs to access Inland Rail which will in turn create efficiencies in their supply chain by reducing freight costs.
 - Increasing the proportion of freight utilising rail in the region will reduce constraints on the road network in the region and improve road safety.
 - Increasing regional business movement to broader domestic and international markets may support regional economic growth opportunities which will enhance community resilience through economic diversification and create jobs (and population) growth.

This section defines the fundamental opportunities that the Proposal is to realise. Ultimately, the problem and opportunity analysis underpin the strategic options assessment and informs the development of the proposed benefits that the Proposal will deliver.

2.1 Description of opportunities

As part of the II Program, the Proponents propose to improve the economic opportunities in the Central West NSW region by identifying potential barriers SMEs may experience in trying to access the benefits from Inland Rail.

An ILM Workshop was conducted with the Proponents and key regional councils on 12 October 2021 to identify such barriers.

The constraints and opportunities relevant to this Proposal were identified in the ILM Workshop by the Proponents and the regional councils. Three opportunities were identified that the Proposal aims to address:

- **Opportunity 1** - The development of a consolidation centre in the Central West will improve and facilitate the ability of regional businesses and SMEs to access Inland Rail which will in turn create efficiencies in their supply chain by reducing freight costs.
- **Opportunity 2** - Increasing the proportion of freight utilising rail in the region will reduce constraints on the road network in the region and improve road safety.
- **Opportunity 3** - Increasing regional business movement to broader domestic and international markets may support regional economic growth opportunities which will enhance community resilience through economic diversification and create jobs (and population) growth.

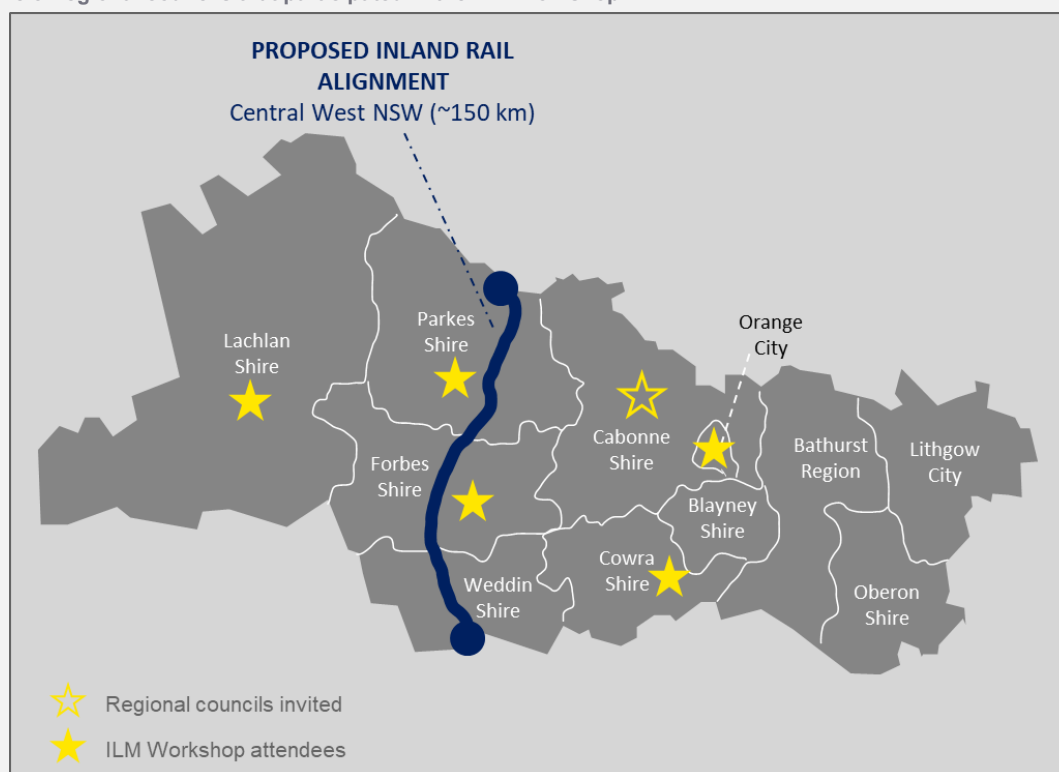
In addition to being directly relevant to the Proposal, these opportunities have been identified to align with the strategic priorities outlined in Section 3, including the II Program PEP principles. See Section 3 for further information on how the Proposal and the problems and opportunities identified in this section fit with the strategic context.

Box 1 ILM workshop attendees

The ILM workshop was attended by EY, the Proponents, *george stanley consulting*, SNC and the following Central West regional councils as identified by the Proponents:

- **Parkes Shire Council:** Parkes is one of the most significant locations in the future of transport and logistics in Australia. Parkes' strategic importance will be further boosted when the Inland Rail from Melbourne to Sydney is complete.⁸
- **Forbes Shire Council:** Forbes is one of the most productive areas in NSW. The main industries include manufacturing sheep and cattle farming, wheat, and various other crops.
- **Cowra Shire Council:** The Cowra Shire economy is largely based on agriculture (sheep, grains, beef and dairy cattle) as a result of the temperate climate and fertile alluvial soils, which produces 11.1% of the region's output. The region also has a significant manufacturing presence (7.0% of the region's output), which is dominated by furniture manufacturing and food manufacturing.⁹
- **Lachlan Shire Council:** Lachlan's main industry is agriculture. It is one of the state's largest grain producing areas and also has a strong sheep, wool and beef industries.
- **Orange City Council:** Orange's economy is driven by health service activities, mining and mining support, public administration, tourism, viticulture and horticulture. The population of Orange is expected to grow almost a 24% by 2036.¹⁰

Figure 5 Regional councils that participated in the ILM Workshop



Source: EY

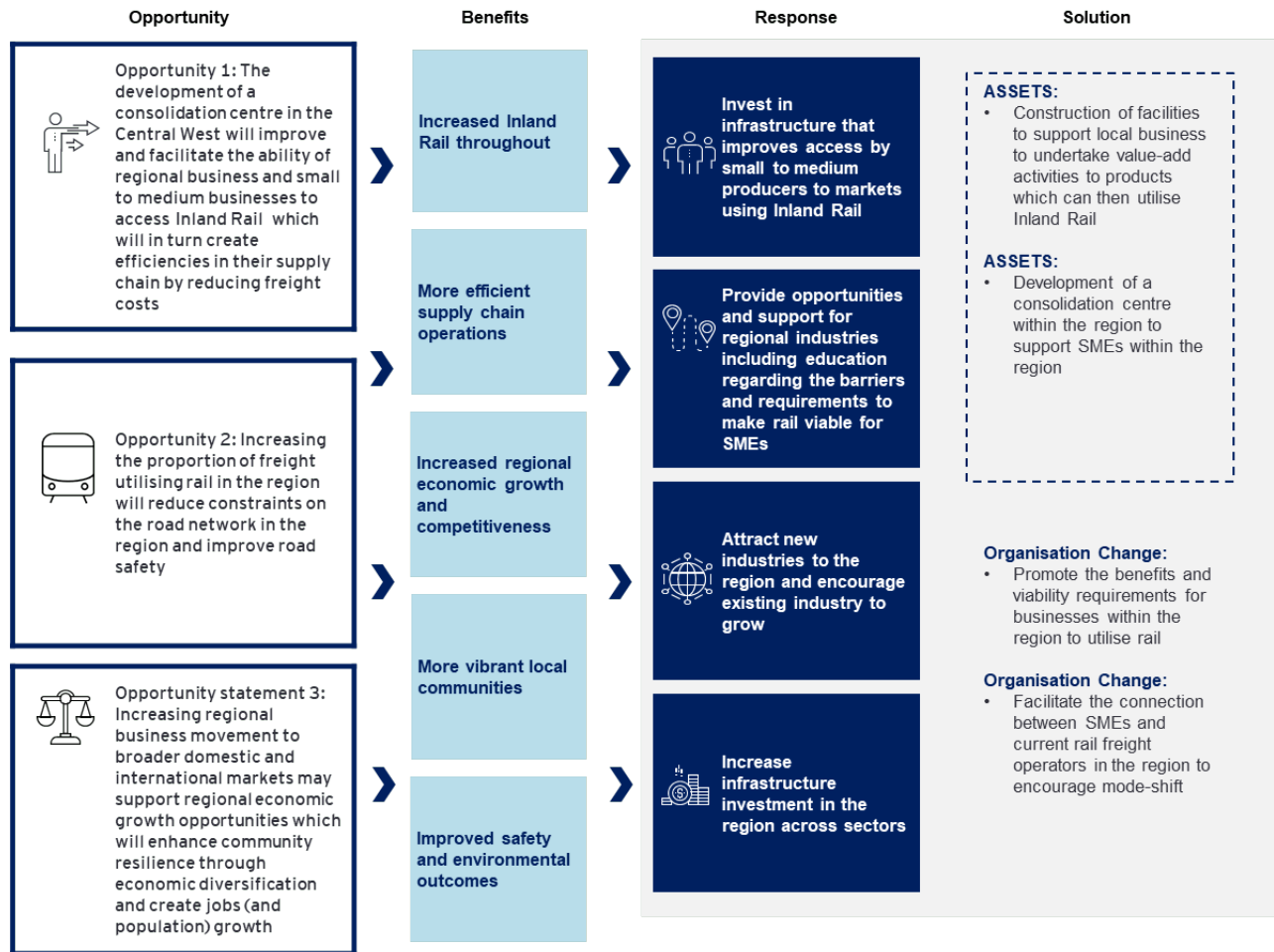
A summary of the ILM developed for the Proposal is presented in Figure 6, with a further summary of each opportunity shown in sections 2.2.1, 2.2.2 and 2.2.3. The outputs from the ILM are provided in Appendix H.

⁸ Parkes Shire Council website, visited on October 15, 2021

⁹ *Regional Economic Development Strategy 2018-2022*, Cowra Shire

¹⁰ *Community Strategic Plan*, Orange City Council 2018

Figure 6 Summary of Investment Logic Mapping for Proposal



Source: EY

2.2 Causes of and effects constraints or opportunities

2.2.1 Opportunity Statement 1

The development of a consolidation centre in the Central West will improve and facilitate the ability of regional business and SMEs to access Inland Rail which will in turn create efficiencies in their supply chain by reducing freight costs.

Causes:	<p>A lack of scale creates an expensive distribution model for SME producers. There is an opportunity for SMEs to collaborate or form alliances to consolidate freight into the scale required to reduce supply chain costs.¹¹</p> <p>In addition, Inland Rail is expected to offer both cost and service performance advantages over road freight travelling significant distance and there is expected to be substantial mode shift from road to Inland Rail for commodity and some agricultural freight.¹²</p> <p>The development of a consolidation centre will allow SMEs to achieve economies of scale and benefit from accessing rail to reduce supply chain costs.</p>
Evidence of causes:	<p>Inland Rail will have a positive impact on the Central West NSW region, however there are several challenges to overcome in order to maximise the potential benefits that Inland Rail might bring to the region.</p> <p>Connectivity to market is a key challenge for Central West NSW SMEs. Many SMEs have reported significant difficulties in distributing their products directly to clients due to the complexity of logistics and the lack of expertise.</p> <p>The movement of low volume general freight by rail is generally uncompetitive in the Central West compared to road freight for short haul into the Greater Sydney region and NSW ports. This is due primarily to the extent to which costs are recovered through user pay arrangements.¹³</p> <p>Rail transport offers significant productivity improvement for producers and industry participants and is more cost effective than road for long distances. Producers moving freight from the region to Brisbane or Melbourne stand to benefit from a mode shift from road to rail transportation resulting in lower supply chain costs. The investment in a consolidation centre will improve supply chain efficiency for SMEs and maximise the use of the rail offering.</p> <p>Figure 7 Average freight cost for Australian inter-capital road and rail freight</p> <p>Source: BITRE, <i>Road and rail freight: competitors or complements</i> (2009)</p>
Effects:	<p>The development of a consolidation centre within the Central West with efficient access to Inland Rail will allow SMEs to gain the potential productivity savings possible by shifting from road to rail. This will allow SMEs to improve their competitiveness and provide opportunities for regional economic growth.</p>
Evidence of effects:	<p>Consolidation Centre Impact on cost efficiency</p> <p>RDA Central West, with the support of the NSW Department of Industry, investigated the extent of need in Central West NSW for a domestic freight model that enables small agribusinesses to deliver irregular, low volumes of agricultural produce to clients in an</p>

¹¹ RDA Central West, *Small Agricultural Enterprise Logistics*, Page 26

¹² ARTC, *Inland Rail Programme Business Case*, 2015, Page 134

¹³ *RDA Central West Freight Study* 2014

efficient, timely and affordable manner. It was identified that connectivity to market was a key challenge for Central West agricultural SMEs.¹⁴

The study found that although there is no one size fits all solution for small agribusiness logistics, forming regionally based, producer driven collaborations or alliances to consolidate freight, storage and delivery, is a possible solution to create economies of scale and reduce costs to producers.¹⁵ Box 2 summarises a case study identified within the RDA report for how SMEs have collaborated to reduce transport costs.

There is an opportunity within the Central West region to provide the facilities to enable consolidation, collaborations or alliances to reduce freight costs and improve competitiveness of the region.

Inland Rail Impact on cost efficiency

A pilot study conducted by CSIRO projected significant savings from the use of Inland Rail for horticulture and post-processed foods.

The CSIRO Inland Rail Supply Chain Mapping report quantified an average cost saving of approximately \$76 per tonne for road trips following a shift from road freight transport to Inland rail as shown in Figure 8.¹⁶

Figure 8 Cost savings from a shift to Inland Rail



*Depending on back loading

Source: CSIRO Inland Rail Supply Chain Mapping

The proposed infrastructure solution will enable SMEs to maximise connections with Inland Rail and subsequently improve their competitiveness. As a result, SMEs will have access to cost-effective domestic and international freight markets over the medium long term.

By providing more cost-effective access to regional and international markets, any new connections to Inland Rail may encourage local SMEs to take advantage of improved profit margins by increasing their production levels or investment in value-added operations where possible.

¹⁴ RDA Central West, *Value Adding to agriculture in Central West*, 2016, Page 74

¹⁵ RDA Central West, *Small Agricultural Enterprise Logistics*, Page 5

¹⁶ *Inland Rail Supply Chain Mapping, Parkes to Narromine Pilot*. CSIRO. March 2019, https://www.inlandrail.gov.au/sites/default/files/csiro_transit_inland_rail_supply_chain_mapping_pilot_study_2.pdf

Consolidation Case Study – Etelä-Suomi (Southern Finland)

The following case study, sourced directly from RDA Central West's Small Agricultural Enterprise Logistics report, demonstrates how two groups of small producers in meat and bakery products were able to collaborate to lower the costs of delivery to the metropolitan market. The initiative was formed with the Vikki Food Centre at the University of Helsinki, food and logistics experts, the Finnish Food Information Association and the Finnish Ministry for Transport. Two logistics solutions were developed across four areas 150-250km from the city.

The first stage was to assess the logistics needs of over 200 SMEs in the region. The potential logistics solutions to match these requirements were then assessed, both in the region and in Helsinki. The Finnish Food Information Association had an on-line platform that was adapted from an unsuccessful "business to customer" (B2C) operation to a "business to business" (B2B) sales and ordering platform for the SMEs, allowing them to sell to hotels, restaurants and specialist retailers. Common collection points were set up in the region for consolidating loads, and also in the city for backloading supplies for the producers. In addition, an "energy passport" enabled calculation of how 'green' each supply rated, and this was used by the SMEs in their marketing.

Eleven producers are involved in the two collaborative groups. This was the first time that these companies had worked together, and the cooperation has now extended beyond transport to collaborative sales and marketing.

Source: RDA Central West – Small Agricultural Enterprise Logistics, Page 21

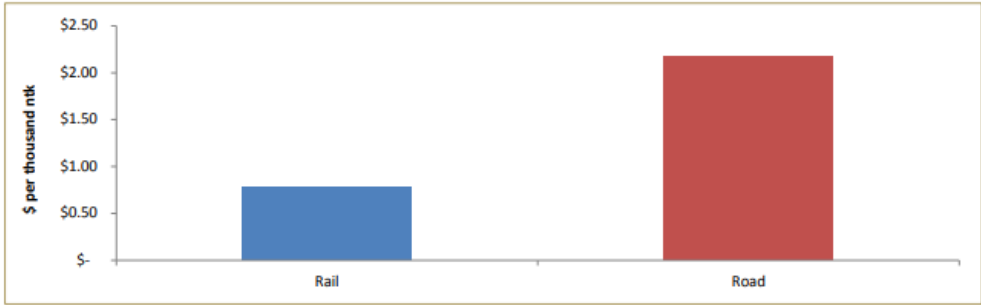
2.2.2 Opportunity Statement 2

Increasing the proportion of freight utilising rail in the region will reduce constraints on the road network in the region and improve road safety

Causes:	Allowing for and creating infrastructure to support the SMEs in the region will encourage a mode shift and remove trucks from the roads improving safety in freight transport by decreasing road freight.
Evidence of causes:	<p>Currently, road freight dominates the freight task in the region, with rail freight limited to the movement of bulk and containerised agricultural commodities (grain in particular) within NSW. The exception is the Main West rail line in the Lithgow LGA which experiences significant volumes of coal traffic and parts of the interstate line through the far western LGAs.¹⁷ The region is currently served by the following rail corridors:</p> <ul style="list-style-type: none"> The rail corridor from Narromine to Stockinbingal, which passes through Parkes. The Parkes -Narromine line forms a cross-country link between the Main Western and Broken Hill lines, while the Stockinbingal-Parkes line provides a major cross-country link between the Main South and Main Western lines. It is used particularly for east-west freight trains to avoid the difficulties of crossing the Blue Mountains to the west of Sydney. The second rail corridor is from Broken Hill to Sydney. The Broken Hill line extends west from Orange to Broken Hill and then to Adelaide. It is an important link for east/west trans-continental freight. The Broken Hill line connects with the Main Western Line at Orange East to Sydney, and North to Bourke. <p>Road freight is mainly carried on the Newell Highway and Great Western Highway Corridors. The Newell Highway supports the movement of high volumes of general goods from Melbourne/Adelaide to Brisbane and various origin and destination combinations in between, and Great Western Highway supports transport of general goods to and from Sydney.¹⁸</p> <p>It is expected that there will be an increase in production of commodities by 2034 across the region as well as an increase in through freight over the next 20 years which will further increase volumes utilising the existing rail lines. In addition, it is predicted that freight movement on the Newell Highway will increase at approximately 4% per annum and will continue to increase congestion at city interface points.</p> <p>Demand analysis undertaken within this Study (refer to Section 5) has identified that the majority of SME freight volume from the Central West is transported by road accessing Sydney markets and export ports. SME contestable freight from the region travels by the following key pathways:</p>

¹⁷ EY analysis 2021

¹⁸ RDA Central West Freight Study, 2014

	<ul style="list-style-type: none"> • Timber and food/animal products transported to Port Botany by rail. • General freight and commodities transported to/from Sydney by road. • General freight and commodities transported to/from Brisbane and Melbourne by road. • Fertiliser transported from Newcastle by road. <p>The above mentioned findings were confirmed through stakeholder consultations whereby SMEs identified road is the preferred transport mode for either part of or the full freight journey.</p>						
Effects:	The effect of realising the opportunity will be increased safety and efficiency of rail operations within the region, reduce road maintenance, and improve environmental and social amenity outcomes.						
Evidence of effects:	<p>Safety impacts</p> <p>Continued reliance on road freight will increase the frequency and severity of road accidents. It is noted that road freight is nine times less safe than rail freight.¹⁹ Conflicts between heavy vehicles, cars and pedestrians undermine community amenity and are nearly three times more likely to result in death or serious injury relative to rail. Road accidents impose several costs on the local community including emergency services, hospital costs, lost workforce productivity and lost household productivity.²⁰</p> <p>As highlighted in Figure 9, heavy vehicles are responsible for 1 in 6 road crash fatalities and are a major contributor to road damage.²¹ Further, truck drivers are 13 times more likely to suffer a fatality at work than any other profession. Consequently, the sustained road freight task from the Central West is likely to generate continued negative impacts on road safety.</p> <p>Figure 9 Australian rail and road accident rates (\$2014, per net tonne kilometre)</p>  <table border="1"> <caption>Data for Figure 9: Australian rail and road accident rates (\$2014, per net tonne kilometre)</caption> <thead> <tr> <th>Mode</th> <th>Accident Rate (\$ per thousand ntk)</th> </tr> </thead> <tbody> <tr> <td>Rail</td> <td>~\$0.75</td> </tr> <tr> <td>Road</td> <td>~\$2.20</td> </tr> </tbody> </table> <p>Source: BITRE, <i>Road trauma involving heavy vehicles: crash statistics</i>, page 17 and 41-43, 2014 and Australian Rail Safety Bureau, <i>Australian Rail Safety Occurrence Data</i>, pages 3,4, 2012; and Austroads <i>Guide to Project Evaluation, Part 4</i>, page 35, 2021</p> <p>Sustained road freight contributes to road degradation</p> <p>The high number of trucks on the road network causes the rapid deterioration of roads and will impose significant road maintenance costs for councils, whilst also decreasing the quality of the road network overall. A recurring, persistent maintenance gap deteriorates the overall state of the road network, generating a vicious cycle where the burgeoning infrastructure backlog continuously impedes growth and prosperity (Figure 10).</p>	Mode	Accident Rate (\$ per thousand ntk)	Rail	~\$0.75	Road	~\$2.20
Mode	Accident Rate (\$ per thousand ntk)						
Rail	~\$0.75						
Road	~\$2.20						

¹⁹ Australasian Railway Association. *Rail Freight – Delivering for Australia*. 26 February 2019.

²⁰ Inland Rail Business Case pg. 81

²¹ *Road Trauma Australia 2016 Statistical Summary*, BITRE, Monash University Driving Study, 2018, Heavy vehicle road reform infographic, Department of Infrastructure, Regional Development and Cities

Figure 10 Social inefficiencies resulting in a high road share of freight

Heavy vehicles make up less than 1 in 35 vehicle registrations, but



Source: BITRE

Environmental costs and reductions in social amenity are higher for road compared to rail

Constrained access to rail freight, and continued reliance on road freight, can be expected to increase congestion, and environmental costs. For example, estimates of the differences in rail and road environmental costs are outlined in Table 3. Including air pollution, greenhouse gas emissions, noise, water pollution, nature and separation, urban separation and upstream and downstream costs, road freight generates more than eight times more environmental costs in urban areas and over 23 times more in rural areas than rail freight.

Table 3 Environmental costs for road and rail freight (\$ per 1,000 tonne kilometre travelled)

Externality type	Urban		Rural	
	Heavy vehicle	Rail	Heavy vehicle	Rail
Air pollution	28.07	4.55	0.28	-
GHG emission	6.24	0.41	6.24	0.41
Noise	4.68	1.93	0.47	-
Water pollution	4.21	0.14	1.69	0.14
Nature and landscape	4.69	1.10	4.69	1.10
Urban separation	3.13	1.10	-	-
Upstream and downstream costs	24.99	-	24.99	-
Total	76.01	9.23	38.36	1.65

Source: TfNSW Economic Parameter Values

The over-reliance on the road network by freight operators is having a greater impact on the environment and on the quality of regional roads. With trucks emitting an estimated 750,000 more tonnes of CO₂-e than trains doing the same job.²² Enabling modal shift from road to rail freight for a large portion of the distance will alleviate the environmental costs imposed on residents along the freight network.

²² Inland Rail Business case, 2019

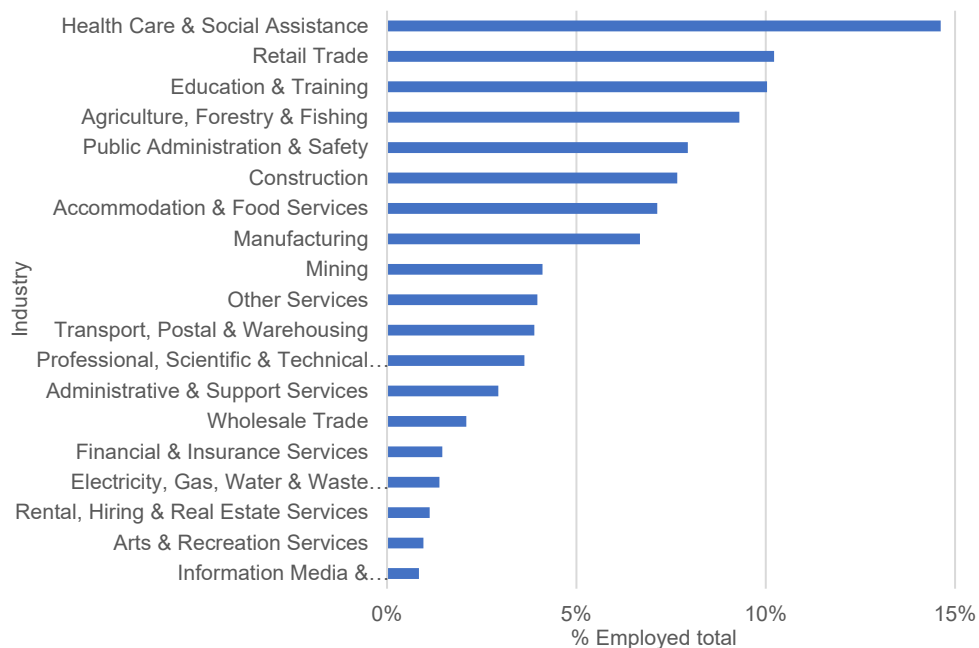
2.2.3 Opportunity Statement 3

Increasing regional business movement to broader domestic and international markets may support regional economic growth opportunities which will enhance community resilience through economic diversification and create jobs (and population) growth	
Causes:	The development of a consolidation centre focused on SMEs in the Central West NSW region has the potential to utilise the improvements of Inland Rail to allow further economic diversification within the region by providing the opportunity to create further 'value add' industries and providing more competitive access to domestic and international markets.
Evidence of causes:	<p>Value-add Industries</p> <p>Value-adding includes any process or service in the supply chain that adds to or enhances the value of products to customers. Value-adding may include supplying new products or different varieties, changing presentation to meet market requirements, providing expertise and/or services and promotion and marketing activities to differentiate products.</p> <p>Regional Development Australia has undertaken a study within the Central West²³ which reviews current agricultural value adding trends and opportunities in Central West NSW, with particular focus on the categories of biotechnology, digital technology, processing and packaging, branding, and co-operation and collaboration.</p> <p>The study found that considerable growth demand expectations in middle class Asian markets, and various trade agreements with those regions, will create significant opportunities for Central West agricultural products, including premium pre-packaged cuts of meat and fresh, packaged or processed horticultural produce, which are key strengths of the region. Additionally, it was identified that processing weaknesses in the Central West NSW agricultural supply chain may present opportunities for some niche sectors.</p> <p>Value adding within the Central West would allow for farmers and agribusinesses to move from being 'price takers' to 'price makers'.</p> <p>Market access</p> <p>Inland Rail will provide a strategic infrastructure corridor along eastern Australia from Melbourne to Brisbane. It will connect to the national rail freight network and provide access to some of Australia's largest ports, including the Ports of Brisbane, Newcastle, Sydney and Kembla.</p> <p>Central West NSW's ability to attract new industry and investment largely depends on its ability to provide SMEs with efficient and reliable access to key exports destinations through an infrastructure that would facilitate a more efficient transport mode.</p>
Effects:	The ability for SMEs to access additional markets (both domestic and international), and providing the infrastructure required to support value add facilities in the region will likely result in increased production and resulting profits, which will be reinvested into the region and increase its attractiveness to current and future residents.
Evidence of effects:	<p>Current Employment Diversification</p> <p>Australian Bureau of Statistics (ABS) data from the August 2020 Labour Force Survey indicate that around 110,900 people were employed in the Central West region. The region accounts for 3% of total employment in NSW and 22% of all people employed in the NSW agriculture, forestry and fishing sector.²⁴</p> <p>Figure 11 provides an overview of the employment profile within the Central West region. Although agriculture is one of the most important sectors and employers in the region, jobs are shrinking in Central West NSW. If the region is to leverage the value adding opportunities afforded by the expected growth of the agricultural industry, the construction of a consolidation centre will improve the connectivity of existing producers and industry to Inland Rail and attract new industry and investing, thereby increasing economic growth and diversity in the region. Providing the proposed infrastructure in Central West NSW, employment may be stimulated, and this may heighten resident retention and/or attractiveness to new residents.</p>

²³ Regional Development Australia, *Value Adding to Agriculture in Central West NSW*

²⁴ The Department of Agriculture, Water and the Environment, *About my region – Central West New South Wales*

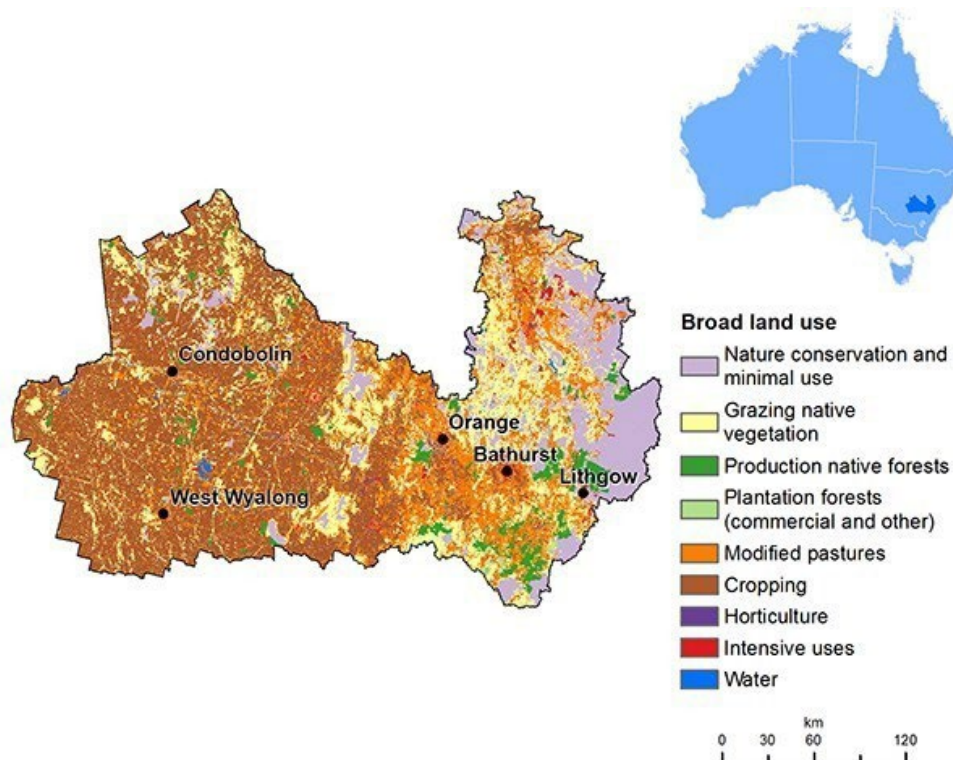
Figure 11 Employment industry profile, NSW - Central West region



Source: ABS 2016 Census Place of Work Employment (Scaled)

Agricultural land in the Central West region of NSW occupies 57,300 square kilometres, or 81% of the region. The most common land use by area is grazing modified pastures, which occupies 38,100 square kilometres or 54% of the Central West region of NSW.²⁵

Figure 12 Central west broad land usage



Source: Department of Agriculture, Water and the Environment – Land use and management. Updated 2019

Agricultural SMEs

Regional Development Australia defines Small to Medium Agrifood business with 'small' defined as employing fewer than 20 people and with an annual revenue of less than \$2 million and

'medium' as those with a revenue of over \$2 million and employing between 19 – 100 employees.

The Department of Agriculture, Water and the Environment found that around 39% of farms in the Central West region had an estimated value of agricultural operations (EVAO) between \$50,000 and \$150,000. These farms accounted for only 10% of the total value of agricultural operations in 2018–19. In comparison, 6% of farms in the region had an EVAO of more than \$1 million and accounted for an estimated 36% of the total value of agricultural operations in the Central West region in 2018–19.²⁶

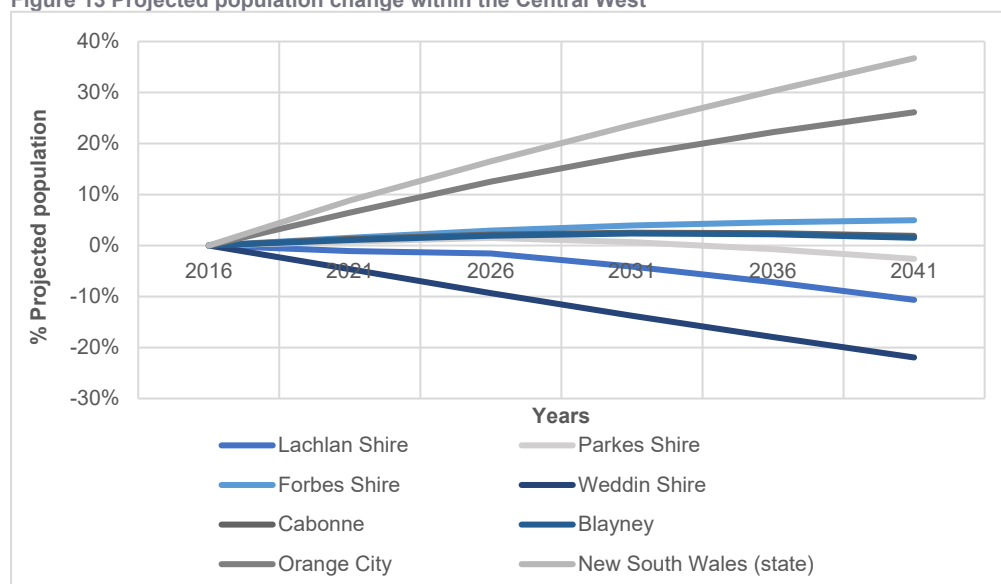
With agriculture making up the largest portion of employment by industry, accounting for the largest portion of land use within the Central West, and a large proportion of these enterprises being considered small, the development of facilities provides a significant opportunity to create supply chain resilience and/or further support diversification in the region.

Community resilience

Figure 13 provides an overview of the population forecast to 2041 for areas within the Central West region compared against those for NSW. The regions shown are in close proximity to the locations under investigation for the Proposal and do not account for the entirety of the Central West. It is noted that, with the exception of Orange, the population within the Central West is forecast to remain relatively stagnant or in some cases decline.

The development of Inland Rail and creating effective and efficient freight networks more broadly is important for the economic development and vitality of regional communities²⁷ and will in turn act as the impetus for regional growth.

Figure 13 Projected population change within the Central West



Source: NSW Government, Planning and Industry Development

Figure 14 and Table 4 provide an overview of the current employment profile for the Central West region as well as the median income in comparison to NSW and Australia. Although the employment profile largely follows the trend of both NSW and Australia, the median income is significantly lower.

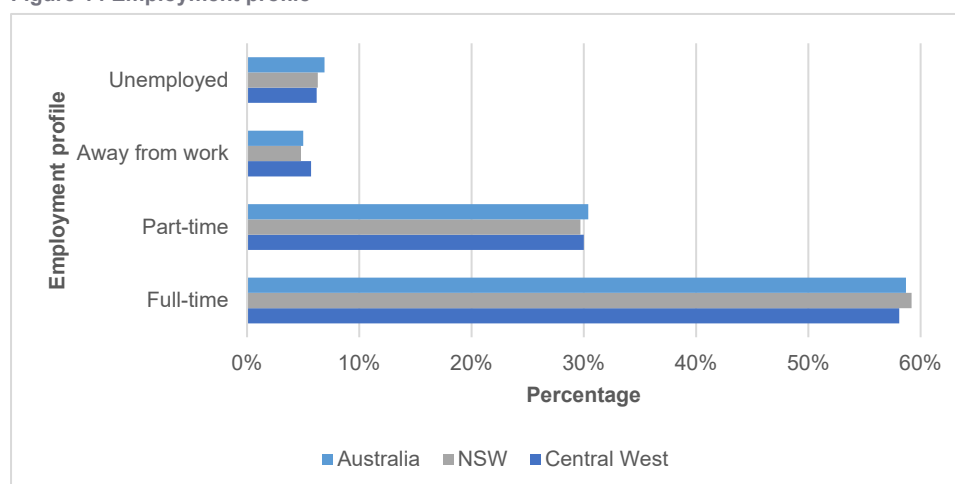
The realisation of supply chain efficiencies and facilitating the connection of SMEs to new markets through the consolidation centre and Inland Rail may in turn provide an increase in employment opportunities and increased incomes for the region (through higher returns and profits).

²⁵ The Department of Agriculture, Water and the Environment, *About my region – Central West New South Wales*

²⁶ The Department of Agriculture, Water and the Environment, *About my region – Central West New South Wales*.

²⁷ Inland Rail Business Case 2019, Page 7.

Figure 14 Employment profile



Source: ABS 2016 Census quick stats

Table 4 Median weekly household income: Central West, NSW and Australia

Region	Median weekly household income	Median annual household income
Central West ²⁸	\$1,166	\$60,632
NSW ²⁹	\$1,486	\$77,272
Australia ³⁰	\$1,438	\$74,776

Source: ABS 2016 Census quick stats

²⁸ ABS 2016 Census quick stats, Central West, 4

²⁹ ABS 2016 Census quick stats, NSW, 1

³⁰ ABS 2016 Census quick stats, Australia, 0

3. Strategic Fit

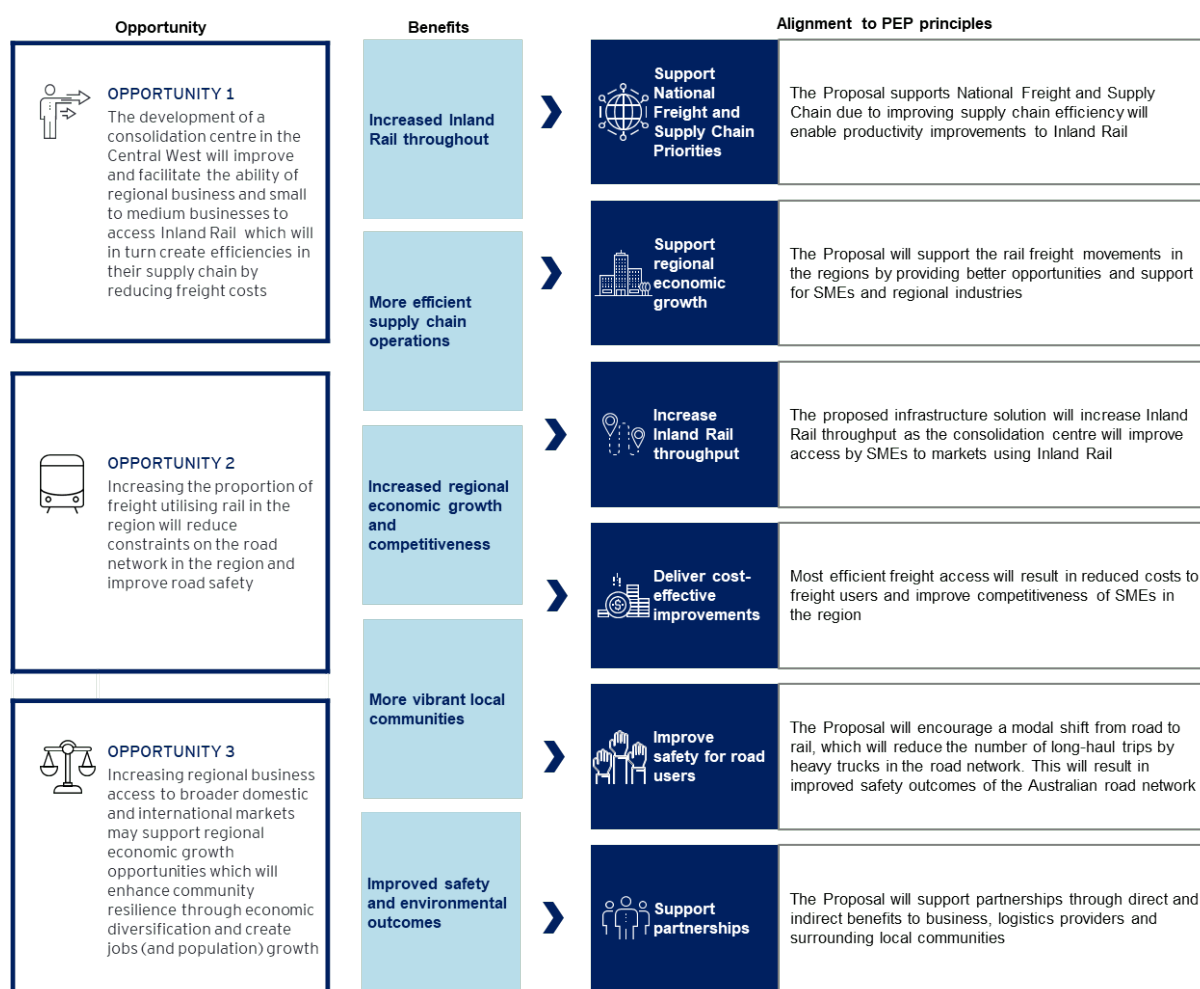
Key messages

- The strategic fit of the Proposal has been assessed against local, state and national economic development, transport and freight priorities and programs, as well the PEP principles.
- The Proposal alignment with the PEP principles is underpinned by its focus on improving supply chain efficiencies and providing better access to Inland Rail in the Central West NSW region.
- The problem and opportunity constraints addressed by this Proposal are strongly aligned with several PEP objectives, including supporting national freight and supply chain priorities, supporting regional economic growth, delivering cost-effective improvements, and increasing Inland Rail throughput.

3.1 Alignment with II Program Principles

The Proposal aligns and contributes to the achievement of local, state and national economic development, transport and freight priorities and programs. The Proposal involves the development of opportunities and solutions to improve the access to markets by SMEs in Central West NSW by leveraging Inland Rail. A description of the alignment between the Proposal and these policies and programs is displayed in Figure 15.

Figure 15 Alignment with II Program Principles



Source: EY

Addressing these challenges presents an opportunity to support long term growth and prosperity for the Central West region. This will result from supply chain efficiencies by making the best use of existing rail infrastructure and leveraging the investment in Inland Rail, which in turn supports regional economic development, resilience and increased investment.

This Proposal supports the PEP principles in the following ways:

Support National Freight and Supply Chain Priorities

The Proposal supports the goals of the National Freight and Supply Chain Priorities. One of the goals of the National Freight and Supply Chain Priorities is to improve the efficiency and international competitiveness of supply chains. The Proposal aligns with this principle as it will improve supply chain efficiencies which will enable productivity improvements to Inland Rail. The proposed infrastructure aims to promote the integration and efficiency of the connection between the Inland Rail line, SMEs and regional producers, thereby supporting the National Freight and Supply Chain Priorities.

Support Regional economic growth

The Proposal will contribute to supporting regional economic growth by increasing the efficiency of rail freight movements providing better opportunities and support for regional industries. The proposed infrastructure will improve freight efficiency and costs-savings for SMEs. These benefits will support regional economic growth by improving supply chains, creating and retaining jobs and attracting and retaining sustainable investments in the region.

Increase Inland Rail throughput

The development of a consolidation centre within the Central West region will provide opportunities for SMEs within the region to consolidate freight and access Inland Rail, which otherwise does not exist in the region. The Proposal will therefore promote a mode shift from road to rail and increase the throughput of Inland Rail.

Deliver cost-effective improvements to the national rail freight network through strategic investment

The Proposal will contribute to delivering cost-effective improvements to the national rail freight network through strategic investment. The proposed infrastructure will facilitate access to markets for SMEs in the Central West region, resulting in cost savings for freight users in the region.

Improve safety for road users

This Proposal will help to improve safety of road users through a greater incentive to use rail freight. The Proposal will encourage a modal shift from road to rail, which will reduce the number of long-haul trips by heavy trucks on the road network from the region to the Port of Brisbane, Melbourne, and to Sydney. This will result in improved safety outcomes for the Australian road network, including reducing the number of road incidents and crash costs.

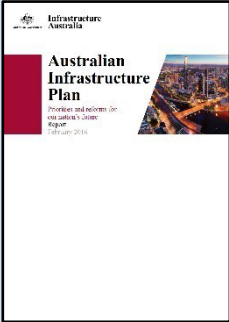
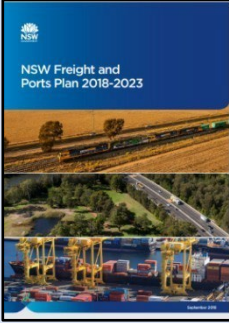
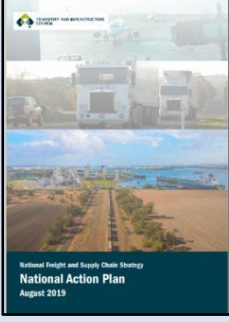
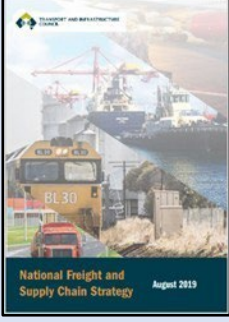
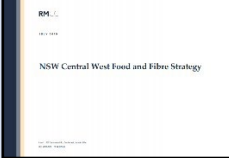
Support partnerships

The Proposal will support partnerships through direct and indirect benefits to business, logistics providers and surrounding local communities. The consolidation centre will provide local businesses the confidence to invest or expand current operations to utilise the improved access to Inland Rail. In addition, the consolidation centre will promote partnerships between SMEs through the realisation of efficiencies that can be gained through economies of scale and consolidation of freight.

3.2 Alignment with other policies and programs

The development of the Proposal has considered how it aligns and contributes to local, state and national economic development, transport and freight priorities and programs. A description of the alignment between the Proposal and these policies and programs is provided in Table 5.

Table 5 Proposal alignment with other policies and programs

Policy / Program	Description of how this Proposal aligns
	<p>Australian Infrastructure Plan (2016)</p> <p>The Plan sets out the infrastructure challenges and opportunities faced in Australia over the next 15 years. It provides a package of reforms focussed on improvement in, delivery and use of Australian infrastructure and assets.</p> <p>The Plan forecasts an 80% growth in national land freight between 2011 and 2031, with road freight the primary method. This growth will result in further stress on the current Australian road freight infrastructure. The project is aligned with the Australian Infrastructure Plan in that it seeks to address key constraints such as operational restrictions, train capacity and interoperability.</p>
	<p>NSW Freight and Ports Plan 2018-2023 (2018)</p> <p>NSW Freight and Ports Plan is a call to action for government and industry to collaborate on clear initiatives and targets to make the NSW freight task more efficient and safer so NSW can continue to move and grow. The Proposal aligns with the key strategic direction included in the Plan to increase the use of rail for the movement of passengers and freight.</p>
	<p>National Freight and Supply Chain Action Plan (2019)</p> <p>Freight Australia's Action Plan sets out a national focus on ensuring domestic and international supply chains are serviced by resilient and efficient key freight corridors, precincts and assets. It also identifies providing regional and remote Australia with infrastructure capable of connecting regions and communities to major gateways, through Inland Rail intermodal terminal planning. The Plan acknowledges that Inland Rail will be critical to connecting regional areas to key export markets.</p>
	<p>National Freight and Supply Chain Strategy (2019)</p> <p>The Strategy sets an agenda for coordinated and well-planned government and industry actions across all freight modes for the next 20 years and beyond. The Proposal aligns with the strategy of improving standardisation and interoperability across Australia's rail networks.</p>
	<p>NSW Central West Food and Fibre Strategy (2019)</p> <p>The Strategy document which sets out the strategies and priority actions to identify how the region can take advantage of value-added processing and/or high value intensive agriculture.</p>

3.3 Commercial and industry fit

The Inland Rail project has been designed to provide a dedicated Melbourne to Brisbane freight link that is fast and reliable at a competitive price. It is expected to boost regional economic growth and

drive national productivity.³¹ The proposed Inland Rail will travel through the Central West region, providing a potentially significant incentive for further infrastructure development opportunities in the region.

Inland Rail is expected to bring supply chain resilience to the region, which will benefit regional communities through economic growth and resilience. The Proposal aims to provide better access to SMEs from the Central West region to Inland Rail and subsequently increase access to domestic and international export markets. The Proposal will result in more efficient and safer commodity movement from the Central West region to Inland Rail, enhancing the reliability of transport and reducing operating costs for local producers. Overall, the Proposal will optimise freight efficiency and transport reliability, improve access to the Inland Rail for SMEs and unlock opportunities to access international markets.

³¹ *Central West NSW Regional Economic Analysis of the Potential Impact of the proposed Inland Rail*, RDA Central West and NSW Government, 2016.

4. Stakeholders

Key messages

- Due to the nature of the Proposal being broad and the Proponents representing the collective of Central West Councils, stakeholder engagement was undertaken in a staged approach.
- Initial consultation was undertaken with the relevant Councils in the Central West region as identified by the Proponents. Consultations with five Central West councils were conducted for this Gate 2 submission.
- Councils were supportive of investment in the region and facilitating the access for SMEs to utilise rail where possible, but it should be also supported by the demand analysis.
- The second stage of consultation included targeted discussions with SMEs in the Central West region for this Gate 2 submission.
- Support for the Proposal was mostly due to the expectation that the consolidation centre would provide the region with more options to access Inland Rail. Letters of support were provided by three stakeholders.
- Stakeholders varied in their preferred location for a consolidation centre. Two stakeholders would prefer the centre be built in Forbes, one preferred Parkes and another preferred Orange. Three stakeholders did not indicate a preferred location.
- Key barriers preventing SMEs from accessing rail were identified including cost effectiveness, service frequency, storage requirements, consignment volume and cost of change.
- Future consultation is recommended to focus on further engagement with SMEs within the region, and to be expanded to include existing and potential rail freight operators within the Parkes SAP.

This section provides an overview of key stakeholders identified and consulted with for the Proposal and a summary of its third-party support, should it be taken forward to implementation. Refer to Appendix C for the accompanying stakeholder consultation log.

4.1 Overview of stakeholder engagement

Due to the nature of the Proposal being broad (in terms of potential location for the options) and the Proponent representing the collective of Central West Councils, stakeholder engagement as part of this Proposal was undertaken in a staged approach.

Central West Council Consultations. Prior to the development of the ILM for the Proposal, relevant Councils within the Central West were identified by the Proponent and provided the opportunity for consultation. It is noted that the Central West Councils identified as part of the consultations form part of the Central West NSW Joint Organisation, a joint Proponent for the submission of this Study.

- The aim of this consultation was to:
 - Gain an understanding of the region and any potential area of market failure that the Proposal is seeking to address.
 - Identify potential SMEs in the region for further consultation.
 - Understand the region's priorities in relation to Inland Rail.
 - For each council to provide further relevant background information which may assist with the development of this Proposal.
- **Targeted consultations.** Targeted consultations with SMEs and other relevant organisations from across the Central West region were identified as part of the abovementioned consultation and ILM workshop for further consultation. The organisations identified represent a wide range of industries and locations across the Central West region. The purpose of this consultation was to further understand the barriers being faced by SMEs in the region to using rail as their primary mode for freight, and to identify their level of support for the Proposal.

The following section provides an overview of each stage of stakeholder consultation as well as the proposed next steps for future consultation, should the Proposal proceed.

4.2 Stakeholders identified

Initial consultation was undertaken with the relevant Councils in the Central West region as identified by the Proponents. Table 6 provides an overview of the key insights identified within the initial consultations.

Table 6 Initial Councils consulted

Stakeholder	Consultation overview
Parkes Shire Council	<p>Parkes is located in a strategically significant location for Australia's rail freight and is positioned at the intersection of the East West Line (connecting Sydney to Perth), and Inland Rail.</p> <p>Within the National Logistics Hub, Parkes is already home to multiple national freight providers including Pacific National, SCT, and Linfox. Some of these providers form part of other current II Program Proposals.</p> <p>Parkes is supportive of infrastructure investment in the region; however, it is considered well serviced in terms of freight networks and providers in the region. It is expected that if a market within the region can economically use Inland Rail, it is likely being explored by one of the current providers.</p> <p>It was recommended that consultation is not undertaken with the current operators in the region until future gates (subject to the Proposal proceeding) to avoid potential sensitivities regarding an additional intermodal being developed by Council, which could be seen as competition to private investment in the region.</p>
Forbes Shire Council	<p>Forbes Shire Council was contacted for consultation however, due to timing issues a meeting did not eventuate.</p> <p>Initial engagement with Forbes Shire Council indicated Council is supportive of investment in the region and facilitating the access for SMEs to utilise rail where possible.</p> <p>The Council also provided additional details regarding potential SMEs within the region for further consultation.</p>
Cowra Council	<p>Cowra Council is supportive of infrastructure investment in the region to assist SMEs to better access markets and improve supply chain efficiencies.</p> <p>Council has previously undertaken a study on the re-opening of the Blayney to Demondrille line³² (located parallel to the east of Inland Rail). The study identifies that the key outbound commodities in the region include mineral concentrates, coal, pulpwood, quarry product, grain, meat, wine, fruit and vegetables.</p> <p>Council identified that SMEs in the region typically send freight east to Sydney or Port Kembla. There were no market failures identified within the Cowra region that could be addressed by this Proposal, however Council noted that a successful outcome for this Proposal could be the development of a Consolidation Centre that provides SMEs more efficient access to Sydney.</p>
Lachlan Shire Council	<p>Lachlan Shire Council is supportive of rail infrastructure and supportive of encouraging a mode shift from road to rail, noting that Lachlan Council has the longest road network in NSW³³ which results in a significant maintenance cost burden resulting from truck use.</p> <p>Lachlan Shire Council is currently undertaking a separate II Program Proposal in Condobolin (approx. 100km west of Parkes) which is focusing on a similar outcome in the region. Council is therefore supportive of a consolidation centre; however, it has a preference for the facility to be located within Condobolin.</p> <p>Council is concerned that stakeholders in the region will experience consultation fatigue from several similar Proposals in the region.</p>
Orange City Council	<p>Orange City Council is supportive of infrastructure investment in the region to assist SMEs better access markets and improve supply chain efficiencies.</p>

³² <https://www.transport.nsw.gov.au/system/files/media/documents/2020/Cowra-Lines-Feasibility-Study-Executive-Summary.pdf>

³³ <https://www.lachlan.nsw.gov.au/f.ashx/lsc-asset-mgt-plan-transportation-roads-v11-june-2012.pdf>

Stakeholder	Consultation overview
	<p>It was advised that, due to the proximity of Orange to Sydney, most SMEs in the region generally export products to the Sydney market or export via Port Botany.</p> <p>It was noted that several SMEs in the region may have used rail previously and had bad experienced (either due to reliability, time or cost). Education is needed to re-build confidence and encourage use once Inland Rail is in operation.</p> <p>The Council identified several SMEs, who may benefit from the development of a consolidation centre within the region for either import or export uses, for further consultation.</p>
Cabonne Council	Cabonne Council was contacted for consultation as part of the Proposal; however, a meeting was unable to be scheduled.

The second stage of consultation within this Proposal included targeted discussions with SMEs and other relevant organisations in the region to further understand the barriers to using rail as their primary mode for freight, and to identify their level of support for the Proposal. During consultation with Councils (as detailed above) as well as the Proponents, there was strong concern regarding stakeholder consultation fatigue for SMEs within the region who have been previously engaged (in some cases several times) for other proposals within the II Program. In addition, it was identified that there would be greater benefit for this Gate 2 Study to focus stakeholder engagement on SMEs who have not previously been engaged.

It is recommended that broader targeted SME engagement be undertaken in Gate 3, including with those stakeholders who have been previously engaged for other proposals, should this Proposal proceed.

4.2.1 SMEs identified for consultation

An outline of SMEs including a description of their relationship to the Proposal and the proposed consultation approach going forward to assist the Gateway Assessment Process is provided in Table 7.

An overview of the known level of support (inclusive of financial and/or in-kind support) for the Proposal at the Gate 2 stage of the Study is also indicated in Table 7. Further information on the stakeholders consulted and the degree of financial support at this time is set out at Section 9 and Appendix C (Stakeholder Consultation) of this report.

Table 7 SMEs identified for consultation (white rows indicate stakeholders consulted within Gate 2)

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
Advanced Animal Nutrition	Headquartered in Forbes, NSW, Advanced Animal Nutrition is a family-owned business established in 2008, providing quality supplements to animal industries. Nutritional products focus on the beef and sheep industries.	Advanced Animal Nutrition's Adam Hoey and Territory Manager Jason Hoey were contacted several times for engagement. Although various meetings were organised, due to the extreme weather in the region during the time of this report, consultation was not completed. Further engagement with Advanced Animal Nutrition is recommended at Gate 3, should the Proposal proceed.	N/A	N/A
Blayney Wholesale Foods	Blayney Wholesale Foods is a food service wholesaler that distribute over 6,000 varieties of food service products to restaurants, pizzerias, cafes, hotels, pubs, clubs, caterers and more across the Central West and surrounding areas. Blayney Wholesale Foods is a SME located in Blayney and can provide insights on the barriers from accessing rail to access to new markets. Blayney Wholesale Foods own a rail siding and have their own freight company.	Blayney Wholesale Foods General Manager was engaged in a phone consultation. The company sees no benefit to its business from the Proposal as they currently operate their own siding to distribute their products. Further engagement with Blayney Wholesale Foods is not necessary.	Not supportive of the Proposal. No direct benefits to the business and does not believe there is sufficient demand in the region.	N/A
Canobolas Eggs	Canobolas Eggs is an egg manufacture located in Molong, in the Central West NSW region.	Attempts were made to consult Canobolas Eggs, but no response was received.	N/A	N/A

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
	Their product is distributed throughout the Central West region, Sydney and Canberra.			
Hassall Trading	<p>Hassall Trading is a family-owned business founded in 1926. The company has grown to be one of Australia's largest exporters of quality Australian raw and semi tanned leather for use in industries including fashion, sports, luxury and automotive globally. Leather, a by-product of the Australian meat industry, is sourced from processors with the best records for animal welfare and sustainability.</p> <p>The company has tanneries in six locations, regional and metropolitan, across NSW, Victoria and South Australia (SA).</p>	<p>The Director, Production Manager and Compliance Manager were engaged in an online meeting.</p> <p>The company is supportive of the Proposal and happy to be engaged in further consultations as required.</p> <p>Further engagement with Hassall Trading is recommended at Gate 3, should the Proposal proceed.</p>	<p>Supportive of the Proposal.</p> <p>If there are economic benefits, the company would look to use rail and the consolidation centre.</p>	Letter of support provided.
Hort Enterprises Pty Ltd	Hort Enterprises is a full-scale engineering company with strong links to the mining sector. It is located in five locations in the Central West: Orange, Mudgee, Dubbo, West Wyalong and Cobar.	<p>Attempts were made to consults Hort Enterprises Pty Ltd, but no response was received.</p> <p>Further engagement with the company is not recommended at Gate 3.</p>	N/A	N/A
Kebby & Watson Tichborne	<p>Kebby and Watson Tichbourne are a farming business (continuous cropping), located between Parkes and Forbes in the Central West. The company grows winter and summer crops – cereals, canola, pulses, sorghum and mungbeans.</p> <p>Understanding the flow of inputs and outputs to their business will assist in determining the demand and opportunities for rail freight and consolidation points across the region.</p>	<p>Kebby & Watson Tichborne was engaged in an online consultation for Gate 2.</p> <p>The company would like to be kept informed of the Proposal's progress and is happy to engage further as required.</p> <p>Further engagement with the company is recommended at Gate 3, should the Proposal proceed.</p>	Supportive of the Proposal.	The company's in-kind support is limited to discussions about the Proposal. Further detail will be requested in Gate 3 if the Proposal proceeds.
Manildra Group	Manildra Group is a family-owned business established in 1952 with the purchase of a flour mill in Manildra, in central west NSW. Manildra Group is 100% Australian owned and has grown	Manildra has been engaged in online meetings for other proposals. The information from these consultations was used as a foundation for this report, with specific information regarding the Central West	No direct benefits to the business.	N/A

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
	<p>to become a diverse agribusiness supplying Australian food and industrial products globally.</p> <p>The company has four flour mills located across the Australian wheatbelt and processes over one million metric tonnes of wheat each year. The company also owns and operates four grain storage sites in NSW at Manildra, Bellata, Moree, and Stockinbingal.</p> <p>Understanding the flow of inputs and outputs to the business will assist in determining the demand and opportunities for rail freight across the region.</p>	<p>Consolidation Centre taken from email correspondence with the company's National Transport and Logistics Manager.</p> <p>The company sees no benefits to its business from the Proposal.</p> <p>Further engagement with Manildra Group is not necessary. It is recommended to keep them informed about the progress of the Proposal.</p>		
Moxey Farms / Australian fresh milk holdings	<p>Moxey Farms is a milk producer located in Orange with over 220 employees who deliver dairy products throughout Australia.</p>	<p>Attempts were made to engage with Moxey Farms, but no response was received.</p> <p>Further engagement with the company is not recommended at Gate 3.</p>	N/A	N/A
Superbee	<p>Superbee Honey is a family-owned business that started in 1968 in Tanawha, Queensland. The company is Australia's leading privately owned manufacturer of pure Australian honey, royal jelly and propolis.</p> <p>The current owners purchased the company in 2005, and relocated to Forbes, NSW in 2008, allowing for smoother production times and reduced freight time between interstate hives. Around 40% of Australia's honey is sourced from across the Forbes region.</p>	<p>Superbee Honey's Director was engaged in an online consultation.</p> <p>The company is supportive of the Proposal and happy to be engaged in further consultations as required.</p> <p>Further engagement with Superbee Honey is recommended at Gate 3, should the Proposal proceed.</p>	<p>Supportive of the Proposal.</p> <p>If the cost is competitive, the company could look to send export and import freight to and from Melbourne and Brisbane.</p>	Letter of support provided

4.2.2 Other organisations identified for consultation

An outline of other organisations consulted including a description of their relationship to the Proposal and the proposed consultation approach going forward to assist the Gateway Assessment Process is provided in Table 8.

An overview of the known level of support (inclusive of financial and/or in-kind support) for the Proposal at the Gate 2 stage of the Study is also indicated in Table 8. Further information on the stakeholders consulted and the degree of financial support at this time is set out at Section 9 and Appendix C (Stakeholder Consultation) of this report.

Table 8 List of other organisations identified for consultation (white rows indicate stakeholders consulted within Gate 2)

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
Agribusiness Regional Development Association (ARDA)	<p>ARDA is a not-for-profit association of regional agricultural businesses working to build strong and sustainable regional communities.</p> <p>ARDA provides pathways for its members to develop international trade opportunities, leverage the digital economy and access new finance and investment streams.</p> <p>ARDA has a branch within the Central West and can provide insights on the barriers for SMEs from accessing rail to access new markets.</p>	<p>ARDA is supportive of infrastructure investment in the region to assist SMEs better access markets and improve supply chain efficiencies.</p> <p>ARDA is currently working with the Federal Government to educate regional agribusinesses on the benefits of regional collaboration and consolidation when accessing export markets.</p> <p>Whilst a preferred location was not provided, it was indicated that it should be placed in the area with the highest level of demand.</p> <p>ARDA should be kept informed throughout the development of the Proposal in future Gates.</p>	Supportive of the Proposal	N/A
Australian Rail Track Corporation (ARTC)	<p>ARTC is responsible for the delivery of the Inland Rail, in partnership with the private sector.</p> <p>Given the limited physical interface with Inland Rail (the Proposal assumes the use of existing intermodal facilities), the Proposal will not require close engagement with ARTC.</p>	<p>Due to the progression of the options in this report being location (town) specific rather than site specific, and the Preferred Option recommending the use of existing intermodal facilities rather than the development of additional standalone facilities, direct consultation with ARTC was not undertaken as part of Gate 2.</p> <p>It is recommended that consultation with ARTC be undertaken in Gate 3 (subject to the Proposal proceeding) to provide an update on the progression of, and lack of interface of the Proposal with ARTC assets.</p>	N/A	N/A

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
Linfox	<p>Linfox is Australia's largest privately-owned logistics company.</p> <p>Linfox works with some of the world's largest and most successful organisations, delivering food, resources and medicine across road and rail from an extensive network of warehouses and distribution centres.</p> <p>Linfox provides services in the Central West region and could be a potential operator of the proposed Consolidation Centre in the region.</p>	<p>It was agreed that Linfox would not be engaged as part of Gate 2 to avoid potential sensitivities regarding additional facilities being developed by Government in the Parkes SAP as this could be seen as competition to the previous investment undertaken by Linfox in the region.</p> <p>It is recommended that consultation with Linfox is undertaken in Gate 3, should the Proposal proceed.</p>	N/A	N/A
Orange Region Vignerons Association	<p>The Orange Region Vignerons Association is the representative body for the regions wine industry. The association's membership consists of viticulturalists, grape growers, cellar doors and others with an interest in the regions wine industry.</p>	<p>The Association's Chief Executive Officer and President were engaged in an online consultation.</p> <p>The Association is supportive of the Proposal and happy to be engaged in further consultation as required.</p> <p>Further engagement with the Association is recommended at Gate 3, should the Proposal proceed.</p>	<p>Supportive of the Proposal.</p> <p>In principle, the association is supportive of the Proposal if it is located in Orange, is easily accessible and easy to use (i.e. effective at moving product from one point to the next), and it is affordable (i.e. there are economic benefits) to freight product by rail to Brisbane and Melbourne.</p>	Letter of support provided
Pacific National	<p>Pacific National is the largest interstate rail freight carrier in Australia.</p> <p>Pacific National is Australia's leading intermodal freight and steel freight operator, eastern Australia's top carrier of regional exports, bulk goods, grain, and agricultural products, the largest transporter of coal in NSW, and the second-largest transporter of coal in Queensland.</p>	<p>It was agreed that Pacific National would not be engaged as part of Gate 2 to avoid potential sensitivities regarding additional facilities being developed by Government in the Parkes SAP as this could be seen as competition to the previous investment undertaken by Pacific National in the region.</p>	N/A	N/A

Stakeholder	Relevance and importance to this Proposal	Consultation overview	Indicated level of support	Evidence provided
	Pacific National operates in the Central West region within the Parkes SAP and could be a potential operator of the proposed Consolidation Centre in the region.	It is recommended that consultation with Pacific National is undertaken in Gate 3, should the Proposal proceed.		
SCT	<p>SCT is Australia's largest privately owned rail freight operating business in Australia. SCT has facilities in Brisbane, Parkes, Sydney, Melbourne, Adelaide and Perth.</p> <p>It is Australia's largest private rail freight operator, and operates the largest, most efficient, general freight trains - 1.8 kilometres long and weighing up to 6,000 tonnes.</p> <p>SCT operates in the Central West region within the Parkes SAP and could be a potential operator of the proposed Consolidation Centre.</p>	<p>It was agreed that SCT would not be engaged as part of Gate 2 to avoid potential sensitivities regarding additional facilities being developed by Government in the Parkes SAP as this could be seen as competition to the previous investment undertaken by SCT in the region.</p> <p>It is recommended that consultation with SCT is undertaken in Gate 3, should the Proposal proceed.</p>	N/A	N/A

4.3 Key themes identified

Key themes identified from stakeholder consultation were grouped into two areas: location preference and barriers for SMEs accessing rail. These themes are explored in further detail within the subsequent section.

Preferred location

Council consultation did not identify a preferred location, or a specific area of market failure for the infrastructure within the Proposal to address. It is noted however that several councils have similar Proposals being undertaken within the II Program. The Parkes SAP was identified as a potential candidate location, acknowledging the current Master Plan for the site has the provision for a third intermodal facility.

From the SMEs consulted, they varied in their preferred location for a consolidation centre. Two stakeholders (Hassall Trading and Superbee Honey) would like to see a consolidation centre built in Forbes, one preferred Parkes (Kebby and Watson Tichbourne), and another would like to see the centre built in Orange (Orange Region Vignerons Association). Two stakeholders (Manildra Group and Blaney Wholesale Foods) did not indicate a preferred location; they have their own rail siding and sites for consolidation of products, and the development of a consolidation centre as part of this Proposal would not benefit their businesses.

Demand analysis undertaken in Section 5 supports the comments identified by stakeholders. With regards to location, it was found that the largest beneficiaries of the consolidation centre are those organisations located near the centre. It is expected that supply chain efficiencies will form the basis for the preferred location rather than stakeholder support.

Barriers for SMEs accessing rail

Throughout consultation with SMEs, Orange Region Vignerons Association, and ARDA, perceived barriers which impact organisations from within the region from utilising rail were identified. The barriers are summarised below and where applicable, were further explored within the demand analysis undertaken in this Study (see Section 5).

- Cost effectiveness: Freight costs for rail need to be competitive when compared to road freight costs. If the costs were to be competitive, more companies would potentially look to utilise rail as part of their logistics systems.
- Service frequency: Road freight allows flexibility in terms of pickup and delivery timeframes. Stakeholders suggested a minimum of two services per week would be required to meet customer expectations.
- Storage requirements: Temperature control is critical for the transport of food and wine, something the Orange Region Vignerons Association said can be done cheaper with road freight compared to rail. To power trains and keep containers at constant temperatures increases costs considerably, which the businesses and their customers are not prepared to wear.
- Consignment Volume: Many SMEs operate a business model which relies on smaller, more frequent deliveries to multiple locations. Concerns were raised around the distribution of product and commodities following their arrival into Melbourne or Brisbane by rail. Stakeholders mentioned the need for containers to be unloaded and pallets trucked to a distribution depot, increasing the number of freight movements along the supply chain. In comparison, road transport allows for door-to-door sales, which reduces the handling of products from the time they are loaded to the time they are unloaded and delivered to customers.
- Cost of change: A lack of scale creates an expensive distribution model for SME producers that have been forced to adopt road transport to meet their own and customers' needs because of the flexibility, speed and reduced handling offered by road mode. Some SMEs are likely to recognise the rail mode for the distribution of their products for potential growth, but the complexity of logistics, cost of change, and the lack of expertise may lead to reluctance to shift to rail.

Additional information regarding the barriers identified by each SME is provided in the consultation logs located in Appendix C.

4.4 Next steps for stakeholder engagement

Further engagement at Gate 3 and Gate 4 is required to achieve deeper insights into the potential business and investment opportunities that could be unlocked if this Proposal proceeds.

Stakeholders recommended for consultation in future gates includes: include:

- Stakeholder engaged as part of this Study who supported the Proposal (Hassall Trading, Orange Region Vignerons Association, Superbee Honey, and Kebby & Watson Tichborne)
- Additional SME's within with Parkes region to validate the demand analysis and understand further support for the Proposal
- Existing and potential rail freight operators within the Parkes SAP including SCT, Pacific National, Linfox, and Qube to identify their sentiment towards the Proposal
- AQUIS to understand the potential for further non-infrastructure enablers that may support the Proposal
- Fertiliser importers to understand the potential to capture fertiliser as part of the facility.

5. Demand

Key messages

- Current freight demand (2021) is estimated to be between 2,160,000 and 4,012,000 tonnes per annum with an average of 3,089,000 tonnes per annum. The major commodities in the region that have been included in the catchment area include general freight, forestry and fertiliser.
- Future freight demand (2041) in the Central West catchment area is estimated to be between 3,099,000 and 4,649,000 tonnes per annum with an average of 3,874,000 tonnes per annum. Growth is assumed to follow Transport for NSW (TfNSW) long-term demand forecasting assumptions for commodities (refer to Section 5.3.1).
- The analysis has identified 279,400 tonnes of current (2021) potential SME freight. The current network demand consists of 83,200 tonnes of current rail freight (30% rail mode share) and 196,200 tonnes of current road freight (70% road mode share).
- Three demand scenarios were modelled, with scenarios varying in terms of demand and infrastructure assumptions for the consolidation facility:
 - Base Case Scenario – no changes.
 - Scenario 1 – provision of a consolidation facility in the Central West with access to an existing rail intermodal terminal.
 - Scenario 2 – provision of a consolidation facility in the Central West with access to an existing rail intermodal terminal and fertiliser consolidation infrastructure.
- The Base Case demand largely maintains the existing road and rail mode share, which includes Inland Rail. In the Base Case scenario, the medium future contestable freight demand in 2041 is 354,800 tonnes. The future network demand consists of 104,500 tonnes of rail freight (29% rail mode share) and 250,300 tonnes of road freight (71% road mode share).
- Scenario 1 – provision of a consolidation facility in the Central West with access to an existing rail intermodal terminal. Under Scenario 1, 47,000 tonnes of rail freight is expected to be capturable by the facility, with the medium future network demand (2041) consists of 151,500 tonnes of rail freight (43% rail mode share) and 203,300 tonnes of road freight (57% road mode share).
- Scenario 2 – provision of a consolidation facility in the Central West with access to an existing rail intermodal terminal and fertiliser consolidation infrastructure. Under Scenario 2, 132,000 tonnes of freight is expected to be capturable by the facility, with the medium future network demand (2041) consists of 236,500 tonnes of rail freight (67% rail mode share) and 118,300 tonnes of road freight (33% road mode share).
- Future network freight demand estimates consider potential modal shift of road freight as a result of Inland Rail. For this Proposal, this is estimated to be between 7,000 and 11,000 tonnes and, based on the Inland Rail construction timetable, is assumed to commence operations in 2028.

5.1 Current freight demand

Current freight demand is estimated to be between 2,160,000 and 4,012,000 tonnes per annum with an average of 3,089,000 tonnes per annum. The major commodities in the region that have been included in the catchment area include general freight, forestry and fertiliser.

5.1.1 Proposal catchment area

This project is to investigate barriers for SMEs access markets and identify logistical solutions by accessing the rail network, including consolidation of smaller shipments into sufficient scale to effectively use Inland Rail services.

The Central West region of NSW covers an area of 63,000 square kilometres and is home to 177,000 people. The catchment area covers 11 local government areas (LGAs) including:

- Bathurst
- Blayney
- Cabonne
- Cowra
- Forbes
- Lachlan
- Lithgow
- Oberon
- Orange
- Parkes
- Weddin

Some of volumes from the broader catchment are taken into consideration to the extent that is likely that they will make use of the pathways impacted by this Proposal. The Central West catchment is shown in Figure 16.

Figure 16 Central West Catchment Area



Source: george stanley consulting

The Proposal catchment area is based around the ABS Central West SA4 region and the following SA2 regions, which largely correspond to the LGA's identified above:

- Bathurst Region
- Oberon
- Condobolin
- Cowra
- Forbes
- Parkes Region
- Lithgow Region
- Blayney

- Orange Region

5.1.2 Freight activities

Freight generation in the Central West catchment area is dominated by agricultural production, such as mineral concentrates, grain and livestock. However, given the nature of the Proposal, these volumes have not been considered. The relevant freight generation activities surrounding the Proposal include forestry, food production, wine, meat and horticulture. Road transport is currently the mode of choice for these products, with the exception of some forestry moving by rail.

Freight attraction activities into the Proposal catchment area are dominated by general freight flows including food and non-food consumer goods, business inputs, farm inputs, bulk fuel and transport equipment and machinery. Road transport tends to be the mode of choice for these flows with rail transportation being limited by proximity of the freight generator (i.e. the organisations needing the freight services) to rail loading points.

There is also a significant intra-regional freight task associated with ex-farm movements of grains and livestock, distribution from local wholesalers to farms, commercial businesses and construction. As these flows tend to be of short distance and/or carry smaller consignments, they are also dominated by road transportation.

5.1.3 Production volumes

The Proposal is located in the Central West region in NSW. The existing rail-contestable freight task in the Proposal catchment area is primarily based on the production of broadacre grain and mineral concentrates. These volumes are currently serviced by a range bulk grain storage and handling sites and rail intermodal facilities at Blayney and North Parkes. These volumes are not considered for this Proposal.

Commodities considered for rail contestability in this Proposal are focused on smaller scale production and supply volumes that could consider rail based on product consolidation.

The ABS data has been reviewed for all 11 LGAs within the Central West and considered in the following ways:

- The LGAs to the east of Orange (Bathurst, Lithgow and Oberon) are not considered due to their proximity to Sydney (i.e. they are unlikely to go west to go east).
- Commodities that do not fit the SME brief (i.e. grain, mining, livestock, wool, fuel) has not been considered.
- It has been narrowed for freight that is being exported to Brisbane, Melbourne and Sydney excluding anything heading to the ACT.

Freight generator and receival volumes

The Proposal considers volumes that are traditionally more difficult to attract to rail given consignment sizes, distribution points and destinations.

In terms of the regional freight volumes, there is a balance between a freight generator and a freight receival location. In terms of freight generation, the area is a producer of:

- Food manufacture
- Wine
- Meat
- Horticulture
- Timber

In terms of freight received, the area is a receiver of:

- General freight
- Manufactured goods, including white goods and furniture
- Building materials
- Fertiliser for local agricultural production

An analysis of historical generation and receival volumes has been conducted for these commodities in order to establish average current volumes.

Table 9 Catchment area volumes (2021, tonnes)

Commodity	Low	Medium	High
General Freight & distribution	1,048,000	1,310,000	1,572,000
Food manufacture, animal products and edible commodities	158,000	197,000	237,000
Building materials	56,000	70,000	85,000
Chemicals and related products	98,000	123,000	147,000
Dairy	47,000	59,000	71,000
Fertiliser	312,000	390,000	467,000
Forestry	508,000	635,000	762,000
Horticulture	67,000	84,000	101,000
Manufacturing & manufactured goods	163,000	204,000	244,000
Meat	12,000	15,000	18,000
Total	2,469,000	3,087,000	3,704,000

Source: ABS SA2 and SA2 data and george stanley consulting

Rail-contestable freight

Rail contestable freight are volumes that have been identified as having a realistic possibility of being transported by rail.

Transport and logistic costs are often emphasised as the key factors behind freight modal choice. There are, however, a range of other factors including travel distances, product characteristics, consignment size, or pathway constraints that play a key role in whether freight volumes will realistically be transported by rail.

In general, road transport has a distinct competitive advantage over rail when:

- Consignments are relatively small (e.g. less than 40 tonnes) and suppliers/customers are requiring rapid fulfilment of orders.
- Products are perishable, fragile, or require rapid movement within a supply chain.
- Products are high value goods requiring security, product integrity, or welfare (such as live animals).

In addition, the movement of domestic freight volumes tends to favour road as movement by rail often requires additional road transport and handling costs. Most domestic consignments are to/from nodes not located on rail lines and, as such, will require a road journey at each end of the rail path (i.e. from origin to sending rail terminal, and from receiving rail terminal destination). As a result, direct door-to-door transportation via road may represent the lowest cost for the supplier or customer for domestic volumes.

Road transport also offers greater flexibility in moving consignments as trains travel according to fixed timetables and road avoids the need for additional coordination and transaction costs through intermediaries such as freight forwarders.

Rail transport tends to be most competitive for the movement of export consignments. As the train has direct access to port terminal infrastructure, the need for additional road movements at the destination is mitigated. This provides rail transport with a distinct competitive advantage over road freight within export shipments.

It is key to note that Inland Rail and the projects it enables will deliver an efficiency boost to rail and thereby increase the competitiveness of rail freight.

5.1.4 Current freight demand summary

Current freight demand is estimated to be between 2,160,000 and 4,012,000 tonnes per annum with an average of 3,089,000 tonnes per annum. The major commodities in the region that have been included in the catchment area include general freight, forestry and fertiliser. Table 9 presents low, medium and high estimates for current freight demand by commodity.

Table 10 Current freight demand (2021, tonnes)

Commodity	Low	Medium	High
Total catchment area volume	2,160,000	3,089,000	4,012,000

Source: george stanley consulting

5.2 Current network demand

Of the 279,400 tonnes of identified current contestable freight demand, the current network demand consists of 83,200 tonnes of current rail freight (30% rail mode share) and 196,200 tonnes of current road freight (70% road mode share). A detailed analysis of the freight task by mode is presented in the following sections.

5.2.1 Freight task

The current freight task for the Central West catchment area has been estimated at 3,089,000 tonnes per annum. The volume includes inbound and outbound volumes to the catchment area.

The majority of the volume is transported by road accessing Sydney markets and export ports. Rail currently services timber and food/animal products for export.

Based on the existing supply chains, the contestable freight task has been estimated at 280,000 tonnes in 2021.

5.2.2 Road freight

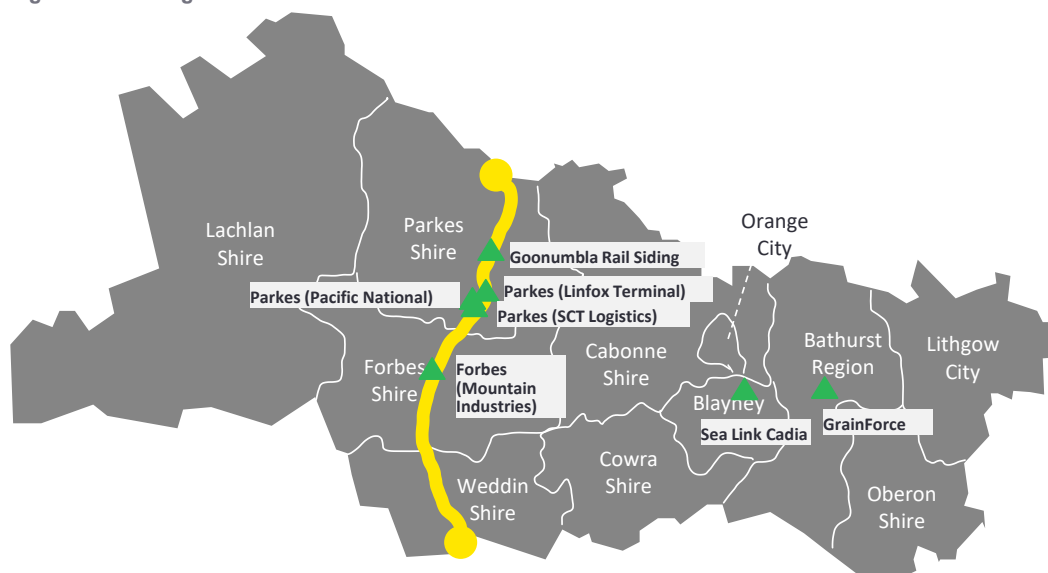
The region is currently dominated by road freight transport based on the commodities being transported. Most of the road freight flows in the region will not be contestable by rail due to travel distances, product characteristics, consignment size, or pathway constraints.

The total contestable road transport task has been estimated at 196,200 tonnes per annum. The major component of the contestable road freight is general freight and food products which are transported to or from Sydney. Fertiliser is transported to the region by road from Newcastle.

5.2.3 Rail freight

The Central West region is currently well serviced by rail as detailed in Figure 17.

Figure 17 Existing intermodal terminal facilities in the Central West



Source: EY

Rail in the total catchment area is mostly dominated by grain and mineral concentrates. The grain is moved to Port Kembla for export in bulk or in containers to Port Botany. Domestic grain is transported by rail to the Manildra facility. Mineral concentrates are moved from Parkes and Blayney to Port Kembla for export via containerised services.

Existing rail services are operated through intermodal terminals located in Parkes by SCT Logistics and Pacific National. These are interstate intermodal services connecting to interstate capitals including Brisbane, Melbourne, Perth and Adelaide.

In terms of contestable freight, existing containerised services are run from Bathurst to Port Botany for timber and food/animal products for export. The export trains will typically operate using 40 wagons with an 1,800 tonne payload.

5.2.4 Current network freight demand summary

Estimation of future network freight demand requires reconciliation of the production volumes within the catchment area with the current freight task. Based on the current volumes identified in the catchment area, timber and food/animal product manufacturing is the dominant commodity which is typically moved by rail from Bathurst facilities to Port Botany.

All other contestable volumes, including general freight, fertiliser, food production is transported by road, with the majority of this volume being moved to Sydney.

Based on this analysis, Table 10 presents an estimate of current low-medium-high network freight volumes by mode and origin and destination.

Table 11 Current network freight demand (2021, tonnes p.a.)

Derived headline volumes for modelling purposes	Low	Medium	High
Non contestable freight	2,245,300	2,809,600	3,370,900
General Freight & distribution	34,000	42,000	50,000
Food manufacture, animal products and edible commodities	52,800	65,700	78,700
Building materials	13,000	16,000	19,000
Fertiliser	53,000	66,000	79,000
Forestry	50,800	63,500	76,200
Horticulture	7,000	9,000	11,000
Manufacturing & manufactured goods	14,000	17,000	21,000
Wine	100	200	200
Contestable freight tonnes	224,700	279,400	335,100
Analysis of road rail volumes by O-D pair	Low	Medium	High
Rail - Central West - Port Botany	66,600	83,200	99,900
Road - Central West - Sydney	89,290	110,580	132,680
Road - Central West - Brisbane	7,905	9,810	11,760
Road - Central West - Melbourne	7,905	9,810	11,760
Road - Central West - Newcastle	53,000	66,000	79,000

Source: george stanley consulting

Of the 279,400 tonnes of identified current contestable freight demand, the current network demand consists of 83,200 tonnes of current rail freight (30% rail mode share) and 196,200 tonnes of current road freight (70% road mode share).

5.3 Future freight demand

Future freight demand in the Central West catchment area is estimated to be between 3,099,000 and 4,649,000 tonnes per annum with an average of 3,874,000 tonnes per annum. Growth is assumed to follow TfNSW long-term demand forecasting assumptions for commodities.

At this stage, induced demand, in terms of changes in industry development directly attributable to the Proposal is not expected to be material. As the Proposal is incremental to Inland Rail, it is unlikely that the Proposal will generate any induced demand that is not already 'unlocked' by the Inland Rail

project. However, the Proposal is being developed to change the transport patterns of existing commodity volumes through the catchment area. This is applicable to all options being currently explored as it has been assumed for the purposes of this analysis that none of these are expected to unlock further development or new industries to significantly increase freight demand within the catchment.³⁴

In addition, differences between Proposal options are not judged to be significant enough to warrant different catchment demand scenarios at this stage. As such, future catchment freight demand is assumed to be the same for both the Base and Project Cases. It is also noted that the consolidation facility capturable demand as noted within the Project Case scenarios relate to the Preferred Option – Parkes. This assumption will be explored and tested further under Gates 3 and 4.

Future investment may lead to increased regional demand

There is potential for further investment opportunities to induce further demand as the development of Inland Rail is expected to increase investment in value-added operations along the Inland Rail corridor.

A public commitment to a seamless connection would enhance the attractiveness of the Central West region as a location for investment in value-added operations as private investors take advantage of the proximity to safe, reliable and efficient freight transport. As such, increased commitment to infrastructure investment could incentivise regional investment and encourage business decisions to grow or relocate to the region. This has not been included in this demand analysis for Gate 2 given the level of uncertainty.

Infrastructure investment and connectivity with Inland Rail in other regions is stimulating regional development and growth, such as the establishment of Special Activation Precincts. Therefore, increased investment in infrastructure in the Central West region and the Parkes SAP would allow consideration of businesses growth and connectivity strategies as they plan to possibly grow, establish or relocate businesses to the new supply chain configuration following Inland Rail, consequently inducing further demand within the region.

5.3.1 Growth in current freight demand

The current commodity freight demand is assumed to grow as per TfNSW long-term demand forecasting assumptions. The growth assumptions by commodity include:

- General Freight & distribution: 1.0% p.a.
- Food manufacture, animal products and edible commodities: 1.3% p.a.
- Building materials: 1.2% p.a.
- Chemicals and related products: 1.3% p.a.
- Dairy: 1.1% p.a.
- Fertiliser: 1.3% p.a.
- Forestry: 1.1% p.a.
- Horticulture: 1.5% p.a.
- Manufacturing & manufactured goods: 1.3% p.a.
- Meat: 2.6% p.a.
- Wine: 2.3% p.a.

The following table provides low, medium and high forecasts for commodities in the catchments in 2041.

Table 12 Future freight demand (2041, tonnes)

Commodity	Low	Medium	High
General Freight & distribution	1,279,000	1,598,000	1,918,000
Food manufacture, animal products and edible commodities	205,000	255,000	307,000

³⁴ In the longer-term, Inland Rail and this Proposal may be able to influence supply-chains, leading to broader demand impacts that have not been quantified at this stage. While new industries may arise as a result of the Proposal, the level of uncertainty around this is significant enough to exclude these volumes from this assessment. This assumption may be relaxed further in Gates 3 and 4 as more information becomes as available.

Commodity	Low	Medium	High
Building materials	71,000	89,000	108,000
Chemicals and related products	127,000	159,000	190,000
Dairy	58,000	73,000	88,000
Fertiliser	404,000	505,000	605,000
Forestry	632,000	790,000	948,000
Horticulture	90,000	113,000	136,000
Manufacturing & manufactured goods	211,000	264,000	316,000
Meat	20,000	25,000	30,000
Wine	2,000	3,000	3,000
Total catchment area volume	3,099,000	3,874,000	4,649,000

Source: george stanley consulting

5.3.2 Future freight demand summary

Future freight demand in the Central West catchment area is estimated to be between 3,099,000 and 4,649,000 tonnes per annum with an average of 3,874,000 tonnes per annum. As previously mentioned, no induced demand is directly attributable to the Proposal, so these estimates are the basis for future network demand under “business as usual” conditions and the Proposal. Table 12 presents low, medium and high estimates for future freight demand by catchment area.

Table 13 Future freight demand (2041, tonnes)

Catchment area	Low	Medium	High
Central West Catchment Area	3,099,000	3,874,000	4,649,000

Source: george stanley consulting

5.4 Future network demand

The Base Case Scenario demand maintains the existing road and rail mode share, which includes Inland Rail. In the Base Case Scenario, the medium future contestable freight demand in 2041 is 354,800 tonnes. The future network demand consists of 104,500 tonnes of rail freight (29% rail mode share) and 250,300 tonnes of road freight (71% road mode share).

Scenario 1 provides site and operational efficiencies at a consolidation facility in Parkes (the Preferred Option). Under Scenario 1, the medium future network demand consists of 269,800 tonnes of rail freight (76% rail mode share) and 85,000 tonnes of road freight (24% road mode share).

Scenario 2 provides site and operational efficiencies at a consolidation facility and fertiliser storage and handling infrastructure in Parkes (the Preferred Option). Under Scenario 2, the medium future contestable network demand consists of 354,800 tonnes of rail freight (100% rail mode share for contestable freight tonnes).

As outlined in Section 5.3, the analysis to date indicates that induced demand directly attributable to the Proposal is not expected to be material.

Future network freight demand estimates consider potential modal shift of road freight as a result of Inland Rail. For this Proposal, this is estimated to be between 20,000 and 30,000 tonnes and based on the Inland Rail construction timetable, is assumed to commence in 2027.

5.4.1 Pathways and modal cost analysis

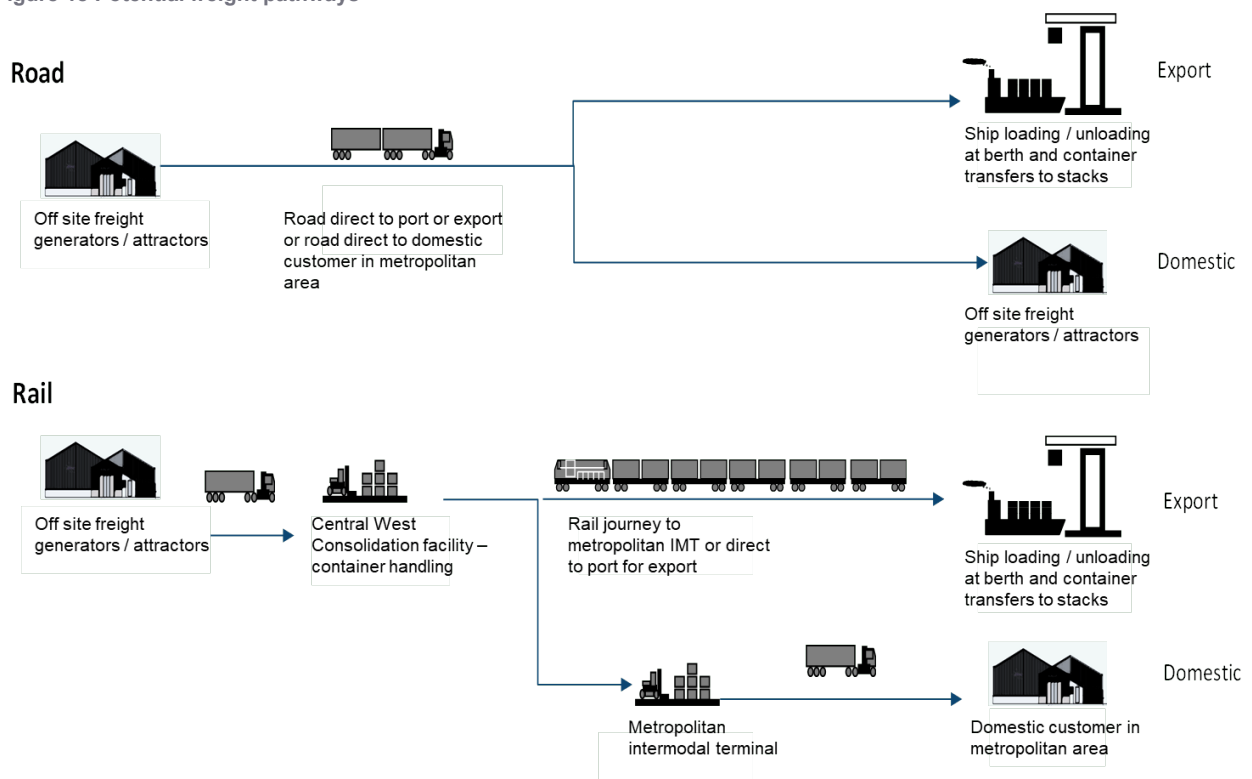
Future network freight demand, through more efficient and updated supply chain pathways, will be shaped by Inland Rail as well as this Proposal. As the Base Case for this Proposal includes Inland Rail, estimates of future network freight demand need to consider the impact that Inland Rail may have on the origin-destination and modal choice of freight flows alongside the impact attributable to this Proposal.

At present, the contestable commodities that have been identified for the Proposal to and from Central West use the following supply chain paths:

- Timber and food/animal products transported to Port Botany by rail.
- General freight and commodities transported to/from Sydney by road.
- General freight and commodities transported to/from Brisbane and Melbourne by road.
- Fertiliser transported from Newcastle by road.

An analysis of generalised road and rail costs provide insights on the comparative cost of these new pathways to key market destinations and can be used to assess their likelihood of attracting freight flows from other destinations and/or modes.

Figure 18 Potential freight pathways



Source: george stanley consulting

In the future, with the development of the Central West consolidation facility, the commodities to and from Central West will use the following supply chain paths:

- Timber and food/animal products transported to Port Botany by rail.
- General freight and commodities transported to/from Sydney by rail.
- General freight and commodities transported to/from Brisbane and Melbourne by rail.
- Fertiliser transported from Newcastle by rail.

It should be noted that transporting fertiliser by rail to a Central West consolidation facility would require the re-establishment of rail infrastructure at fertiliser facilities at the Port of Newcastle and a change in fertiliser business practices. Currently, fertiliser companies do not pay for transport of product. The purchaser of the fertiliser currently organises and pays for transport.

The generalised freight cost analysis is based on industry insights and inputs for distance, train length, mass, and travel time. Key cost components include labour costs, maintenance, fuel, network access, rollingstock capex and finance, and operating costs. Unit cost parameters are sourced from TfNSW.

Table 13 presents the results of the pathway and modal cost analysis for each of the three potential Central West consolidation sites – Parkes, Forbes and Orange. The table shows the road and rail cost comparison for delivery to a domestic Intermodal Terminal (IMT) and port in Sydney, Melbourne and Brisbane. The analysis identifies the supply chain paths that result in a rail cost advantage.

Table 14 Pathway and modal cost analysis (\$ per tonne)

Sydney				Domestic location		Port location	
Parkes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	60.5	46.7	66.2	5.70	Rail	19.51	Rail
Forbes	74.2	60.4	69.0	-5.24	Road	8.56	Rail
Orange	87.9	74.1	52.1	-35.74	Road	-21.93	Road
Forbes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	76.3	62.5	66.2	-10.16	Road	3.64	Rail
Forbes	73.1	59.3	69.0	-4.07	Road	9.74	Rail
Orange	94.4	80.6	52.1	-42.26	Road	-28.46	Road
Orange Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	79.2	65.3	66.2	-12.97	Road	0.84	Rail
Forbes	83.6	69.8	69.0	-14.57	Road	-0.76	Road
Orange	62.2	48.4	52.1	-10.08	Road	3.73	Rail
Melbourne - with Inland Rail				Domestic location		Port location	
Parkes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	80.2	66.4	105.4	25.20	Rail	39.00	Rail
Forbes	93.9	80.1	101.3	7.39	Rail	21.20	Rail
Orange	107.6	93.8	112.6	5.04	Rail	18.85	Rail
Forbes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	91.8	78.0	105.4	13.56	Rail	27.36	Rail
Forbes	88.5	74.7	101.3	12.79	Rail	26.59	Rail
Orange	109.9	96.1	112.6	2.75	Rail	16.55	Rail
Orange Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	118.8	105.0	105.4	-13.39	Road	0.41	Rail
Forbes	123.2	109.4	101.3	-21.85	Road	-8.05	Road
Orange	101.9	88.1	112.6	10.78	Rail	24.59	Rail
Brisbane - with Inland Rail				Domestic location		Port location	
Parkes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	105.7	91.9	136.2	30.54	Rail	44.34	Rail
Forbes	119.4	105.6	140.6	21.20	Rail	35.00	Rail
Orange	133.1	119.3	139.2	6.08	Rail	19.88	Rail
Forbes Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	121.5	107.7	136.2	14.67	Rail	28.47	Rail
Forbes	118.3	104.5	140.6	22.37	Rail	36.18	Rail
Orange	139.6	125.8	139.2	-0.44	Road	13.36	Rail
Orange Consolidation Facility	Total Rail Cost - Domestic	Total Rail Cost - Export	Total Road Cost from Production	Road-Rail Difference	Cost advantage	Road-Rail Difference	Cost advantage
Parkes	144.3	130.5	136.2	-8.06	Road	5.75	Rail
Forbes	148.7	134.9	140.6	-8.05	Road	5.76	Rail
Orange	127.3	113.5	139.2	11.82	Rail	25.62	Rail

Source: george stanley consulting

The analysis provides the following outcomes:

- Parkes has the most rail positive outcomes for domestic and export supply chains costs Sydney-Melbourne-Brisbane destinations followed by Forbes.
- Domestic rail from Parkes becomes cost competitive if the facility is located in the Parkes SAP and in the proximity of an existing intermodal terminal.
- Although rail shows positive supply chain cost results for Melbourne and Brisbane movements, the overall transport costs are between \$40 and \$80 a tonne more expensive than Port Botany. An exporter will prefer to move commodities via Sydney.
- Rail has between 3 to 5 more components to the supply chain compared to road. As a result, the cost differential between road and rail needs to be substantial to encourage mode switching.
- Road provides flexibility in terms of delivery locations and times, while rail is timetabled and has destinations at set IMTs.
- The Orange location is impacted by a longer distance truck movement to get to a rail IMT.
- The SMEs in Orange are negatively impacted by needing to move west to Parkes or Forbes before moving east by rail to Sydney. Conversely, SMEs in Parkes and Forbes are negatively impacted by moving east to Orange before moving west (then North-South) for Brisbane and Melbourne services.

As noted within Section 6.7.4 the options analysis identified Option 1 (Parkes) as the highest performing option due supply chain efficiencies and complexity, risk, cost and deliverability. Supply chain cost analysis identified the most beneficial location for a consolidation centre in terms of economic efficiencies is in Parkes, specifically within the Parkes SAP. Consequently, the future network freight demand scenarios relate to the Parkes location.

5.4.2 Future network freight demand summary

Based on the analysis provided in previous sections, three demand scenarios were modelled and summarised in the tables below. These scenarios vary in terms of demand and infrastructure assumptions for the Central West consolidation facility located in Parkes (the Preferred Option as described in Section 6). The scenarios modelled include:

- Base Case Scenario – no changes.
- Scenario 1 – provision of a consolidation facility in Parkes with access to an existing rail intermodal terminal.
- Scenario 2 – provision of a consolidation facility in the Parkes with access to an existing rail intermodal terminal and fertiliser consolidation infrastructure.

The Base Case Scenario demand maintains the existing road and rail mode share with growth in demand as detailed in Section 5.3. In the Base Case Scenario, the medium future contestable freight demand in 2041 is 354,800 tonnes. The future network demand consists of 104,500 tonnes of rail freight (29% rail mode share) and 250,300 tonnes of road freight (71% road mode share).

Table 15 Base Case demand outcomes (2041)

Derived headline volumes for modelling purposes	Low	Medium	High
Non contestable freight	2,813,100	3,519,200	4,284,200
General Freight & distribution	41,000	51,000	61,000
Food manufacture, animal products and edible commodities	68,500	85,500	101,700
Building materials	17,000	20,000	24,000
Fertiliser	69,000	85,000	102,000
Forestry	63,200	79,000	94,800

Derived headline volumes for modelling purposes	Low	Medium	High
Horticulture	9,000	12,000	15,000
Manufacturing & manufactured goods	18,000	22,000	27,000
Wine	200	300	300
Contestable freight tonnes	285,900	354,800	425,800
Analysis of road rail volumes by O-D pair	Low	Medium	High
Rail - Central West - Port Botany	83,700	104,500	125,500
Road - Central West - Sydney	112,980	140,270	168,270
Road - Central West - Brisbane	10,110	12,515	15,015
Road - Central West - Melbourne	10,110	12,515	15,015
Road - Central West - Newcastle	69,000	85,000	102,000

Source: george stanley consulting

Scenario 1 provides site and operational efficiencies at a Central West consolidation facility.

Under Scenario 1, the medium future network demand consists of 151,500 tonnes of rail freight (43% rail mode share) and 203,300 tonnes of road freight (57% road mode share). Consolidation facility capturable rail tonnes uses the pathway supply chain cost analysis, shown in Table 15, to identify the proportion of contestable volumes that could use the proposed facility.

Table 16 Scenario 1 demand outcomes (2041)

Derived headline volumes for modelling purposes	Low	Medium	High
Non contestable freight	2,813,100	3,519,200	4,223,200
General Freight & distribution	41,000	51,000	61,000
Food manufacture, animal products and edible commodities	68,500	85,500	101,700
Building materials	17,000	20,000	24,000
Fertiliser	69,000	85,000	102,000
Forestry	63,200	79,000	94,800
Horticulture	9,000	12,000	15,000
Manufacturing & manufactured goods	18,000	22,000	27,000
Wine	200	300	300
Contestable freight tonnes	285,900	354,800	425,800
Consolidation facility capturable rail tonnes (Preferred Option - Parkes)	38,000	47,000	57,000
Analysis of road rail volumes by O-D pair			
Rail - Central West - Port Botany	115,917	144,342	173,912
Rail - Central West - Brisbane	2,891	3,579	4,294
Rail - Central West - Melbourne	2,891	3,579	4,294
Road - Central West - Sydney	80,763	100,428	119,858
Road - Central West - Brisbane	7,219	8,936	10,721
Road - Central West - Melbourne	7,219	8,936	10,721
Road - Central West - Newcastle	69,000	85,000	102,000

Source: *george stanley consulting*

Scenario 2 provides site and operational efficiencies at a Central West consolidation facility and fertiliser storage and handling infrastructure.

Under Scenario 2, the medium future network demand consists of 236,500 tonnes of rail freight (67% rail mode share) and 118,300 tonnes of road freight (33% road mode share).

Table 17 Scenario 2 demand outcomes (2041)

Derived headline volumes for modelling purposes	Low	Medium	High
Non contestable freight	2,813,100	3,519,200	4,223,200
General Freight & distribution	41,000	51,000	61,000
Food manufacture, animal products and edible commodities	68,500	85,500	101,700
Building materials	17,000	20,000	24,000
Fertiliser	69,000	85,000	102,000
Forestry	63,200	79,000	94,800
Horticulture	9,000	12,000	15,000
Manufacturing & manufactured goods	18,000	22,000	27,000
Wine	200	300	300
Contestable freight tonnes	285,900	354,800	425,800
Consolidation facility capturable rail tonnes (Preferred Option - Parkes)	107,000	132,000	159,000
Analysis of road rail volumes by O-D pair			
Rail - Central West - Port Botany	115,917	144,342	173,912
Rail - Central West - Brisbane	2,891	3,579	4,294
Rail - Central West - Melbourne	2,891	3,579	4,294
Rail - Central West - Newcastle	69,000	85,000	102,000
Road - Central West - Sydney	80,763	100,428	119,858
Road - Central West - Brisbane	7,219	8,936	10,721
Road - Central West - Melbourne	7,219	8,936	10,721

Source: *george stanley consulting*

Table 18 provides a summary of the consolidation facility capturable tonnes under the Preferred Option (Parkes), based on each scenario presented within this section and each rail origin-destination pair.

Table 18 Consolidation facility capturable rail tonnes – Parkes (2041, medium)

Rail O-D Pair captured	Scenario 1 (tpa)	Scenario 2 (tpa)
Rail - Central West - Port Botany	39,842	39,842
Rail - Central West - Brisbane	3,579	3,579
Rail - Central West - Melbourne	3,579	3,579
Rail - Central West - Newcastle	0	85,000
Totals	47,000	132,000

Source: *george stanley consulting*

5.5 Key assumptions and reliability of estimates

The freight demand estimates were derived from publicly available datasets, project specific reports and insights from proponents and stakeholders, together with freight market knowledge and prior analysis by *george stanley consulting*.

Freight demand estimates presented in this Proposal are focused predominantly on key commodities that represent the majority of volumes produced and moved to, from and within the defined Proposal catchment. Minor or non-contestable commodities are acknowledged but not considered as part of a quantitative assessment. Where appropriate and/or when a change of production trends is likely to affect future freight demand estimates these commodities will be investigated further if the Proposal proceeds to subsequent Gates.

Estimates are synthesised from freight and non-freight (economic) metrics using generalised modelling to form a view of the regional freight task. The modelling reflects transport flows between nodes and transfers through nodes. These transport flows have been inferred from a number of publicly available data sources, including the ABS, as well insights provided by key freight generators and attractors.

Existing data, however, can be incomplete or inconsistent. For example, ABS data for agricultural production at smaller geographies (e.g. SA2 level) is only available every 5 years with the latest release being 2016. While this data is not recent, it has been correlated with trends observed within larger geographies (e.g. SA4 level), as more recent data is available at this level. Moreover, production trends generally follow climatic conditions unless a major event changes production patterns, as such, data is further contrasted against other information provided by the Proponents and/or insights collected from stakeholder consultations.

In the same manner, data on freight movements, which dates back to 2014, has also been contrasted with information provided by the Proponents and other sources such as State Transport Departments, ARTC and other stakeholders, as appropriate.

Specific to this Proposal, current and forecast freight demand is influenced by:

- Stakeholder consultation.
- Commodity prices and supply choices to domestic and export markets.
- Seasonality and variability in interregional transfers to balance product supply and localised demand; for example, ad-hoc interstate supply of grains to feedlots affected by drought conditions.
- Level of competition between marketers, storage and handling, and transport operators (including modal competition).

The accuracy of the freight forecasts is therefore affected by data limitations including:

- Data aggregated across wider geographic areas.
- Reporting intervals over non-consecutive years or periods affected by recent drought episodes.
- Freight data sets dating back to 2013.
- Reluctance of freight operators to provide data deemed to be commercially sensitive.
- The need for the delivery team (*EY, george stanley consulting*) to develop proxy freight volumes associated with the Proposal.

Confidence in the forecast methodology is developed by recognising that:

- Variability in freight tonnage is generally mitigated once the estimates are converted from tonnes p.a. to trips per day by road or rail.
- A range of “floor-to-ceiling” estimates are used to test the range of transport outcomes relevant to the Proposal, namely the forecast number of daily train movements.

Updates and/or changes to the inputs and information on which the demand forecasts have been based, will result in changes to the estimates. However, changes to demand forecasts, including

induced demand, are expected to affect all options equally and are not expected to materially impact the options analysis or the selection of the Preferred Option.

6. Options Identification and Assessment

Key messages

- The aim of this Proposal is to identify and assess a range of possible options to facilitate the ability of regional business and SMEs to access Inland Rail.
- A consolidation centre was identified as a potential infrastructure solution whereby many suppliers deliver goods directly to the consolidation centre, where it is stored and combined with other freight within the facility before being transported to the next destination.
- Several non-infrastructure solutions such as education and potential digital solutions for SMEs were identified as an alternate to the infrastructure solution.
- Three potential locations were identified within the Central West region as options for the development of the consolidation centre. Whilst specific site locations have not been identified within Gate 2, the focus of the options assessment within the Study is identifying the preferred location and infrastructure technical solution to proceed for further analysis. The following Options were identified and assessed against the Base Case:
 - Base Case: 'do nothing' scenario where the Proposal is compared only against currently committed / funded freight handling facility projects in the region and existing rail and road transport options.
 - Option 1: A consolidation centre in Parkes.
 - Option 2: A consolidation centre in Forbes.
 - Option 3: A consolidation centre in Orange.
- The MCA and sensitivity analysis identified Option 1 Parkes as the Preferred Option, primarily based on supply chain efficiencies and complexity, risk, cost and deliverability. Supply chain cost analysis identified the most beneficial location for a consolidation centre in terms of economic efficiencies is in Parkes, specifically within the Parkes SAP.
- It is therefore recommended to progress Option 1 (Parkes), and more specifically the Parkes SAP, as the Preferred Option for further analysis in accordance with the economy of effort principle. Options 2 and 3 (Forbes and Orange) were not progressed for detailed cost, benefit, or regulatory analysis.
- A single technical solution for the consolidation centre located within the Parkes SAP was developed by SNC. The technical solution is a staged solution, consistent with the findings of the demand analysis:
 - Stage 1 – Minimum Viable Product - development and construction of infrastructure sufficient for 2023 volumes excluding fertiliser.
 - Stage 2 – Full Scope – expansion of Stage 1 to have sufficient infrastructure for 2041 volumes including fertiliser. Construction to commence 5 years after Stage 1.

6.1 Overview

The aim of this Proposal is to identify and assess a range of possible options to facilitate the ability of regional businesses and SMEs to access Inland Rail. The options seek to achieve the opportunities identified in the ILM and align with the PEP principles as described in Section 2.

This section provides an overview of the potential infrastructure and non-infrastructure solutions available, assess the infrastructure options against the relevant Base Case to identify the Preferred Option, and provide a technical solution for the Preferred Option to form the basis of subsequent analysis within this Study.

6.2 Identified infrastructure solutions

This Study identified a consolidation centre as a potential infrastructure solution to improve access to markets and reduce supply chain costs for SMEs within the Central West region. This will allow SMEs

to take advantage of their strategic location at the intersect of key rail freight routes, providing access to all capital cities within Australia as shown within Figure 19.

Figure 19 Central West NSW locality overview



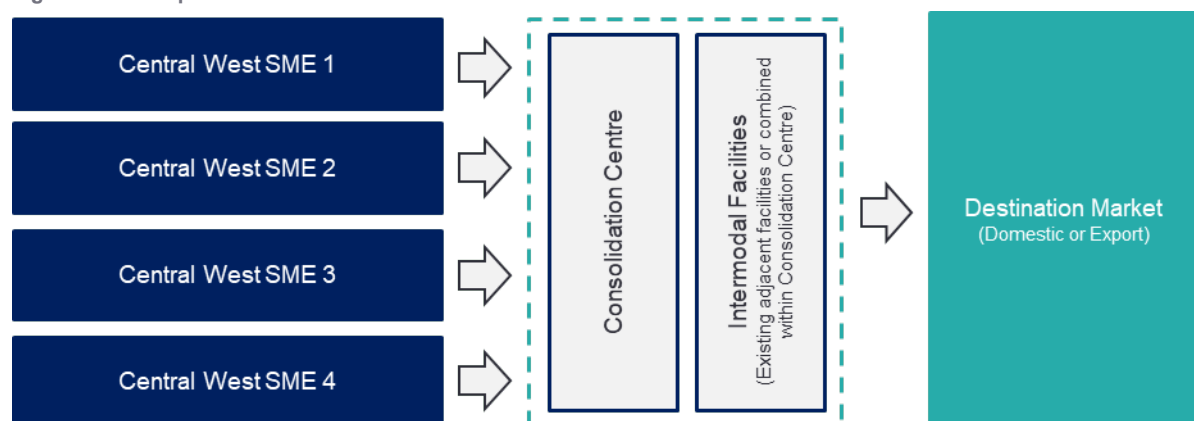
Source: EY

For the purpose of this Study, a consolidation centre is a facility whereby many suppliers deliver goods to the centre, where it is stored and combined with other freight within the facility before being transported to market. In comparison, without a consolidation centre each SME freight goods directly to market, potentially reducing efficiencies through partial loads to multiple destination markets.

The intention of the facility is to allow smaller consignments to gain the efficiencies realised through economies of scale and fuller freight loads (reduced freight costs). Within this context of the II Program, the consolidation centre within this Study is also focused on consolidating freight which is then loaded on to Inland Rail to access markets. Therefore, depending on the available supporting infrastructure adjacent to the proposed facilities, an intermodal facility (rail siding or equivalent) may also be required to achieve this outcome.

Figure 20 provides a conceptual overview of the consolidation centre within this Study.

Figure 20 Conceptual overview of Infrastructure Solution



Source: EY

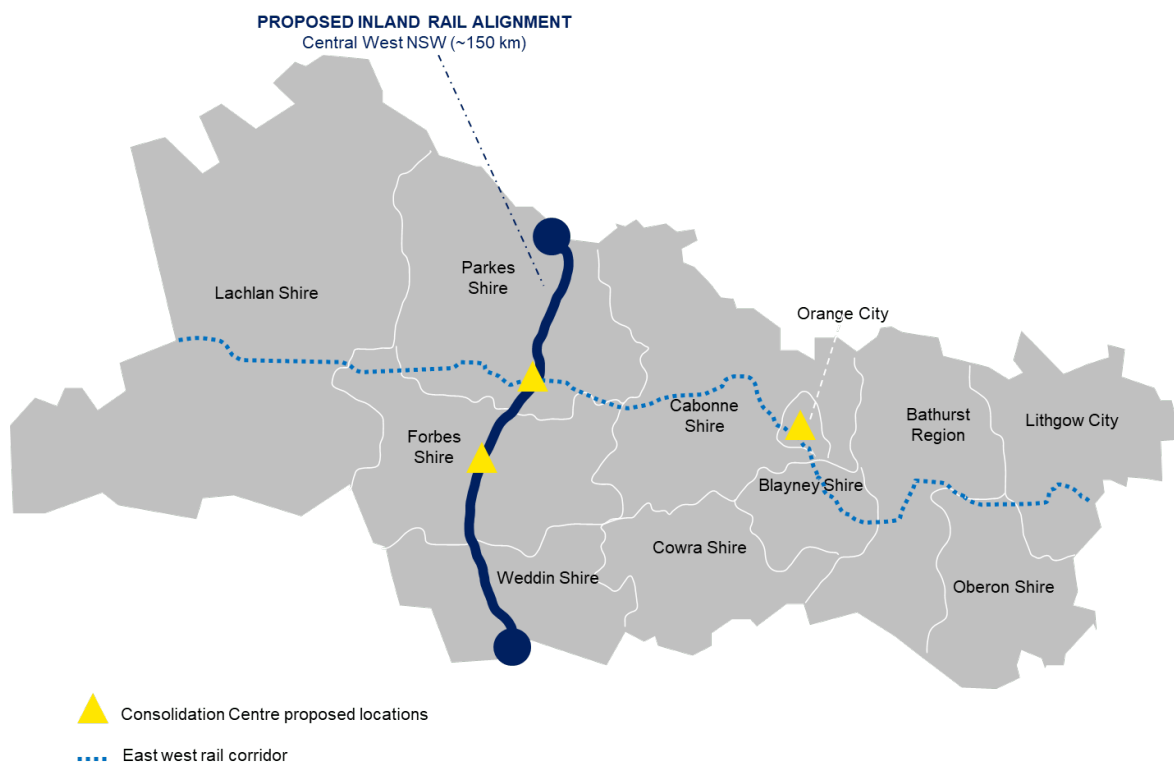
6.2.1 Options overview

Three potential locations were identified within the Central West region to form the options for the development of the consolidation centre. Whilst specific site locations have not been identified within Gate 2, the focus of the options assessment within the Study is identifying the preferred location and infrastructure technical solution which will address the opportunity statements identified within the ILM. The following options form the basis of the options analysis:

- Base Case: 'do nothing' scenario.
- Option 1: A consolidation centre in Parkes.
- Option 2: A consolidation centre in Forbes.
- Option 3: A consolidation centre in Orange.

Figure 21 provides an overview of the locality of each of the abovementioned options within the Central West region.

Figure 21 Central West NSW – Consolidation Centre proposed locations



Source: EY

6.2.2 Base case

The Base Case is a do-nothing scenario where the Proposal is compared only against currently committed / funded freight handling facility projects in the region and existing rail and transport options. The Base Case for the Proposal assumes the following:

- Inland Rail is operational by 2027.
- Committed investments are delivered across the Central West region, including the SAP in Parkes.
- All II Program investments are excluded from the Base Case.
- Freight will continue being transported by the existing road and a potential modal shift of road freight is considered as a result of Inland Rail.

6.2.3 Option 1: Parkes

Option 1 considers the development of a consolidation centre in Parkes. Figure 22 shows the Inland Rail alignment passing through the Parkes region and an overview of the Parkes SAP and regional rail lines in the region.

Figure 22 Parkes connection to key rail freight lines



Source: EY with reference to ARTC interactive map

6.2.3.1 Location overview

Parkes sits at the crossroads of Australia's major freight rail lines, connecting Brisbane to Melbourne and Adelaide of Sydney to Perth as shown in Figure 21.

The existing primary industries in Parkes are focused on freight and logistics, agribusiness and mining. Parkes' strategic location within Central West NSW provides the opportunity to capitalise on these industries and utilise the improvements of Inland Rail to allow further economic diversification within the region.

The operation of Inland Rail will place Parkes at the centre of Australia's freight network and will be a major driver for businesses looking to leverage well connected locations.³⁵

6.2.3.2 Existing supporting Infrastructure

Parkes is home to the National Logistics Hub (within the Parkes SAP) which will provide suppliers with access to 80% of Australia's markets within 12 hours by road or rail, allowing local products to be delivered across Australia and around the world.

The Parkes SAP will be well-served by rail infrastructure, including Inland Rail. As shown in Figure 22, the following key freight lines pass through Parkes:

- Main West Line: Extending from Sydney to Adelaide via Parkes and Broken Hill. The line continues to Perth from Adelaide.
- Parkes to Cootamundra Line: Extending to Sydney, Melbourne and the Riverina.
- Parkes to Goonumbla Line: Extending to Port Kembla. The line is currently being upgraded to the Parkes to Narromine link of the Inland Rail project.

³⁵ SGS Economics and Planning (2019) *Parkes SAP, Economic and Industry Analysis Final Report*, August 2019

Parkes SAP will become a focal point for transferring goods to every major city and freight centre in Australia. It will provide opportunities for new industries in agriculture, freight and logistics, manufacturing, energy and resource recovery and transport to co-locate.

Parkes National Logistics Hub land includes the Pacific National, Linfox and SCT Logistics sites among other landholdings. The locality provides the opportunity to create a facility site serviced by rail and road connections with space available to accommodate a diversity of businesses including rail and road transport terminals, warehousing, advanced manufacturing and food processing businesses.

As highlighted within Section 5, locating the consolidation centre within the Parkes SAP (specifically adjacent to existing intermodal facilities) provides additional efficiencies in comparison to being located within the broader Parkes region. This efficiency is the result of the removal of an additional freight handling activity from the consolidation centre to an intermodal, and in turn will enable the consolidation centre's freight costs to be competitive with road freight to all major cities and ports.

6.2.4 Option 2: Forbes

Option 2 considers the development of the consolidation centre in Forbes. Figure 23 shows an overview of Forbes including the Inland Rail alignment and the connection to the Newell Highway.

Figure 23 Forbes connection to Inland Rail



Source: EY with reference to ARTC interactive map

6.2.4.1 Location overview

Forbes Shire, with a population of approximately 9,920 people in 2020, is in the centre of the Lachlan Valley within the Central West and Orana Region and is regarded as one of the richest primary producing areas in NSW.³⁶ Forbes Shire has a gross regional product of \$595 million with approximately 20.5% of the total economic output made up from agriculture, forestry and fishing, estimated at \$258.5 million.³⁷

³⁶ Forbes Shire Council. *Forbes Community Strategic Plan 2018-2028*

³⁷ Forbes Shire Council. *Forbes Community Strategic Plan 2018-2028*

6.2.4.2 Existing supporting Infrastructure

The Newell Highway, a major road link from Victoria to Queensland, intersects Forbes and runs parallel to the east coast about 400km inland. Inland Rail's project will be of significance to importers, exporters and manufacturers in the region and will improve the connectivity between the east/west rail line and the north/south Newell Highway.

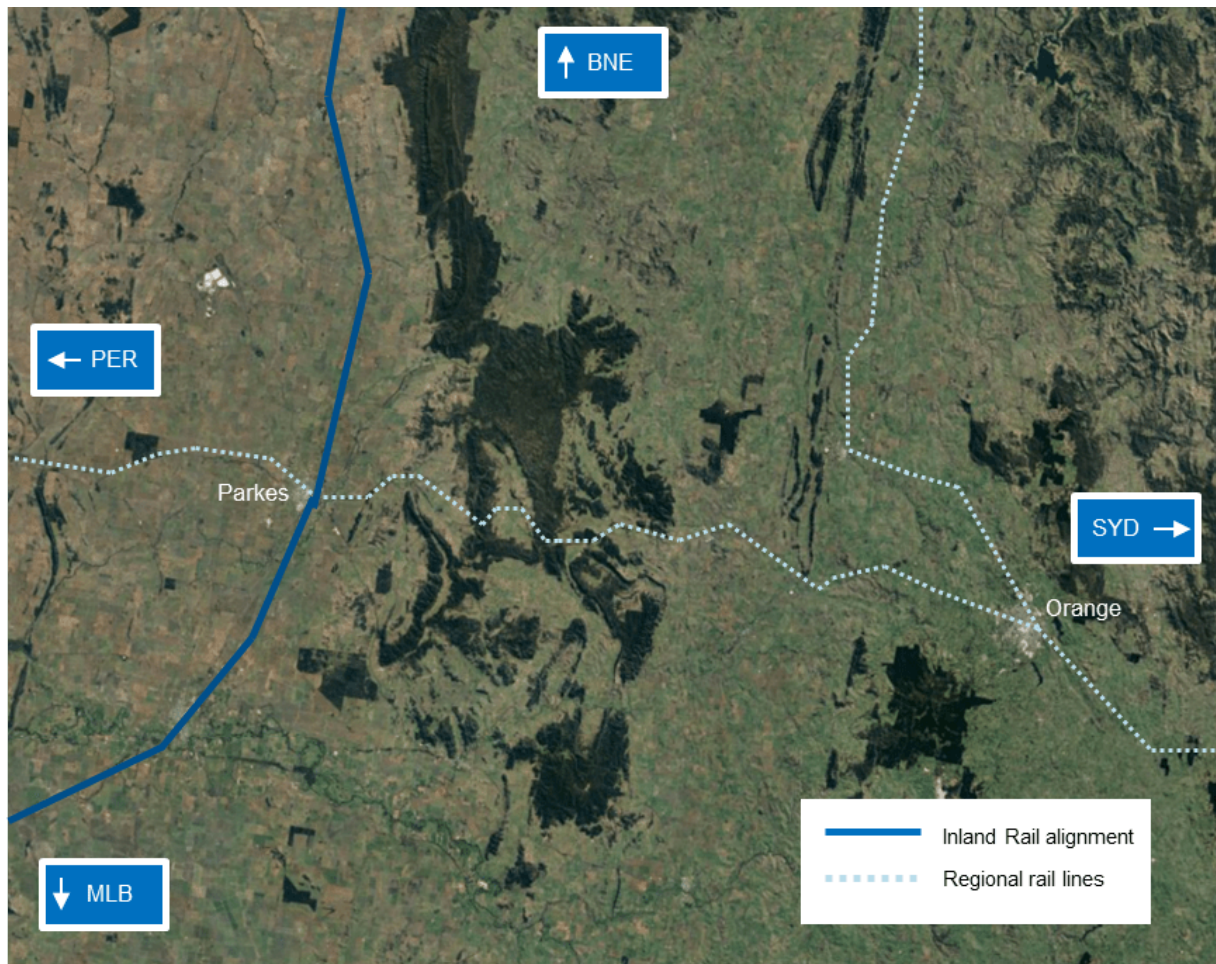
The Stockinbingal to Parkes section of the Inland Rail line pass through the Forbes region and is predominantly used to carry bulk grain to regional mills and feedlots in the area as well as to grain handling terminals at both Port Kembla and Port of Melbourne.

Presently there are a number of existing grain loading facilities within the greater region. The region's closest intermodal facility is located to the north of the Forbes Central Business District (CBD) and is operated by Mountain Industries. The rail siding located at the Mountain Industries site is approximately 300m in length and is insufficient for the purposes of this Study, requiring upgrades and lengthening to be deemed suitable. Therefore, as there is currently no identified site for the infrastructure within Forbes, a further property strategy will be required as well as the potential requirement to develop an intermodal facility as part of the scope to access Inland Rail.

6.2.5 Option 3: Orange

Option 3 includes the development of the consolidation centre in Orange. An overview of Orange and significant connections to Inland Rail is shown in Figure 24 .

Figure 24 Orange connection to Inland Rail



Source: EY with reference to ARTC interactive map

6.2.5.1 Location overview

Orange is located in the Functional Economic Region (FER) of Orange, Blayney and Cabonne and is recognised as a growth centre of NSW. It is one of the State's larger regional cities and has had continuing growth for more than two decades.

Orange LGA is home to more than 41,000 residents and includes the regional city of Orange and the small towns of March to the north, Lucknow and Shadforth to the east and Spring Hill, Huntley and Spring Terrace to south. The Orange LGA economy is driven by health service activities, mining and mining support, public administration, tourism, viticulture and horticulture.³⁸

6.2.5.2 Supporting Infrastructure

Orange is located approximately 258 km west of Sydney. The Main West Line is a major railway in NSW, it runs through the Blue Mountains, Central West region, North West Slopes and the Far West regions, connecting Orange to Parkes in the west, Orange to Sydney in the east and Orange to Nyngan through Dubbo in the north, not having Orange direct connection to Inland Rail.

Locating the consolidation centre within Orange negatively impacts SMEs in Parkes and Forbes by requiring their goods to be transported east to Orange before moving west (then North-South) for Brisbane and Melbourne services. Similarly, being located in close proximity to Sydney, and not being located on the Inland Rail alignment it is likely a consolidation centre in Orange would service the Sydney market and provide limited benefits to Inland Rail.

A suitable intermodal in Orange has not been identified as part of this Study with the closest located in Blaney (SeaLink Rail Terminal). Stakeholder consultation within Section 4 identified the siding as being operated by Blaney Wholefoods who distributes products (local and international / imported) to the food service industry across the central west of NSW. Blaney wholefoods do not believe the consolidation centre will benefit the organisation and were not supportive of the Proposal. Therefore, as there is currently no identified site for the infrastructure within Orange, a further property strategy will be required as well as the potential to develop an intermodal facility as part of the scope to access Inland Rail.

6.3 Identified policy and/or regulatory solutions

Policy and regulatory solutions have not been deemed to be relevant for this Proposal due to the nature of the Proposal. Rather than being designed to address a problem that could be addressed by policy or regulatory requirements, this Proposal seeks to realise opportunities created by Inland Rail within the Central West region by addressing a perceived lack of infrastructure for SMEs to access Inland Rail.

In addressing the PEP principles, the Proposal aims to increase rail competitiveness and supply chain efficiency for SMEs by providing facilities to support economies of scale to reduce freight costs. Achieving these objectives, while also providing economic growth and resilience improvements to the Central West region, given the insufficient access to SMEs to Inland Rail in the region.

6.4 Identified non-infrastructure solutions

It is expected several barriers could be overcome when Inland Rail is operational, but it may take more than an infrastructure solution supporting SMEs. As part of the options workshop with the Proponents, several non-infrastructure solutions were identified that can be applied alongside the Proposal with each of the solutions in isolation unlikely to be sufficient to meet the objective of this Proposal. The opportunity statements outlined in Section 2 and the barriers for SMEs to accessing rail identified in Section 4.3 require non-infrastructure solutions to adequately achieve these opportunities and decrease the perceived barriers for SMEs infrastructure solution to facilitate and encourage use of the consolidation centre. Two non-infrastructure solutions are described in further detail within the subsequent sections.

Logistics education

As a result of consultations with regional stakeholders and the Proponents, logistics education has been identified as a significant non-infrastructure solution that could contribute to increasing knowledge and understanding of logistics, thereby potentially increasing the competitive advantage of an SME.

The complexity of logistics, and the lack of expertise and time for SMEs, means attempting to vertically integrate supply chain into the SMEs can be difficult and costly.³⁹ A coordinated approach to

³⁸ Orange City Council, *Community Strategic Plan 2018-2028*

³⁹ *Small Agricultural Enterprise Logistics*, RDA

increase SMEs logistics education to improve outcomes for SMEs would also support both implementation of the infrastructure solution and its long-term success.

Currently, some initiatives have been taken in the Central West region to improve logistics education of SMEs:

- RDA Central West has co-ordinated the Agricultural SME Logistics Workshop, bringing together local producers, buyers and regional freight operators to understand the current issues and barriers from each perspective, and to consider possible alignments, collaboration and solutions.
- ARDA, a non-profit association of regional agricultural businesses, is identifying the constraints around SMEs and their ability to export and even to enter the export marketplace. They are currently helping SMEs to manage their processes and improve market development and the digital area, and are providing a program on market education for SMEs.

Potential future education initiatives for SMEs may include:

- Cost savings workshop: A workshop demonstrating the potential savings from a mode shift from road to rail transportation and encourage the use of rail mode.
- Regional logistics workshop: The workshop could include the identification of rail freight operators in the area, how to engage with rail operators and the steps to move from a road supply chain to a rail supply chain. Working with existing rail freight operators in the region such as Pacific National, SCT or Linfox may provide greater security to SMEs in the transportation of their product.
- Contestable rail freight workshop: The workshop could help to identify freight types that may have a realistic possibility of being transported by rail.
- Logistics innovation workshop: The workshop could include the identification of non-traditional transport options for consolidation (bulk freight, container) and different products (refrigerated and non-refrigerated goods). This may include providing updates on the latest digital solutions (see below) available to SMEs to reduce the complexity of using rail and transporting products.

Digital solutions

Just as Uber, AirBnB, and Facebook have become digital disruptors in their respective industries, the traditional inefficiencies within current freight markets, such as lengthy offline booking processes, capacity underutilisation, information opacity and manual tracking, make the freight forwarding industry ripe for disruption.⁴⁰

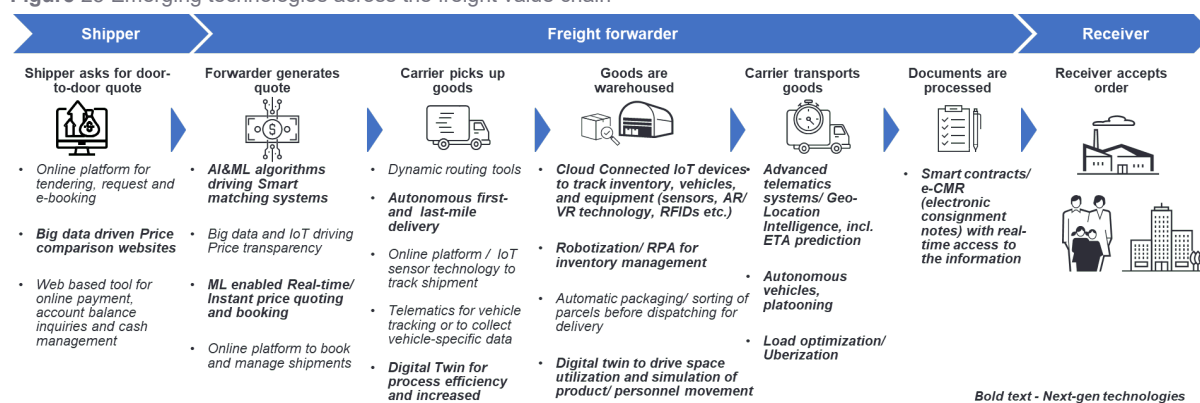
A study by EY has identified that *“the traditional freight forwarder is fading away and making way for a new type of service provider that quickly responds to the needs of shippers in today’s fast-paced environment and provides value-added services that were unheard of just a few years ago”*.⁴¹

Whilst current freight forwarders rely on traditional end-to-end logistics solutions, it is expected that the freight forwarding industry will lean towards automation and a digital connected solution. In addition, the increased adoption of new technologies such as advanced cloud-based services, robotics, blockchain services, drone delivery, etc. are creating growth opportunities for the freight forwarding industry. Figure 25 provides an overview of emerging technologies identified and their impact across the freight value chain.

⁴⁰ Next generation freight forwarding – how technology has redefined the sector, EY 2019

⁴¹ Next generation freight forwarding – how technology has redefined the sector, EY 2019

Figure 25 Emerging technologies across the freight value chain



Source: EY Analysis, as at March 2021

Market analysis undertaken by EY in 2019 also identified that new age players are emerging in the freight forwarding landscape, offering innovative business solutions to remove operational inefficiencies and provide greater supply chain visibility. These players can be described in three categories as described in Table 17.

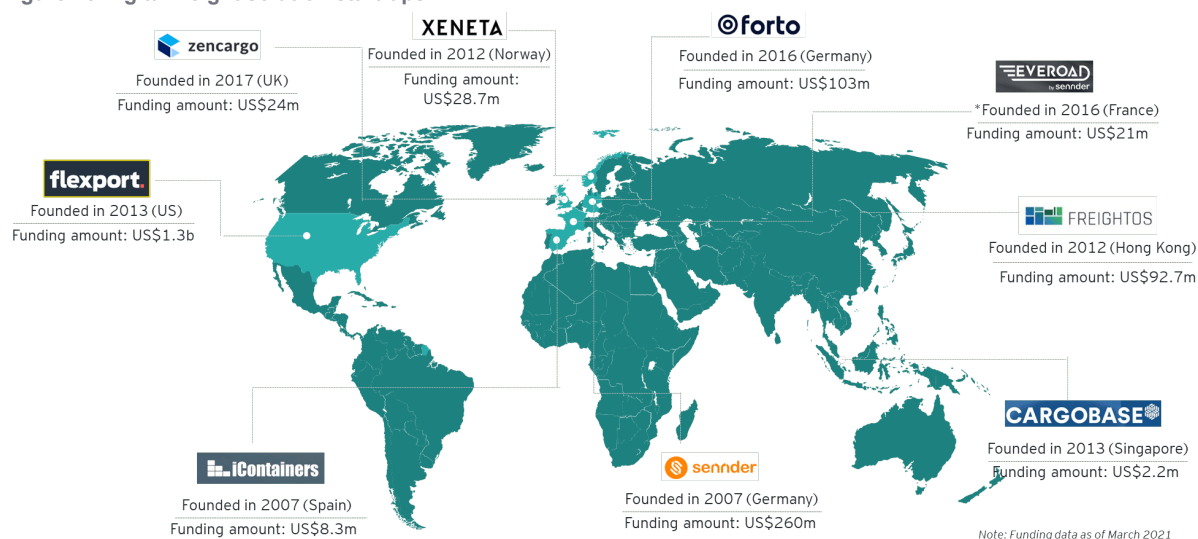
Table 19 Emerging digital freight company categories

Category	Overview	Example organisations
Digital market places	<ul style="list-style-type: none"> Act as a platform / online market place that help connect shippers and carriers. By providing more load visibility, carriers improve load factors whilst shippers gain access to more competitive rates. Offers instant market visibility on freight rates for different modes and shipment types. 	<ul style="list-style-type: none"> Cogoport Simpliship Kukebix Freightos Cargobase
Digital freight forwarders	<ul style="list-style-type: none"> Provides end-to-end logistics solutions. Offers transport quotes, booking and real time tracking of goods. Takes care of documentation, customs clearance, and insurance documentation. Actively intermediates the overall transportation process. 	<ul style="list-style-type: none"> Forto Shipwaves Zencargo Flexport iContainers
Other digital service providers	<ul style="list-style-type: none"> Offers others standalone digital services such as online payment for freight. Digitally secure and exchange bill of lading using blockchain technology. 	<ul style="list-style-type: none"> ShipChain Calidiade Buyco Paycargo CargoX

Source: EY Analysis, as at March 2021

Several of the organisations identified in the table above are receiving significant investor funding in digital freight solutions and are showing growth potential. There is a significant amount of investment being made globally in digital freight solutions, with Figure 26 providing an overview of several global digital freight start-ups including funding received as at March 2021.

Figure 26 Digital freight solution start-ups



Source: Crunchbase, EY Analysis, as at March 2021

In addition to new and emerging organisations being identified as providing digital solutions within the freight industry, existing players are also beginning to innovate and provide additional digital solutions to customers.

Existing logistics organisations providing digital solutions⁴²

Digital logistics allows transportation and logistics incumbents the flexibility to integrate with newer systems that communicate information, synchronise activities and collaborate across processes. Witnessing a push towards digital technology solutions, as well as new start-ups, existing traditional freight companies are also expecting their suite of services to include refined digital solutions.

Some logistics companies around the world have included the following digital solutions in their services:

- **Damco - Twill platform:** It is an online platform that provides greater control of shipments by offering instant price quotes, booking feature, tracking services and simplified paperwork.
- **Agility – Shipa freight platform:** Agility had launched Shipa freight, a digital platform to cater air, sea, Full Container Load (FCL) and Less Container Load (LCL) shipments. Offers instant transport quotes, booking and online payment.
- **Kuehne + Nagel – myKN platform:** myKN is an intuitive platform that provides a fast and reliable way to manage logistics. Provides complete visibility of quotes, booking and shipment tracking all in one place.
- **DB Schenker - Connect 4.0 platform:** Connect 4.0 platform from DB Schenker allows customers instant online quotes for sea or air freight, provides a booking option and tracking of shipment.

Source: EY Analysis

Although current analysis has identified the potential benefits to be gained within freight organisations through digital solutions, a recent Deloitte report⁴³ has identified that despite numerous efforts, digital freight platforms to date have failed to generate game-changing effects and the market is as fragmented as ever. The key inhibitors identified in Deloitte's report within the digital freight model included:

- Shipper's need for customisation, guaranteed prices and loading capacity, and consolidated invoicing.
- Robust and rigid re-liability requirements between different parties involved in transportation.
- Need for involvement of many different types of parties in shipments.
- Traditionally analogue mindset and a short-term investment culture at incumbents.

⁴² Next generation freight forwarding – how technology has redefined the sector, EY 2019

⁴³ Digitalization in Freight Forwarding – Beyond the Platform Hype, Deloitte 2019

- Scarcity of ambidextrous capabilities and digital forwarder talents. That is, for a digital freight solution to be successful it requires both freight forwarding expertise as well as digital excellence for knowing which functionality or features to include in the platform.

Whilst the deployment of emerging technology solutions in the logistics sector may enable SMEs within the region to gain access to more efficient supply chains without the requirement for additional infrastructure investment, no current solutions exist within the Central West. It is recommended as part of the logistics education undertaken within the Central West that advances in technology, digital solutions and the latest freight innovations are continually reviewed and assessed for viability within the region.

6.5 Deliverability

The relative ease of delivery of all options under consideration for this Proposal is set out in Table 18.

Table 20 Deliverability of potential Proposal Options

Option	Description – relative ease of deliverability	Key issues for implementation
Option 1: Consolidation Centre located in Parkes	Option 1 would be easier to deliver compared to Option 2 and Option 3 as there are existing intermodals within the Parkes SAP which may be utilised, therefore a separate intermodal would not be required as part of the technical solution for Option 1.	<ul style="list-style-type: none"> • Competition with existing operators in the region and finding a suitable operator, noting there are three existing logistics companies located at the Parkes SAP site, including SCT, Pacific National and Linfox. • The current scope for this Proposal could deliver a solution that is already potentially being investigated by freight providers and may be a delivery barrier for the implementation of Option 1.
Option 2: Consolidation Centre located in Forbes	This Option would require a property strategy / acquisition of land and the development of an intermodal adjacent to the consolidation centre to allow freight to access rail. The complexity of this option is likely to increase capital costs and be more difficult than Option 1 to find a suitable operator.	<ul style="list-style-type: none"> • Land search and acquisition is needed for Option 2. • Similar to Option 1, due to the existing logistics companies located within the close vicinity of Forbes (c. 35km) at the Parkes SAP site, there may be a barrier to delivery due to the difficulty in securing funding and operators for the facility. • A standalone intermodal facility attached to the consolidation centre may not be viable – see box below.
Option 3: Consolidation Centre located in Orange	This Option would require a property strategy / acquisition of land and the development of an intermodal adjacent to the consolidation centre to allow freight to access rail. The complexity of this option is likely to increase capital costs and be more difficult than Option 1 to find a suitable operator.	<ul style="list-style-type: none"> • Option 3 is not located on the Inland Rail alignment which means it may be more difficult to find an operator for the facility. • Land search and acquisition is needed for Option 3. • A standalone intermodal facility attached to the consolidation centre may not be viable – see box below

Viability of standalone intermodal terminals

Previous analysis undertaken by Neil Matthews Consulting⁴⁴ for the NSW Sea Freight Council sought to develop generic criteria for assessing the broad economic viability and defining infrastructure requirements of further regional intermodal terminal developments.

The report focussed solely on rural and regional intermodal terminals to form the basis of an educational handbook for regional communities and exporters exploring the potential to attract or develop and operate intermodal terminals as freight interchange points.

A summary of findings regarding the viability of intermodals based on freight throughput and relative distance to market is shown in the following table.

Table 21 Intermodal viability constraints

Terminal Size	Overall container volumes p.a.			Distance to port (one-way)			
	Loaded TEU's (export)	Empty TEU's (inbound)	Total TEU's	300km	500km	650km	800km
Small	<2,500	<2,500	5,000	Not suitable	Not suitable	Not suitable	Not suitable
Medium	2,500 to 10,000	2,500 to 10,000	5,000 to 20,000	Not suitable	Not suitable	Not suitable	Marginal
Large	10,000 to 20,000	10,000 to 20,000	20,000 to 40,000	Not suitable	Suitable	Suitable	Suitable
Super	>20,000	>20,000	>40,000	Marginal	Suitable	Suitable	Suitable

Source: Strategic design + Development (Neil Matthews), 2004

The study identified:

- “Small” terminals with a volume threshold less than 5,000 TEUs per annum (consisting of 2,500 loaded export containers and 2,500 inbound empty containers) are not economically viable as a standalone investment/operation at any distance from port; road provides a more cost-effective route to port as volume is insufficient to offset terminal and train operating costs.
- “Medium” sized terminals handling up to 5,000 to 20,000 TEUs pa (loaded and empty) similarly have difficulty competing with road direct services however collaboration amongst nearby terminals may allow sharing of train operating costs.
- “Large” or “Super” sized terminals which exceed 20,000 TEUs are economically viable beyond 400-500 kms from port and across all reasonable investment levels. Volumes are sufficient to assemble efficient train sizes and terminal fixed costs are offset.
- Terminal which are located less than 250-300 kilometres from port will generally not compete with road-direct services, however “Super” sized terminals with total volume exceeding 40,000 TEUs per annum may exceed “cash” costs however not make an adequate contribution to investment or overheads. Some specific geographic instances however may favour rail over road in locations which are closer to port, albeit limited.

Section 5 of this report identified that the future contestable freight capturable for the facility is 132,000 tonnes (c. 8,800 TEU⁴⁵) including fertiliser and 47,000 tonnes (c. 3,100 TEU⁴⁶) without, placing the required terminal size in the ‘Medium’ category. Given the distance to Port Botany from Forbes, Parkes, and Orange is approximately 486km, 450km, and 330km respectively, a standalone ‘Medium’ size intermodal terminal to support the consolidation centre in this Proposal is unlikely to be a viable solution. Collaboration with other terminals in the region is preferred to achieve efficiencies gained from larger freight volumes.

6.6 Sources of funding

The potential funding sources for the options under consideration for this Proposal are high-level at this stage and overall do not pertain to specific options, which reflects the planning and design yet to be determined for the Proposal.

⁴⁴ Regional Intermodal Terminals - Indicators for Sustainability, Strategic design + Development (Neil Matthews) engaged by the NSW Sea Freight Council, 2004

⁴⁵ As per the options technical report undertaken by SNC within this Study, 15 tonnes per TEU is assumed.

⁴⁶ As per the options technical report undertaken by SNC within this Study, 15 tonnes per TEU is assumed.

The focus for funding is on potential state and federal government sources. Section 9 of this document considers the potential funding Options that could be leveraged for this project, including the potential for direct and/or in-kind contributions to the project from Government. Given the pre-feasibility stage of this Proposal, it is noted that there are no specific risks or funding conditions identified for the proposed Options at this stage.

6.7 Options Assessment

6.7.1 Approach overview

This Proposal used an MCA to assess the options as it provides a clear structure for the assessment and differentiation of similar, but unique options against the pre-determined opportunity statements developed for the Proposal.

An initial options workshop was held on 25 October 2021 with the Proponents and the EY Delivery Team to confirm the MCA criteria for the options assessment. A subsequent options workshop was held on 24 January 2022 to assess the options from an MCA perspective, and determine the merit in progressing multiple options through to more detailed analysis in line with the 'economy of effort' principle for this Proposal.

6.7.2 Evaluation criteria

The following evaluation criteria were developed following a consultative process with the Proponents and to compare the options for this Proposal. The criteria seeks to address the opportunity statements developed throughout the ILM process, as well as specific operational and deliverability components related to each option. Each criterion is supported by a description along with a relative importance weighting attributed to it.

Table 22 Evaluation criteria – Options Assessment

Criteria	Description	Weighting
1. Supporting SMEs to access Inland Rail	To what extent does the option improve access for SMEs to Inland Rail?	25%
2. Supporting economic growth and resilience	To what extent does the option support economic growth and industry resilience by providing access to broader domestic and international markets?	20%
3. Improving supply chain efficiency and mode shift	To what extent does the option increase or support freight and supply chain productivity improvements and encourage a mode shift from road to rail?	20%
4. Stakeholder support	To what extent is the option supported by the stakeholder consultation within the region?	15%
5. Demand analysis	To what extent is the option supported by the demand analysis?	10%
6. Complexity, risk, cost and deliverability	Assessment of the general complexities associated with the option including available supporting infrastructure, competition in the region, indicative cost and land availability.	10%

6.7.3 Scoring

All options were assessed individually against the Base Case as part of the MCA framework and were scored on a four-point system from zero to three, where a score of three indicates that the option best fits the criteria and a score of zero indicates the option does not support the criteria. Table 21 details the scoring system applied for the MCA.

Table 23 Scoring system

Score	Description
0	Does not contribute to the criteria
1	Low contribution to the criteria
2	Somewhat contributes to the criteria
3	Good performance likely against the criteria

The options were scored using insights collected during the options workshop. Subsequently, the scoring was further refined to reflect additional technical and freight demand analysis as well as outcomes from stakeholder engagement.

6.7.3.1 Final scores

Final scores presented reflect a combination of the ranks for each option against the criteria, and the weights. To arrive at these results, a Borda Count method was used (awarding points to options based on a preference schedule and then using the total points to determine the preferred option). To determine the overall rank, weights were applied to the total points by option against the criteria.

The assessment identified Option 1 as the preferred option when compared to Options 2 and 3.

Table 24 MCA Rank of options

Criteria	Weighting	Option 1 Parkes	Option 2 Forbes	Option 3 Orange
1. Supporting SMEs to access Inland Rail	25%	3	3	1
2. Supporting economic growth and resilience	20%	3	3	3
3. Improving supply chain efficiency and mode shift	20%	3	2	1
4. Stakeholder consultation	15%	2	2	2
5. Demand	10%	2	2	2
6. Complexity, risk, cost and deliverability	10%	3	2	2
Total score		16	14	11
Total weighted score		2.75	2.45	1.75
Ranking		1	2	3

The results of the options assessment are discussed and analysed in detail below in accordance with the five key overarching criteria.

Table 25 Scoring commentary

Criteria	Scoring Commentary
<p>Criterion 1: Supporting SMEs to access Inland Rail</p> <p><i>To what extent does the option improve access for SMEs to Inland Rail?</i></p>	<ul style="list-style-type: none"> Parkes (Option 1) and Forbes (Option 2) scored equally against Criterion 1 because of an identical infrastructure solution being proposed in each location. The consolidation centre technical solution will provide access for SMEs within the region to gain access to inland rail, and directly supports the requirements of the demand analysis. Orange (Option 3) is expected to support rail access for SMEs but it is negatively impacted due to Orange not being located on the Inland Rail alignment. A consolidation centre in Orange would have a minor impact on improving access to Inland Rail.
<p>Criterion 2: Supporting economic growth and resilience</p>	<ul style="list-style-type: none"> All Options were viewed as having significant potential to deliver benefits in terms of local economic growth and resilience. Providing enhanced access to the Inland Rail, supports and encourages SMEs to collaborate and undertake partnerships within the industry as well as providing

Criteria	Scoring Commentary
<i>To what extent does the option support economic growth and industry resilience by providing access to broader domestic and international markets?</i>	opportunities for SMEs to access new markets. This may increase the returns to SMEs, supports the long-term resilience of the local industry and may encourage industry diversification.
<p>Criterion 3: Improving supply chain efficiency and mode shift</p> <p><i>To what extent does the option increase or support freight and supply chain productivity improvements and encourage a mode shift from road to rail?</i></p>	<ul style="list-style-type: none"> • Parkes (Option 1) was scored as 'Good performance ' against Criterion 3. With reference to the supply chain analysis costing discussed in Section 5.4, Parkes has the most rail positive outcomes against the Base Case (rail freight costs cheaper than road transport) for domestic and export supply chains costs to Sydney-Melbourne-Brisbane destinations. Parkes provides further domestic market supply chain efficiencies if the consolidation centre is located within the Parkes SAP. • Forbes (Option 2) scored moderately in terms of rail positive outcomes, outperforming the Base Case for all export routes, however was not competitive against road for some domestic outcomes. This resulted in a 'somewhat contributes to the criteria' score for Forbes. • Orange (Option 3) is negatively impacted due to the freight requiring to travel west to access Inland Rail prior to travelling either north or south to Brisbane or Melbourne markets. In addition, road transport is generally more efficient than rail for domestic bound freight originating from either Parkes or Forbes if the consolidation centre is located in Orange. Whilst the option provides positive rail outcomes in some instances against the Base Case (to some export markets) an overall score of 'Low Contribution' was provided.
<p>Criterion 5: Stakeholder consultation</p> <p><i>To what extent is the option supported by the stakeholder consultation within the region?</i></p>	<ul style="list-style-type: none"> • The support for the Proposal by stakeholders is varied, with support for the Proposal and preferred location receiving mixed results. • From the SMEs consulted, they varied in their preferred location for a consolidation centre. Two stakeholders (Hassall Trading and Superbee Honey) would like to see a consolidation centre built in Forbes, one preferred Parkes (Kebby and Watson Tichbourne), and another would like to see the centre built in Orange (Orange Region Vignerons Association). • Two stakeholders (Manildra Group and Blaney Wholesale Foods) did not indicate a preferred location; they have their own rail siding and sites for consolidation of products, and the development of a consolidation centre as part of this Proposal would not benefit their businesses. Blaney Wholesale Foods also advised there would likely be limited demand to support another facility in the region. • Due to the nature of SMEs consulted, it is understood that each SME would prefer the facility constructed as close as possible to their location, with the level of support for each location likely related to the number of stakeholders consulted per region. • As a result of the above, each option was scored equally as 'somewhat contributes to the criteria'.
<p>Criterion 5: Demand and stakeholder consultation</p> <p><i>To what extent is the option supported by the demand analysis within the region?</i></p>	<ul style="list-style-type: none"> • The demand is limited and the volumes considered have been generalised and are likely optimistic as the same set of demand has been considered for the three locations. • It is acknowledged in Section 5 that the largest freight flows for SMEs within the region are towards Sydney. The overarching SME volumes for the region are not supportive of a standalone intermodal terminal, and the potential capturable volumes for a facility changing considerable per location. • As a result of the above, each option was scored equally as 'somewhat contributes to the criteria'.
<p>Criterion 6: Complexity, risk, cost and deliverability</p> <p><i>Assessment of the general complexities associated with the option including available</i></p>	<ul style="list-style-type: none"> • Parkes (Option 1) was assessed as 'good performance likely against the criteria' considering complexity, risk, cost and deliverability. The existing Parkes SAP and supporting infrastructure as well as existing intermodals in Parkes would facilitate the development of the infrastructure solution with a lower cost and with less perceived issues in deliverability. A

Criteria	Scoring Commentary
<i>supporting infrastructure, competition in the region, indicative cost and land availability.</i>	<p>separate intermodal would not be required as part of the infrastructure solution if it is located in Parkes.</p> <ul style="list-style-type: none"> Forbes (Option 2) and Orange (Option 3) are higher cost and feature more complexity in scope due to both Options requiring the acquisition of land to deliver the infrastructure solution and the potentially development of an intermodal facility to gain access to rail.

6.7.3.2 Sensitivity analysis

Sensitivity analysis was conducted to examine the consistency of the results. The sensitivity scenarios are presented in the Table 24.

Table 26 Sensitivity weighting summary

Criteria	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6
Original weightings	25%	20%	20%	15%	10%	10%
Sensitivity A (equal weightings)	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Sensitivity B (Ancillary removed)	38.5%	30.8%	30.8%	0.0%	0.0%	0.0%
Sensitivity C (Costs + 10%)	23.0%	18.0%	18.0%	13.0%	8.0%	20.0%
Sensitivity D (Costs – 10%)	27.0%	22.0%	22.0%	17.0%	12.0%	0.0%
Sensitivity E (stakeholder support +10%)	23.0%	18.0%	18.0%	25.0%	8.0%	8.0%
Sensitivity F (Supply Chain Efficiencies + 10%)	23.0%	18.0%	30.0%	13.0%	8.0%	8.0%

Source: EY

The results are summarised in Table 25, which shows the ranking of each Option under each sensitivity test. This highlights that under any sensitivity, Option 1 remains the Preferred Option.

Table 27 Sensitivity analysis results – impact on project ranking

Sensitivity	Option 1	Option 2	Option 3
Sensitivity A (equal weightings)	1	2	3
Sensitivity B (Ancillary removed)	1	2	3
Sensitivity C (Costs + 10%)	1	2	3
Sensitivity D (Costs – 10%)	1	2	3
Sensitivity E (demand and stakeholder support +10%)	1	2	3
Sensitivity F (Supply Chain Efficiencies +10%)	1	2	3

Source: EY

A summary of how the weighting of each of the evaluation criteria were changed under each of the scenarios is outlined below.

- Under Sensitivity A, all criteria were weighted equally. Under this scenario, greater weighting was placed on the ancillary criteria of complexity, risk, cost and deliverability of the options. The overall ranking of each option did not change under this scenario, with Option 1 remaining as the highest scored.
- Under Sensitivity B, ancillary criteria weighting was removed with the scoring focused on the ILM outcomes. Under this sensitivity the overall ranking of the options remained unchanged with Option 1 remaining as the highest scored.
- Under Sensitivity C, the weighting on the complexity, risk, cost and deliverability of the options was increased by 10%, placing a higher importance on this criterion. Under this scenario the overall ranking of the options remained unchanged with Option 1 remaining as the highest scored.

- Under Sensitivity D, the weighting on the complexity, risk, cost and deliverability of the options was decreased by 10% (to 0%). Under this scenario Option 1 remained the highest scored.
- Under Sensitivity E, the weighting on the stakeholder support was increased by 10%. The overall ranking of each option did not change under this scenario, with Option 1 remaining as the highest scored.
- Under Sensitivity F, the weighting on the supply chain efficiencies was increased by 10%, placing higher importance on this criterion. Under this scenario the overall ranking of the options remained unchanged with Option 1 remaining as the highest scored.

6.7.4 Option scoring summary

The options analysis identified Option 1 (Parkes) as the highest performing option due supply chain efficiencies and complexity, risk, cost and deliverability. Supply chain cost analysis identified the most beneficial location for a consolidation centre in terms of economic efficiencies is in Parkes, specifically within the Parkes SAP. Being located within the Parkes SAP provides the only option of those analysed whereby the consolidation of freight and using rail is competitive to the Sydney domestic market – the primary destination for SME freight from the region.

The primary shortcomings of Option 2 (Forbes) and Option 3 (Orange) is the cost effectiveness and deliverability due there not being a pre-determined site for the location of a potential facility within Forbes and Orange. As a result, a further property strategy and potential acquisition is required within these Options.

Referring to the supply chain analysis, locating the facility in Forbes (Option 2) would likely require either intermodal facilities as part of the scope, or require additional handling to the facilities located in Parkes before accessing rail, while locating the facility in Orange (Option 3) would only benefit SMEs based in Orange looking to reach the Melbourne or Brisbane Markets. In all other instances, SMEs would be more efficient using road.

It is therefore recommended to progress Option 1 (Parkes), and more specifically the Parkes SAP, as the Preferred Option for further analysis in accordance with the economy of effort principle. Options 2 and 3 (Forbes and Orange) were not progressed for detailed cost, benefit, or regulatory analysis.

6.8 Infrastructure technical solution

An infrastructure technical solution has been developed for the Preferred Option (a consolidation centre located within the Parkes SAP) through an iterative process with the Proponent, EY and SNC. This section discusses the technical development process for the Preferred Option and presents the outcomes to form the basis for further analysis within this report including cost development and regulatory assessments. Technical design reports for the technical solution can be found at Appendix J.

6.8.1 Development approach

An options workshop was held on 24 January 2022 which, following the identification of the Preferred Option, sought to identify the scope of the technical solution. Table 26 provides an overview of the key considerations identified for the development of the consolidation centre.

Table 28 Technical solution considerations

Consideration	Approach
Scope and scale. Contestable freight within the region includes a wide range of products, including: food; wine; meat; timber; general freight; building materials; manufactured goods; and, fertiliser. The facilities must consider the differing storage, handling, and seasonal peak requirements of the volumes identified.	It has been assumed that: <ul style="list-style-type: none"> • All freight identified within Section 5, is transported in standard 20 foot shipping containers with the exception of fertiliser (transported by bulk) and those identified within the “Food manufacture, animal products and edible commodities” are transported in a mix of standard and refrigerated containers, depending on the nature of the foodstuffs. • 30% of “Food manufacture, animal products and edible commodities” will be transported in standard 20 foot shipping containers, with the remainder transported in refrigerated containers. • Warehousing will have sufficient area to hold a week’s demand. The yearly demand has been spread across 50 weeks with a 25% peaking

Consideration	Approach
	<p>factor applied to allow for periods of increased demand, such as leading into the Christmas period.</p> <ul style="list-style-type: none"> • A hardstand area is also earmarked based on the same one week demand and 25% peaking assumption. • 90% of the fertiliser will be required for winter crops, delivered over a 4 month period (January to April) and 10% will be required for summer cropping delivered over a 4 month period (July to October).
<p>Intermodal facilities. To allow the consolidation centre to access Inland Rail consideration is required to be given to the inclusion of intermodal facilities to support the mode shift of freight processed within the facility.</p>	<p>Several intermodal facilities exist within the Parkes SAP (operated by Pacific National and SCT), with a third facility identified as part of the SAP Master Plan.</p> <p>It was identified that the consolidation centre should be located adjacent to an existing intermodal within the Parkes SAP to avoid additional freight costs in transporting from the centre to an intermodal.</p> <p>It has been assumed that no additional intermodal facilities are required within the scope of the technical solution, with the existing intermodals within the Parkes SAP being sufficient.</p> <p>This approach will allow the facilities to gain the supply chain efficiencies of being located within the Parkes SAP without the significant additional capital costs associated with the development of standalone intermodal facilities.</p>
<p>Staging. The inclusion of fertiliser within the contestable demand requires a change in business model for the industry. Staging should be considered to allow sufficient time to identify if a business change is likely to occur, making fertiliser contestable.</p>	<p>As identified in Section 5, fertiliser accounts for 66,000t (or c.24%) of the contestable freight for the facility. However, transporting fertiliser by rail to a Central West consolidation facility would require the re-establishment of rail infrastructure at fertiliser facilities at the Port of Newcastle and a change in fertiliser business practices.</p> <p>The change in business practices is not expected to occur in the short term, however it may occur in the medium term.</p> <p>In addition to the above, demand analysis undertaken in Section 5 identifies that the contestable freight for the facilities increases from 279,300 tonnes to 354,800 tonnes over the years 2021 to 2041.</p> <p>Two stages have been identified to develop a 'Minimum Viable Product' initially, which will allow sufficient infrastructure to attract the current demand available and reduce initial capital costs. A second stage has been identified for development in the medium term that allows for future proofing of demand volume growth and includes sufficient infrastructure to allow fertiliser transport through the centre.</p> <p>The benefits of staging the infrastructure include:</p> <ul style="list-style-type: none"> • Reducing initial capital costs to develop the 'Minimum Viable Product'. • Allowing the concept to operate for a period to prove viability prior to expansion to allow for future proofing for demand growth. • Allowing sufficient time to observe a change in business practices for fertiliser following the commencement of Inland Rail. This will allow the delay of capital outlay until fertiliser is deemed a viable option.

6.8.2 Technical solution overview

A single technical solution including two stages was developed by SNC as follows:

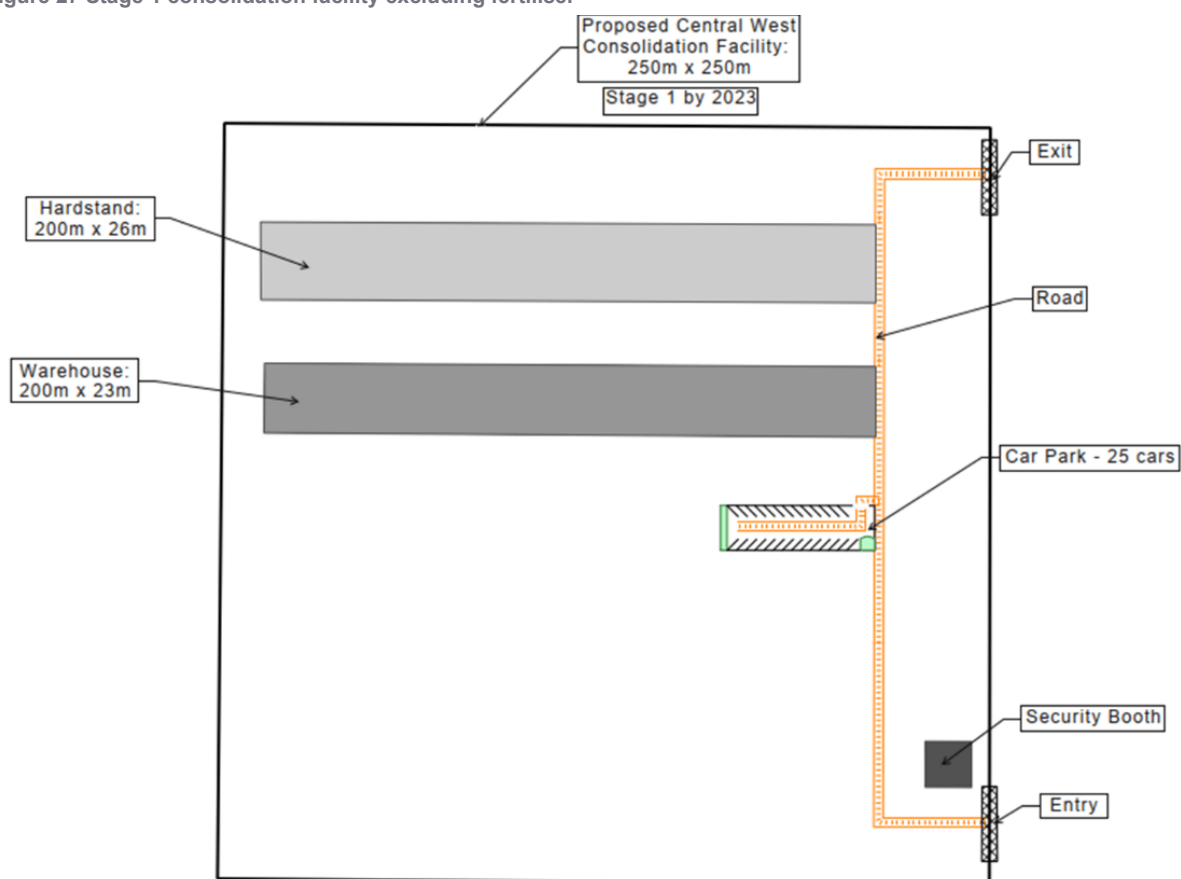
- Stage 1 - Minimum Viable Product - development and construction of infrastructure sufficient for 2023 volumes excluding fertiliser.
- Stage 2 - Full Scope - expansion of Stage 1 to have sufficient infrastructure for 2041 volumes including fertiliser. Construction to commence five years after Stage 1.

The scale and type of infrastructure proposed is directly related to the demand analysis undertaken and presented in Section 5, including allowances for demand growth over time. For additional information including detailed assumptions, see Appendix E.

6.8.2.1 Stage 1

Stage 1 includes the development and construction of infrastructure sufficient for 2023 demand volumes excluding fertiliser. The facility is assumed to be developed within the Parkes SAP, adjacent to an existing intermodal facility. Within this Gate 2 Study a specific site location has not been determined, Figure 27 shows the indicative layout for Stage 1 with Table 27 indicating the infrastructure included within the scope of the solution.

Figure 27 Stage 1 consolidation facility excluding fertiliser



Source: SNC, 2022

Table 29 Stage 1 scope

Asset	Description	Requirements
Hardstand	Area	5,200 m ²
Warehouse	Dimensions	4,500 m ² (includes 1,000 m ² refrigerated)
Security booth	Type	Single person
Site fencing	Coverage	Boundary
Site lighting	Coverage	Entry, exit, warehouse, container storage area
Fire safety	Equipment	1 fire panel 4 hydrants
Internal roadways	Length	200m for heavy vehicle movements
Car parking	Number	25 cars
Connection to utilities	Power	* 2MVA padmount transformer * Wiring to office, lighting, fuelling and materials handling equipment

Asset	Description	Requirements
		* Will include requirements for 415V 3ph supply for reefers (1MW supply)
	Water	Town water plus some on site capture
	Communications	NBN, 4G minimum
	Sewerage	Town sewerage
	Drainage	Unknown

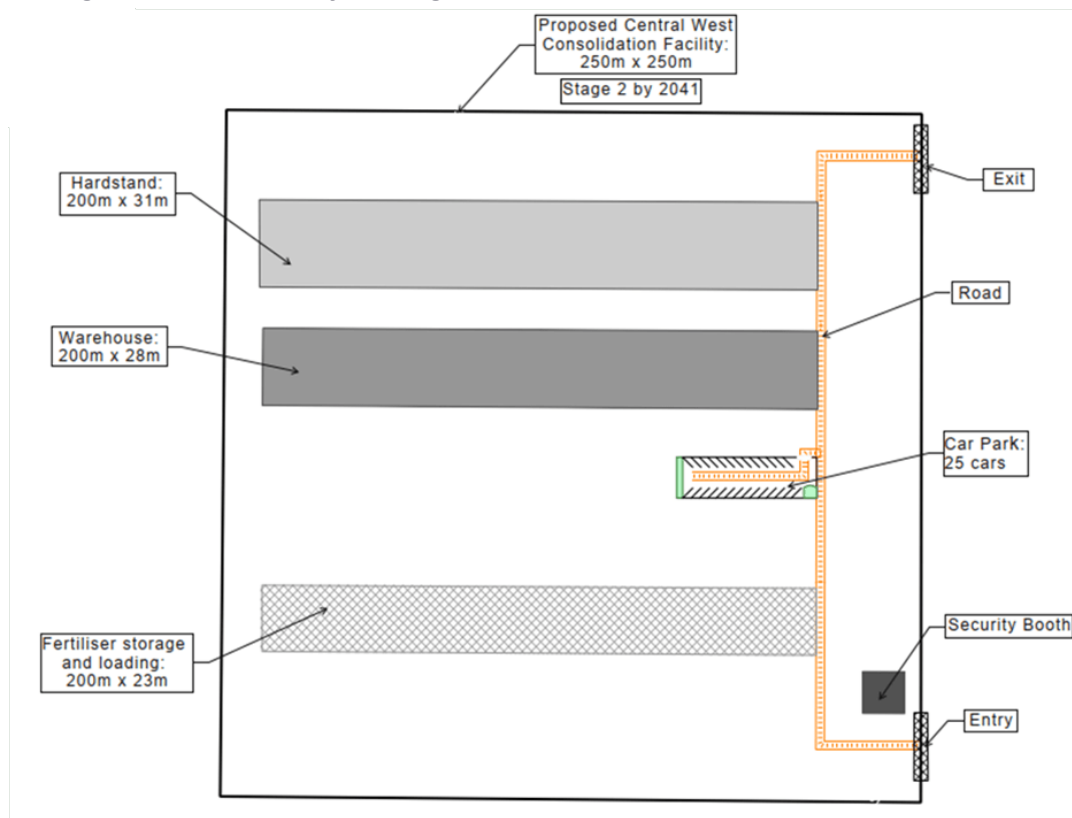
Source: SNC, 2022

6.8.2.2 Stage 2

Stage 2 involves the expansion of the infrastructure identified within Stage 1 to allow for future proofing of potential demand growth as well as the inclusion of fertiliser storage, assuming fertiliser operations are considered viable.

Stage 2 includes sufficient provisions for the forecast 2041 demand volumes and includes fertiliser storage. The timeframe for the development of Stage 2 is five years following Stage 1. Should a change in fertiliser operations not occur within this timeframe and not yet be suitable for rail operations, it is expected that Stage 2 can be delayed further as required. Figure 28 shows the indicative layout for Stage 2 with Table 28 indicating the infrastructure included.

Figure 28 Stage 2 consolidation facility including fertiliser



Source: SNC, 2022

Table 30 Stage 2 operating requirements including fertiliser shed

Asset	Description	Requirements
Hardstand	Area	6,200 m ²
Warehouse	Dimensions	5,500 m ² (includes 1,300 m ² refrigerated)
Fertiliser shed	Dimensions	4,650 m ²
Security booth	Type	Single person

Asset	Description	Requirements
Site fencing	Coverage	Boundary
Site lighting	Coverage	Entry, exit, warehouse, container storage area
Fire safety	Equipment	1 fire panel 6 hydrants
Internal roadways	Length	200m for heavy vehicle movements
Car parking	Number	25 cars
Connection to utilities	Power	* 2MVA padmount transformer * Wiring to office, lighting, fuelling and materials handling equipment * Will include requirements for 415V 3ph supply for reefers (1MW supply)
	Water	Town water plus some on site capture
	Communications	NBN, 4G minimum
	Sewerage	Town sewerage
	Drainage	Unknown

Source: SNC, 2022

7. Costs

Key messages

- Strategic P50 costs have been developed for the Preferred Option (Parkes). The costs are based on high-level scoping and design.
- Initial capital cost estimates (on a P50 basis, in nominal terms (2022)) for the Preferred Option in two stages is as follows:
 - Stage 1: \$35.0million.
 - Stage 2: \$21.6million.
 - Total: \$56.6million.
- Operating and maintenance costs (P50, nominal, over the 30-year period of analysis) for the Preferred Option, in two stages are:
 - Stage 1: \$30.0million which includes maintenance costs (\$27.2million) and operating costs (\$2.8million).
 - Stage 2: \$12.2million which includes maintenance costs (\$10.5million) and operating costs (\$1.7million).
 - Total: \$42.3million which includes maintenance costs (\$37.8million) and operating costs (\$4.5million).
- Whole of Life costs (P50, nominal, over the 30-year period of analysis) for the Preferred Option, in two stages including capital, operating, and maintenance costs are:
 - Stage 1: \$65.1million
 - Stage 2: \$33.8 million
 - Total: \$98.9 million
- Due to the level of design information available at this stage, a 50% contingency has been applied. This is in keeping with models and suggested parameters used by TfNSW on road and rail projects at the concept design stage. All capital costs have been escalated by current construction price index value of 3% per annum.
- Should this Proposal progress to Gate 3, refinement of cost estimates for the preferred option is expected in collaboration with the asset owner. Costs will also be refined to consider any potential implications from property acquisition costs, or any costs related to potential mediation, environmental activities or other regulatory approvals that may be required

7.1 Capital Costs

7.1.1 Capital Cost Summary

Capital costs have been provided for the Preferred Option in Parkes based on the high-level scope of intent developed by SNC Lavalin (refer Section 6.8). The rates used are composite all-in rates and benchmarked from recent projects within WT cost database. WT used first principles estimating where design information allows and have made provisional cost assessments of scopes of work that have not yet been fully defined.

All costs are priced at FY22 prices and have been escalated to reflect a construction programme with Stage 1 assumed to commence in FY24 and Stage 2 assumed to commence in FY29. Escalation was applied to these costs based on current anticipated market indices.

The project capital costs cover all plant, labour and materials associated with construction. Due to the nature of the Gate 2 design, WT have provided all-in composite rates for items such as installation of new boundary fencing. Earthworks to the site are excluded as there is insufficient design detail/ scope definition to address this.

Option 1 has been considered which has been split into two stages.

The scope of Stage 1 includes:

- A 200m road.
- 5,200m² hardstand.
- 4,500m² warehouse including 1,000m² of refrigeration storage.
- A gatehouse.
- 1,000m of boundary fencing.
- A lighting allowance.
- CCTV allowance to site.
- Linemarking to carpark.
- Fire services installations.
- Connection to utilities.

The scope of Stage 2 includes:

- Additional 1,000m² hardstand.
- Additional 1,000m² warehouse including additional 300m² of refrigeration storage.
- A 4,650m² fertiliser shed.
- Additional lighting allowance.
- Additional power outlets only.
- Additional hydrants.

Client costs have been assumed at 10% and consultant costs at 15%. These have been benchmarked against other similar projects. Preliminaries (i.e. contractor site set up, overheads etc) have been benchmarked at 30%, in line with the direction taken on other projects in the II Program. At this stage, there isn't any specific direction on the likely procurement route for the delivery of this Proposal.

Geotech investigations have not been undertaken at this early stage of the design process, as such soil condition is not known. There may be contamination from landfill or other sources, which will need to be treated. Until further detail has been obtained, WT have excluded the cost to remove and/ or treat contaminated soil. This will be considered as an item on the risk register in future gateways.

Due to the level of design information available at this stage and considering the P50 level of certainty around the costs, a 50% contingency to the Gate 2 project cost has been applied. A combination of benchmarking of other recent infrastructure projects, in-house experience and knowledge of infrastructure cost planning, have been used to decide the appropriate contingency levels. Internal benchmarks include the More Trains More Services (MTMS) Program and a strategic level cost estimate for a large-scale infrastructure project of a similar nature for a Tier 1 contractor, with comparable design effort to the Gate 2 assessment undertaken for this Proposal whereby a 50% contingency amount was reviewed and approved by the contractor's estimating review team. Reference has also been made to published guidelines such as suggested parameters used by TfNSW Roads and Maritime estimating guidelines and TfNSW Project Cost Estimating for Heavy Rail & Light Rail infrastructure guidelines to inform this contingency level.

Capital costs are summarised by asset category in Table 29.

Table 31 Capital costs by asset category (\$million)

Description	Option 1 Stage 1	Option 1 Stage 2	Option 1 Total
Rail Works	-	-	-
Road Works	0.39	-	0.39
Building works	8.71	6.91	15.62
Infrastructure works	4.28	0.21	4.50
Other works	-	-	-
Direct Costs	13.39	7.12	20.51
Preliminaries, overheads, consultant and client costs	8.63	4.59	13.22
Base Estimate	22.01	11.71	33.72
P50 Contingency	11.01	5.86	16.86
Total (Real)	33.02	17.57	50.59
Escalation	2.01	4.04	6.05
Total (Nominal)	35.03	21.61	56.64

Source: WT 2022, numbers may not sum due to rounding

7.2 Maintenance costs

There are a number of alternative industry accepted approaches to develop whole-of-life maintenance costs. These approaches are based on individual corporate strategies and experiences. The approach to risk assessment can also vary.

With this in mind, the views and opinions below (including cost estimates) constitute WT's judgment as at the date indicated and based on knowledge of the industry and current best practices, including the quality and appropriateness of delivery solutions, knowledge libraries and actual cost data obtained from Inland Rail.

The components modelled in the maintenance cost modelling and the development approach for these are summarised in Table 30.

Table 32 Maintenance cost components

Maintenance cost	Approach to development
Replacement costs (MPM)	<p>MPM and renewal tasks have been developed using:</p> <ul style="list-style-type: none"> Design information provided at that time which may not include specific individual asset information, design specifications, design configurations and materials selected. In these instances, WT has adopted a generic approach to cost modelling based on previous project benchmark data. Standard asset renewal and replacement cycles has been applied from guidance material, knowledge libraries and industry good practice processes. Replacement of assets on a like for like in terms of performance and quality. Programmed maintenance activities such as grinding and resurfacing of tracks. Renewal tasks such as an overhaul or upgrade to meet the design life.
Annual maintenance costs (RMR)	<p>Generally, RMR has been developed using the following methods:</p> <ul style="list-style-type: none"> Benchmark maintenance cycles and rates from other similar projects prorated to reflect units in the cost plans.

Maintenance cost	Approach to development
	<ul style="list-style-type: none"> A percentage of capital cost benchmarked against knowledge libraries to reflect a reasonable level of planned and unplanned maintenance needs. Unit rates (where individual assets are easily identified).

Source: WT 2022

7.2.1 Maintenance Cost Summary

Maintenance costs for each option are summarised below, including real and nominal costs over the 30-year appraisal period. Note: the maintenance costs for Option 1 are exclusive of the Base Case, meaning, for the purposes of the economic and financial analysis, the total maintenance costs for each option are shown alongside the incremental costs for each option.

Table 33 30-year maintenance costs (\$million, real FY22)

Cost category	Base Case	Option 1 Stage 1		Option 1 Stage 2		Option 1 Total	
		\$million	Δ to Base Case	\$million	Δ to Base Case	\$million	Δ to Base Case
MPM	0	8.44	8.44	2.94	2.94	11.38	11.38
RMR	0	6.29	6.29	2.33	2.33	8.62	8.62
Total	0	14.73	14.73	5.27	5.27	20.00	20.00

Source: WT 2022, numbers may not sum due to rounding

Table 34 30-year escalated maintenance cost (\$million, nominal - 3% escalation rate)

Cost category	Base Case	Option 1 Stage 1		Option 1 Stage 2		Option 1 Total	
		\$million	Δ to Base Case	\$million	Δ to Base Case	\$million	Δ to Base Case
MPM	0	16.56	16.56	6.32	6.32	22.87	22.87
RMR	0	10.69	10.69	4.18	4.18	14.87	14.87
Total	0	27.25	27.25	10.49	10.49	37.74	37.74

Source: WT 2022, numbers may not sum due to rounding

In calculating the above costs, the opex period for Stage 1 is 30 years, however the opex period included in the estimate for Stage 2 is 25 years. The reason for this is that to have the Stage 2 opex period lasting longer than Stage 1 would not be considered practical, especially due to Stage 2 being an extension of Stage 1 in many instances. Therefore, the opex period for both stages ends in FY54.

7.3 Operating costs

Operating cost allowances for network operation generally include utility costs, staff costs and statutory expenses (excluding maintenance costs). The operating costs anticipated for this Proposal includes power usage from LED lighting, warehouse and coldrooms.

A summary of annual operating cost allowance per option in real dollars and comparison to the Base Case) is included in Table 33.

Table 35 Annual operating costs for project options (real FY22)

Cost category	Base Case	Option 1 Stage 1		Option 1 Stage 2		Option 1 Total	
		\$	Δ to Base Case	\$	Δ to Base Case	\$	Δ to Base Case
Operating cost	0	55,250	55,250	38,680	38,680	93,930	93,930

Source: WT 2022

7.4 Whole of life costs

A summary of the total whole of life costs for Option 1 is shown in Table 34 in nominal terms for the 30-year analysis period for Stage 1 and 25-year analysis period for Stage 2.

Table 36 Whole of life cost by option (\$million, nominal – 3% escalation rate)

Cost category	Base Case	Option 1 Stage 1	Option 1 Stage 2	Option 1 Total
Capital Cost	0	35.03	21.61	56.64
MPM	0	16.56	6.32	22.87
RMR	0	10.69	4.18	14.87
Operating Cost	0	2.79	1.73	4.52
Total	0	65.07	33.83	98.90

Source: WT 2022

7.5 Key assumptions and reliability of the estimates

7.5.1 Capital Cost Assumptions

The key assumptions used by WT in development of the cost estimates for the Proposal are as follows:

- The rates used are composite all-in rates and are benchmarked from recent projects within the WT cost database.
- All costs have been escalated to reflect FY24 (Stage 1) and FY29 (Stage 2) anticipated market prices.
- The capital costs for the project options cover all plant, labour and materials associated with the construction.
- Assumed roads to be 8m wide and to be constructed as a sealed road.
- Warehouse assumed to be 10m high.
- Fertiliser shed assumed to be 20m high.
- Assumed demountable type single person security booth/gatehouse.
- Provisional allowance included for CCTV to site.
- Assumed no further work required for bulk movement of fertiliser to the site.
- Provisional allowance included for utilities and services connections – Further information required.
- Fire services allowance includes fire alarm panel and hydrants – To be reviewed at Gate 3.
- Assumed town sewerage available in Parkes SAP.
- Assumed access to National Broadband Network (NBN) connection within Parkes SAP.
- Assumed on site data acquisition systems not part of this project.
- Assumed escalation to FY24 for Stage 1 and FY29 for Stage 2.
- Assumed that the extension of refrigerated storage would lead to an additional refrigeration storage unit being added, rather than extension of the existing refrigerated storage.
- Due to the level of design information available at this stage and considering the P50 level of certainty around the costs, a 50% contingency to the Gate 2 project cost has been applied. A combination of benchmarking of other recent infrastructure projects, in-house experience and knowledge of infrastructure cost planning, have been used to decide the appropriate contingency levels. Internal benchmarks consulted include the More Trains More Services Program and a strategic level cost estimate for a large-scale infrastructure project of a similar nature for a Tier 1 contractor, with comparable design effort to the Gate 2 assessment undertaken for this Proposal.

Reference has also been made to published guidelines including the TfNSW Roads and Maritime Cost Estimating Guidelines and TfNSW Project Cost Estimating for Heavy Rail & Light Rail Infrastructure Guidelines.

- For nominal capital costs, estimates have been escalated by the current construction price Index value of 3% per annum.

The following costs have been excluded:

- Earthworks to site.
- Culverts excluded – No requirement identified.
- The removal/treatment of hazardous contaminated spoil, ballast etc.
- Connection to utilities and services connections.
- Property/land acquisition costs.
- Goods and Services Tax (GST).
- Easements and any protection works to avoid damaging the adjacent properties and assets.
- Out of hours working.
- Modifications to existing network (unless specifically stated).
- Works outside site boundary.
- Costs arising from inclement weather.
- Cost arising through delay or demand due to current Covid-19 pandemic.
- Gas supply to site.
- Additional exclusions in relation to Stage 2 include:
 - Storage of Furniture, Fixtures and Equipment (FF&E) during extension works excluded.
 - Gatehouse excluded as already part of Stage 1 costs – No works for refurbishment of existing gatehouse included in estimate.
 - Boundary fencing – Costs included at Stage 1.
 - Closed-circuit television (CCTV) – Costs included at Stage 1.
 - Any further connections to utilities – Only an allowance for additional reefer power outlets in container hardstand.
 - Road works excluded - Costs included at Stage 1.

7.5.2 Maintenance Cost Assumptions

The following input parameters have been used in the operations and maintenance cashflow analysis.

Table 37 Summary of input parameters

Input	Value
Analysis period – Stage 1	30 years
Analysis period – Stage 2	25 years
Start year – Stage 1	FY25
Start year – Stage 2	FY30
Base cost year	FY22
O&M contingency	10%
Escalation rate (for nominal costs)	3%
Discount rate	7%
Sensitivity rate	3%

Source: WT 2022

WT has developed a comprehensive maintenance (or whole-of-life) cost modelling system using a Microsoft Excel application program which has been tested on numerous major infrastructure project business cases. The methodology for estimating the maintenance costs is as follows:

- The model has been developed using capital cost estimates for the Proposal options.
- The future cashflow is based on the base capital cost estimates and no escalation rate (CPI) has been applied to the future cashflow for the base model.
- Separate models for cost escalation and discounted cashflow are developed using the base model for analysis purposes.
- A 10% O&M contingency has been built into estimates for RMR, MPM and operating costs.
- The same cost assumptions are applicable to all Proposal options.

In developing the maintenance cost estimates, the following aspects of the Proposal were considered:

- The costs have been estimated based on the capital costs prepared by WT.
- The anticipated time-based activities are applied.
- Core hours of operation and subsequent duty/use of key plant and equipment anticipated.
- Quality of finishes, durability and performance requirements anticipated.
- Design Life Requirements considering the level of duty expected of each asset.
- The realistic expectations that some assets may not be fully replaced in full at the end of its design life (e.g., tracks).
- Outsourced contracts anticipated including managing maintenance contractors supported by specialist sub-contractors.
- The applied replacement costs assume:
 - Asset design lives will be achieved even though component life and degradation will vary according to location, prevailing weather, duty and usage and satisfactory maintenance.
 - Installation is assumed to be in accordance with relevant codes, to manufacturer's recommendations or accepted practice.
 - Maintenance is assumed to be carried out in accordance with relevant codes or accepted practice and adequate to optimise the service life of the asset.
- In some cases, assets are not replaced but renewed to provide extended design life.
- Costs should not be compared with any historic expenditure as it is unlikely to be maintained on a like for like basis with good practice. Costs will be updated once detailed design is available.
- No replacement of items due to technical obsolescence is considered.
- No warranty benefits have been considered as the extent of these vary significantly between products and services.
- Works are assumed to be fit for purpose and as a result assume no ground movements (including settlement or vibration) or failure, cracking structural elements that would give rise to premature renewal or replacement tasks.
- Estimated operational costs only for the items listed in the capital cost estimates. It is a provisional cost, and we have no detailed information at this stage.
- No vegetation maintenance allowance has been included.
- The Base Case assumes a greenfield site.
- This high-level model does not account for the increasing maintenance cost requirements due to ageing of assets.
- The operational period included in the opex costs for Stage 1 is 30 years, and the opex period included in the estimate for Stage 2 is 25 years.

The following costs have been excluded:

- Depreciation, write-down and amortisation costs. Such costs are used for financial and taxation purposes only.
- Insurance.
- Vandalism – since this event may not occur or the cost of fixing items after vandalism (if any) is unknown.
- Currency fluctuations and financing costs that would affect plant and equipment procurement costs have not been considered.
- Any maintenance savings that would be realised as a result of less breakdowns / failure of equipment when compared to the existing assets.
- Unknown or adverse site conditions during the 30-year operational term.
- Operational mobilisation and transitioning costs.
- Energy saving from solar panels installation.
- Earthworks (within the direct capital costs).
- Recoverable GST.

7.5.3 Reliability of Estimates

WT prepared these cost estimates in February 2022 in line with the methodology and assumptions outlined in this Section. Where possible, WT has sourced costs from recent projects and recent market data for the supply and installation of materials such as boundary fencing and a warehouse. The costs exclude estimates for property acquisitions on the basis that the current designs indicate no acquisitions will be required, noting this is subject to further analysis at future gates (subject to the Proposal proceeding).

8. Benefits

Key messages

- The Proposal has the potential to deliver a number of direct and indirect operating benefits to local industries and community in the Central West region. These benefits are driven by addressing the opportunities as identified in the ILM.
- An economic benefits appraisal has been undertaken on the Preferred Option for a consolidation centre constructed in Parkes. The benefits reflect the demand analysis in Section 5 and the staged approach to construction as noted in Section 6.8.2.
- The estimated benefits were based on the phased construction, with the facilities to allow fertiliser to be consolidated allowing rail access accruing benefits at a delayed date.
- The Proposal is estimated to result in \$35.9 million of benefits (discounted at 7% p.a. to FY22) over a 30-year appraisal period. This includes \$22.0 million in direct benefits and \$13.9 million in indirect benefits.
- For this Proposal, the benefits are achieved by shifting freight from road to rail, resulting in road vehicle operating cost (VOC) savings, and indirect benefits such as reduced road damage cost savings, road environmental impacts and road crash costs. These benefits are partially offset by operating dis-benefits associated with increased usage of the intermodal pathway facilitated by the consolidation centre (i.e. the Proposal pathway) and increased rail usage.
- A number of benefits are yet to be quantified but are considered qualitatively in this Section. These include residual value benefits and generated demand benefits.
- Refinement of the demand estimates and the Proposal specifications for the Preferred Option (Option 1) at Gate 3 is recommended (if the Proposal proceeds through Gate 2), in order to support further analysis and quantification of associated benefits.

8.1 Overview

An economic benefits appraisal has been undertaken on the Preferred Option for a consolidation centre constructed in Parkes within the Central West. The benefits reflect the demand analysis in Section 5⁴⁷ and the staged approach to construction as noted in Section 6.8.2.

This appraisal uses a rail freight CBA framework to assess the incremental change in economic value attributable to the Proposal. Benefits are derived from the transportation from freight volumes and include the following benefit drivers:

- Rail benefits – benefits associated with improvements to rail operations.
- Road benefits – benefits associated with mode shift of freight from road to rail.
- Supporting rail infrastructure benefits – benefits associated with intermodal terminal access and operations and the facilitation of freight onto rail.

Table 36 summarises the results of the benefits appraisal with further information on the anticipated benefits provided in the sub-sections below. Rows highlighted in green show direct benefits and rows not highlighted show indirect benefits.

⁴⁷ For the purposes of this analysis and consistent with Section 5, it is assumed that fertiliser volumes are processed through the facility from FY31 after the second stage of construction is completed.

Table 38 Summary of estimated benefits (PV FY22\$, \$million, real, discounted at 7%)

	Proposal benefit
Rail benefits	
Rail environmental impacts	(3.8)
Total rail benefits	(3.8)
Supporting rail infrastructure benefits	
Rail access travel time	(0.5)
Rail access VOC	(4.2)
Rail access damage cost savings	(0.6)
Rail access environmental impacts	(1.3)
Rail access crash costs	(0.1)
Total supporting rail infrastructure benefits	(6.7)
Road benefits	
VOC savings (resource correction)	26.7
Road damage cost savings	8.3
Road environmental impacts	10.3
Road crash costs	1.1
Total road benefits	46.4
Total benefits	35.9

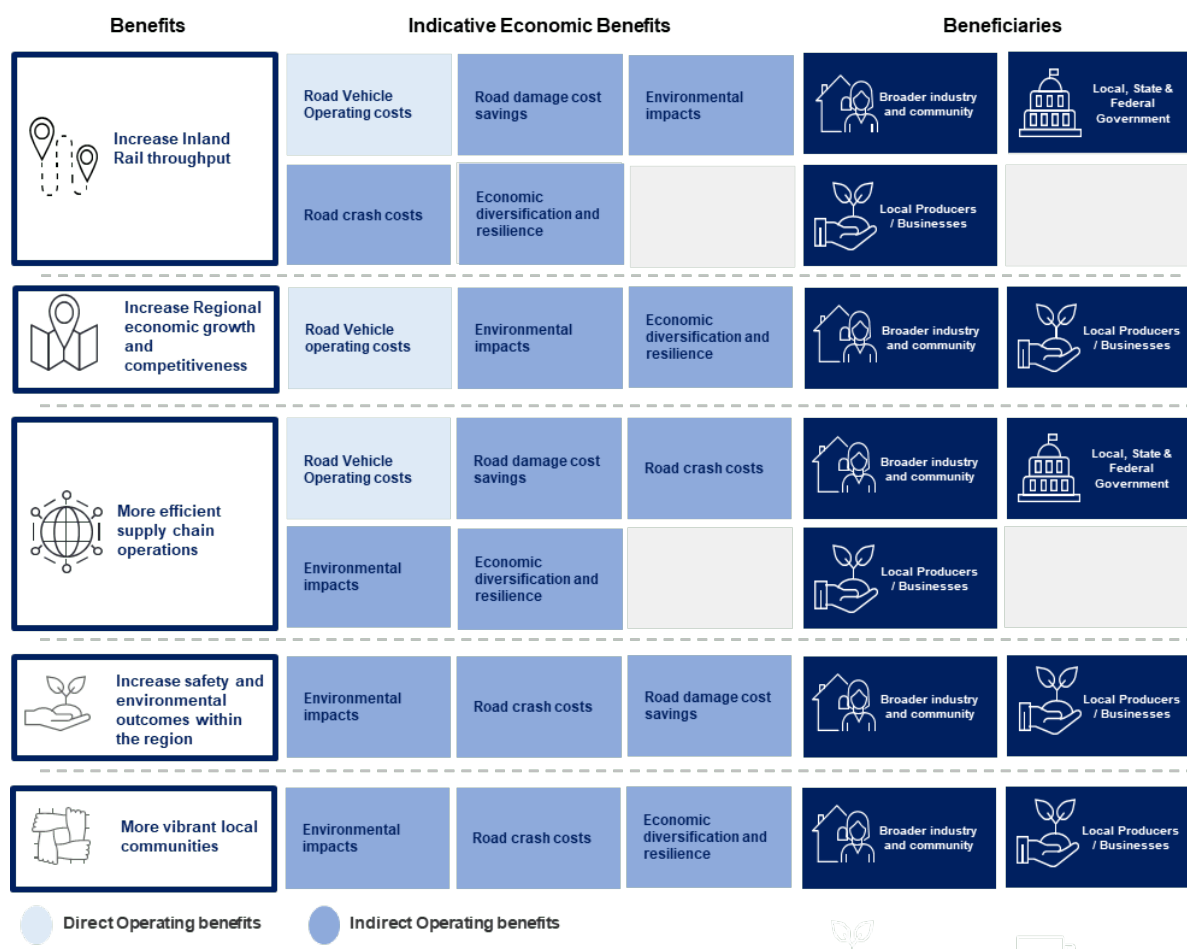
Source: EY analysis numbers may not sum due to rounding

As shown in Table 36, supporting rail infrastructure benefits are negative due to increased use of the intermodal pathway created by the Proposal (i.e., access to rail through the consolidation centre). These, however, are offset by benefits associated with the reduction of truck usage that would have otherwise occurred under the Base Case. The rail benefits are also negative, representing the impact of additional freight travelling on rail.

While the direct and indirect operating economic benefits have been indicatively quantified at Gate 2, if the Proposal is approved to proceed, these estimates will be revised, and any data gaps will be addressed where possible as part of the benefits appraisal in Gate 3. In addition, the value of other benefits that have not been quantified as part of this Gate 2 Study will be quantified where possible as part of the rapid CBA at Gate 3 and Gate 4 of the Gateway Assessment Framework, should the Proposal proceed.

There is a direct connection between the benefits appraisal and the options analysis as the benefits are linked to the problem statements (identified in the ILM) which are the basis of the evaluation criteria used in the options analysis. Figure 29 presents an overview of the indicative economic benefits and beneficiaries that may result from the Proposal and how they relate to the benefits identified in the ILM.

Figure 29 Indicative economic benefits and beneficiaries from the Proposal



Source; EY analysis

Further information on the benefits assessed as part of this Proposal, including a detail methodology, is provided in Appendix F.

8.2 Direct operating benefits

Direct operating benefits reflect the incremental value that the Proposal will deliver for users such as freight producers and freight operators. The direct operating benefits are \$22.0 million (discounted at 7% p.a. to FY22) over a 30-year appraisal period.

For this Proposal, the key direct operating benefits are achieved by shifting freight from road to rail and delivering road VOC savings. These key direct operating benefits are offset by direct operating dis-benefits associated with increased usage of the intermodal pathway (i.e. the Proposal pathway).

Table 37 summarises these results and the approach undertaken. The data gaps noted will be addressed as part of the benefits appraisal in Gate 3, if the Proposal is approved to proceed at Gate 2. The methodology for the calculation of benefits and key assumptions are shown in further detail in Appendix F.

Table 39 Direct operating benefits⁴⁸

Benefit	Description and drivers for this benefit	Method of quantification	Data gaps
Road vehicle operating cost savings	<p>Road VOC reflect the user cost of operating a road vehicle and include fuel, tyres, oil and maintenance. VOC cost savings result from fewer resources being used in the economy and reflect differences in resources costs (i.e. excluding excise and GST) between the base and project case.</p> <p>The Proposal is expected to result in road VOC savings through modal shift diverting freight from road to rail at the consolidation centre in Parkes SAP.</p>	<p>Estimation of road VOC savings is based on the approach outlined in TfNSW's <i>Technical Note on Calculating Road Vehicle Operating Costs</i> (2020). As the road network is treated as 'parallel infrastructure' (in line with the National Guidelines for Transport System Management (NGTSM)), only the resource cost correction component is captured in the analysis.</p> <p>The initial, net indicative estimates which is subject to refinement is:</p> <ul style="list-style-type: none"> \$26.7 million 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates.</p>
IMT access benefits	<p>IMT access benefits reflect the value to freight producers from more efficient access to an IMT. This may reflect transport improvements, such as reduced travel times, associated with accessing an IMT or it may reflect increased capacity allowing more freight to be transported by rail compared to the Base Case.</p> <p>The Base Case for this Proposal assumes significant volumes of the contestable freight will travel by road. As this Proposal will result in mode shift to rail, a dis-benefit will result from travel times associated with accessing the consolidation centre for export freight, and in last mile access to farms in the Central West for fertiliser.</p>	<p>The approach to estimating IMT access benefits is based on the approach outlined in the NGTSM for 'upstream infrastructure'. A change in the location of an IMT will affect the transport costs associated with accessing the terminal. These impacts are estimated in line the with the standard approach for transport benefits using parameters values outlined in the relevant sections above.</p> <p>The initial, net indicative estimates which is subject to refinement is:</p> <ul style="list-style-type: none"> (\$4.7 million) 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates</p>

8.3 Indirect operating benefits

Indirect operating benefits reflect the incremental value that the Proposal will bring for non-users compared to the Base Case. Indirect operating benefits identified include environmental impacts, road damage cost savings and road safety impacts. The indirect operating benefits are \$13.9 million (discounted at 7% p.a. to FY22) over a 30-year appraisal period.

Any data gaps will be addressed as part of the benefits appraisal in Gate 3, should the Proposal be eligible to proceed. The calculation methodology and key assumptions are shown in further detail in Appendix F. Table 38 presents an overview of the indirect operating benefits.

⁴⁸ All initial, indicative benefit estimates presented within this table are shown in \$, discounted at 7% to FY2022.

Table 40 Indirect operating benefits⁴⁹

Benefit	Description and drivers for this benefit	Method of quantification	Data gaps
Environmental impacts	<p>Environmental impacts relate to externalities generated by road and rail freight. Environmental externalities include air pollution, green greenhouse gas emissions, noise, water, nature and urban separation. Rail environmental externalities tend to be lower than road externalities, as do journeys through rural areas compared to urban areas.</p> <p>The Proposal is expected to result in environmental benefits through modal shift and diverting more freight from road to rail. However, the environmental benefits due to the modal shift from road to rail will be partially offset by rail environmental impacts as a resulting from increased rail usage.</p>	<p>Environmental impacts have been estimated by applying unit parameter values for rail and road freight environmental externalities to changes in Gross Tonne Kilometre (GTKs) and Vehicle Kilometre Travelled (VKT's) respectively. A distinction is also made between kilometres travelled in urban versus rural areas. Values are based on the TfNSW <i>Economic Parameter Values</i> (2020) and escalated where necessary to 2022 prices using the ABS' CPI index.</p> <p>The initial, net indicative estimate which is subject to refinement is:</p> <ul style="list-style-type: none"> \$6.6 million 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates.</p>
Road damage costs	<p>As the CBA includes ongoing rail maintenance costs, it is relevant to also consider any change in road damage or maintenance costs between the base and project cases.</p> <p>The Proposal is expecting to result in road damage cost savings as result of diverting more trucks off the road network and moving freight onto rail. This will result in less wear and tear on the road network and reduced road maintenance.</p>	<p>Road damage cost savings have been estimated by applying unit parameter values for road damage to the change in VKTs between the base and project case. The approach also considers the possibility of a change in fleet composition as a result of the Proposal. These values are based on the TfNSW <i>Economic Parameter Values</i> (2020) and escalated where necessary to 2022 prices using the ABS' CPI index.</p> <p>The initial, net indicative estimate which is subject to refinement is:</p> <ul style="list-style-type: none"> \$8.3 million 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates.</p>
Safety benefits	<p>Rail freight has a lower accident rate than road. Safety benefits arise from reduced crashes on the rail and road network.</p> <p>The Proposal is expected to result in road safety benefits through modal shift diverting freight from road to rail through access to the consolidation centre.</p>	<p>Safety benefits have been estimated by applying unit parameter values for rail and road crash rates to changes in GTKs and VKT's respectively. These values are based on the TfNSW <i>Economic Parameter Values</i> (2020) and escalated where necessary to 2022 prices using the ABS' CPI index.</p> <p>The initial, net indicative estimate which is subject to refinement is:</p> <ul style="list-style-type: none"> \$1.1 million 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates.</p>

⁴⁹ All initial, indicative benefit estimates presented within this table are shown in \$, discounted at 7% to FY22.

Benefit	Description and drivers for this benefit	Method of quantification	Data gaps
IMT access externalities	<p>Just like road use more generally, transporting freight to an IMT for loading onto rail generates a range of externalities. These externalities include environmental impacts, road damage and crash cost.</p> <p>The Proposal is expected to increase IMT access externalities through road travel required to access the consolidation centre or in the case of fertiliser accessing farms from the centre.</p>	<p>IMT access externalities have been estimated by applying unit parameters for road environmental impacts, damage costs and safety benefits to changes in VKTs associated with accessing an IMT. This approach is based on Australian Transport Council (ATC) guidance for 'upstream infrastructure'.</p> <p>The initial discounted, net indicative estimate which is subject to refinement is:</p> <ul style="list-style-type: none"> • (\$2.1 million) 	<p>Refinement of Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g. other facilities).</p> <p>Refinement of demand estimates.</p>

8.4 Other benefits

Other benefits refer to the benefits that could potentially be realised as a result of the Proposal that will not be quantified as part of this Gate 2 Pre-Feasibility Study. These involve the flow-on benefits of the Proposal, based on the economic benefits detailed in the sections above. The value of these benefits will be considered as part of Gate 4 of the Gateway Assessment Framework if the Proposal is eligible to proceed at the Gate 2 and Gate 3 stages and if deemed appropriate. These other benefits are shown in Table 39 below.

Table 41 Other benefits

Benefit	Description and drivers for this benefit	Method of quantification	Data gaps
Residual value	Assets created as part of this Proposal have economic lives that extend beyond the final year of the evaluation period. In Line with ATC guidance, a residual value was assigned to fixed infrastructure where asset lives extend beyond the final evaluation period.	Residual value has been estimated following the straight-line depreciation method as recommended in the TfNSW Economic Parameter Values (2020) and escalated where necessary to 2022 prices using the ABS' CPI index.	<p>Proposal Options, following site location determination, and corresponding service outcomes.</p> <p>Refinement of assumptions with respect to other potential pathways in the absence of the Proposal (e.g., other facilities).</p> <p>Refinement of demand estimates.</p>

8.5 Reliability of the estimates

The identification and assessment of benefits associated with the Proposal has been undertaken in accordance with the following guidelines:

- Nine-Squared 'Guidance on Economic Analysis' (2020).
- Transport for NSW ("TfNSW") 'Cost-Benefit Analysis Guide' (2019).
- Infrastructure Australia ("IA") 'Assessment Framework' (2018).
- NSW Treasury 'TPP17-03 NSW Guide to Cost Benefit Analysis' (2017).
- Queensland Treasury 'Project Assessment Framework: Cost-benefit analysis' (2015).
- Victorian Department of Treasury and Finance 'Economic Evaluation for Business Cases Technical guidelines' (2013).

- Australian Transport Assessment and Planning (“ATAP”) ‘National Guidelines for Transport System Management in Australia’ (2006).

Note that benefit estimates are highly subject to the demand estimates including forecasts of induced demand. Benefit accuracy is therefore subject to the same limitations and risks that underpin the demand analysis.

In addition, benefits are based on service outcomes that will be delivered by the Proposal including train operations and track technical standards. Deviations in service outcomes from those forecasted will affect the realisation of the benefits quantified.

9. Funding and Financing

Key messages

- Consistent with the early stage of the Proposal, no funding or financing commitments have been finalised at this stage.
- The stakeholder process undertaken as part of this Gate 2 process did not identify any specific funding or financing commitments at this stage.
- State Government initiatives and Federal Government programs have been identified as potential financing sources. Eligibility requirements would need to be considered when details of the delivery proponent, partnerships and financing arrangements are further developed.
- There is an opportunity for investments to be re-couped through charges or for a prospective operator to contribute to the build. However, an operator has not been consulted with as part of the Gate 2 analysis and will be considered as part of future stakeholder consultation in Gate 3, should the Proposal proceed.
- If the Proposal proceeds through Gate 2, the funding analysis at Gate 3 will focus on the Proposal's financial viability. This analysis will build on any additional funding support provided by third parties including but not limited to stakeholders consulted at Gate 2 and potential operators of the Proposal.

9.1 Sources of project funding and project financing options

The potential sources of funding for the Proposal are set out below. These are largely high-level at this stage, and overall do not pertain to specific commitments. Desktop analysis has identified several potential sources of Australian Government and State Government funding that could be available to support this Proposal. While the stakeholder consultation process undertaken as part of this Gate 2 process did not identify any specific funding or financing commitments, many stakeholders consulted were supportive of the Proposal.

At Gate 2, the Proposal is at an early stage of maturity and the extent to which risks, and funding conditions can accurately be identified is constrained by the corresponding level of financial commitments. This will further be refined in future Gates if approved to proceed following Gate 2.

9.1.1 State Government Funding

Growing Local Economies⁵⁰

Growing Local Economies is a \$500 million fund available under the Restart NSW Fund, designed to invest in regional NSW projects that deliver a net economic benefit to residents and businesses in regional NSW. The Growing Local Economies Fund is part of the NSW Government's \$2 billion Regional Growth Fund and is designed to deliver economic growth and productivity in regional NSW. The fund will invest in infrastructure projects right across regional NSW to ensure economic prosperity is spread around the state.

The objective of the fund is to support projects of economic significance in regional NSW, which draw on the strengths or potential strengths of each Functional Economic Region. Funding is available to Councils or joint organisations of Councils. The minimum grant amount is \$1 million and there is no maximum grant amount.

All projects must have a minimum financial co-contribution of 25% of the total grant amount. The co-contribution for the project must be from sources other than the Restart NSW Fund and must be confirmed.

The eligibility criteria include infrastructure that:

- Is for the use and benefit of multiple organisations or businesses.
- Enables or brings forward investment or productivity enhancements for new or existing industry.
- Delivers a net economic benefit to residents and businesses located in NSW.

⁵⁰ NSW Government, Growing Local Economies, <https://www.nsw.gov.au/regional-growth-fund/growing-local-economies>.

- Would likely not proceed without NSW Government funding.

The Proposal meets the eligibility criteria for the Growing Local Economic fund as it supports multiple organisations including SMEs in the Central West delivering economic benefits to residents and businesses located in NSW. The main objectives of the Proposal also align with the eligibility criteria relating to enabling forward investment or productivity enhancements for new and existing industry.

The program has had a temporary pause on new applications as of 14 July 2019 while a review is being undertaken to ensure the program is being administered effectively and is on track to deliver the stated objectives.

9.1.2 Local government support

No local government support has been obtained at this stage of the Study.

9.1.3 Australian Government Funding

Currently, there is no specific Commonwealth funding available for this Proposal, however, there are several potential sources of Australian Government funding that may be relevant to this Proposal. At this stage, these are broad programs rather than specific funding measures or commitments for this Proposal. The funding contribution would be decided upon by the specific funding program and would be subject to the Commonwealth budget and approvals process. An overview of relevant potential funding programs / sources is set out below..

Building Our Future – Infrastructure Investment Program

The Australian Government has announced a \$10 billion increase in investment for road, rail and community infrastructure projects across Australia in the 2022-23 Federal Budget. This brings the total investment in the program, which is considered a key component of meeting the national freight challenge, from \$110 billion to \$120 billion over the coming 10 years. A major component of this plan is the Infrastructure Investment Program, whereby the Department is collaborating with all Australian States and Territories to develop much needed infrastructure across Australia.

Funding for Interface Improvements

Building on the success of the II Program, the Australian Government has also allocated \$150 million to fund the delivery of priority infrastructure projects through the II Program in the 2022/23 Budget. This funding is restricted to projects that have completed a Strategic Business Case through the Inland Rail Interface Improvement program.⁵¹ More details will be provided by the Government soon and will be explored in Gate 3, should the Proposal proceed.

Community Development Grants Programme

In 2013, the Australian Government developed the Community Development Grants (CDG) Programme. This grant program is led by the Department and aims to strengthen the sustainability, diversity and capacity of cities and regional economies. The objective of the program is to support needed infrastructure that promotes stable, viable, secure local and regional economies. There is no minimum or maximum grant amount, but the grant cannot exceed the amount that the Government has committed to individual projects. Funding will be available for projects identified by the Australian Government that are scheduled for competition and final payment made before 30 June 2026.

Federal Consolidated Revenue Fund

Federal consolidated revenue could be a source of Australian Government funding for the Proposal, given its investigation through the Department's Inland Rail Interface Improvement Program. The Consolidated Revenue Fund is established by section 81 of the Constitution. All monies received by the Commonwealth must be paid into the Consolidated Revenue Fund. It is a constitutional requirement that, before the Government may spend any monies, an Act of the Parliament providing for an appropriation must authorise the release of the necessary monies from the Consolidated Revenue Fund. While high-level, this is included here as a potential funding source, as the Australian Government could consider funding towards this Proposal through a program that could deliver funding towards selected projects assessed as feasible under the II Program.

⁵¹ <https://www.inlandrail.gov.au/for-business/interface-improvement-program/funding-for-interface-improvements>

9.1.4 Private sector support

Overview of industry support

The Stakeholder Consultations undertaken as part of the Gate 2 process indicated potential exploration of financial support from several stakeholders, outlined in Table 40.

Table 42 Financial and in-kind support

Name of stakeholder	Support indicated	Amount indicated
Hassall Trading	Expressed positive sentiment towards the Proposal. Letter of support provided. However it is acknowledged their preference for the location of the facility is Forbes. Their support for the Preferred location is to be validated in future Gates, should the Proposal Proceed.	TBD
Orange Region Vignerons Association	Expressed positive sentiment towards the Proposal. Letter of support provided. However it is acknowledged their preference for the location of the facility is Orange. Their support for the Preferred location is to be validated in future Gates, should the Proposal Proceed.	TBD
Superbee Honey	Expressed positive sentiment towards the Proposal. Letter of support provided. However it is acknowledged their preference for the location of the facility is Forbes. Their support for the Preferred location is to be validated in future Gates, should the Proposal Proceed.	TBD

Further investigation of private sector support for the Proposal – inclusive of potential contributions and in-kind support – will be investigated as analysis progresses on this Proposal (i.e. at the Gate 3 stage if the Proposal proceeds at Gate 2).

Potential for operator contributions, user charging and value capture opportunities

There is an opportunity for investments to be re-couped through charges or for a prospective operator to contribute to the build. At this stage of the Proposal, potential operators have not been consulted with and will be considered as part of future stakeholder consultation in Gate 3.

Further analysis regarding opportunities for operator contributions, user charging and value capture opportunities will be considered at the Gate 3 stage for this Proposal (should the Proposal progress through Gate 2); including how it may impact on the Proposal's financial viability.

10. Potential Regulatory Requirements

Key messages

- The potential regulatory requirements analysis has been undertaken for the Preferred Option only (Parkes). Due to the absence of an exact site location within the Parkes SAP, initial areas of concern could not be identified. However, it is acknowledged that the development of a 'freight consolidation facility' or 'warehousing and distribution centre' is a land use permitted with consent in the Regional Enterprise Zone, which comprises almost all of the SAP. Further, in complying with certain requirements (environmentally sensitive areas, heritage etc.) the Proposal could proceed as complying development.
- The NSW Government has recognised the area for future growth and investment through the establishment of the Parkes SAP.
- The State Environmental Planning Policy (Activation Precincts) 2020 establishes a streamlined development assessment process around a government led Master Plan and Delivery Plan, and the issue of Activation Precinct Certificates (APC) by the NSW Regional Growth Development Corporation for development that is consistent with these plans.
- Enabling works approvals (i.e. roads, bridges, landscaping, water supply and sewage connections), have already been issued and works are underway for the development of key transport infrastructure and utilities within the Parkes SAP.
- The Proposal would be assessed against the SAP Master Plan and Delivery Plan. For delivery of the Proposal by other than a public authority an application would be made to Regional Growth NSW Development Corporation (RGDC) for an APC. The Proposal would then proceed via either a complying development certificate (CDC) issued by a certifier, or in certain circumstances (i.e. where environmentally sensitive areas or heritage items or places are impacted), a development application would be required subject to the development assessment and consent requirements of Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), with the Parkes Shire Council the consent authority.
- The Activation Precinct State Environmental Planning Policy (Activation Precinct SEPP) includes an Environmentally Sensitive Areas Map and the SAP Master Plan identifies areas of high ecological value to be retained and avoided by development proposals. If these areas could not be avoided and the Proposal were determined likely to have a significant impact on a listed threatened species, then a Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) approval would be required. Similarly impacts on native vegetation and threatened species may trigger requirements of the NSW Biodiversity Offsets Scheme.
- Development proposed in an area impacting Aboriginal or cultural heritage will require a development consent process and matters to be addressed under the Heritage Act 1977, which will have additional time and cost implications.
- The proposed freight consolidation facility and associated activities are unlikely to constitute any of the activities in Schedule 1 of the Operations Act 1997 (PoEO Act), as such Environmental Pest and Lawn Services (EPLs) are unlikely to be required.
- Once a Proposal site is identified, review of the SAP Master Plan and Delivery Plan performance criteria will identify constraints and guide the development of a concept design. Searches of any conservation, historic or heritage areas, and contaminated land registers can be undertaken that may trigger requirements for a development consent and other approvals.
- Ancillary works with public roads or regulation of traffic would require approvals under the Roads Act 1993.

10.1 Parkes SAP

The Preferred Option is located within the Parkes SAP. The Parkes SAP covers an area of approximately 4,800 hectares at the junction of the Inland Rail and the Trans-Australia Railway.

The Parkes SAP is the first SAP established under the *State Environmental Planning Policy (Activation Precincts) 2020*. The Activation Precincts SEPP was set up to streamline planning processes and guide delivery of development and employment growth within SAPs in regional locations in NSW.

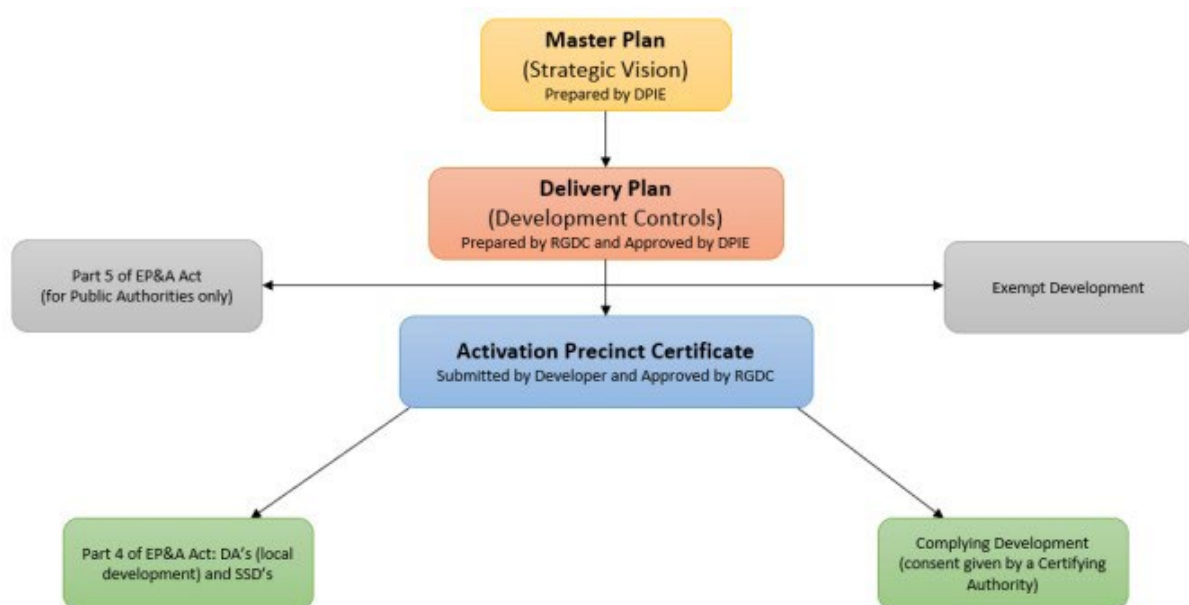
The Activation Precincts SEPP is government led and requires upfront planning and environmental assessment in the preparation of the:

- Master Plan to be prepared and approved by the Minister/Department of Planning Industry and Environment (DPIE).
- Delivery Plan to be prepared by the Regional Growth NSW Development Corporation (RGDC).

The Activation Precincts SEPP also sets up a process for application for Activation Precinct Certificates (APC) to be made to, assessed, and where consistent with the Master Plan and Delivery Plan, approved by RGDC.

The Master Plan and Delivery Plan enable most development to be undertaken as complying or exempt development. However, requirements for development consent under Part 4, or Part 5 assessment for Public Authority development under the *Environmental Planning and Assessment Act 1999* (EP&A Act) will still apply in certain circumstances where the complying development provisions of *State Environmental Planning Policy (Activation Precincts) 2020* (Activation Precincts SEPP) cannot be met. Figure 30 shows the planning framework and process for development established for SAPs.

Figure 30 Process for development in a SAP



Source: DPIE, 2020

Master Plan

The Parkes SAP Master Plan was produced in 2020 by DPIE and approved by the Minister. The Parkes SAP Master Plan identifies the performance criteria for environmental considerations such as noise, biodiversity, heritage and water management. The Parkes SAP Master Plan also identifies the matters to be addressed as part of a Delivery Plan.

Technical experts were engaged to undertake strategic environmental and planning studies as part of the Master Plan. The technical studies that informed the development of the Master Plan include:

- Air Quality and Odour.
- Biodiversity Assessment.
- Bushfire Construction and Opportunities Assessment.
- Community and Social Infrastructure Needs Assessment.
- Economic Analysis Report.

- Environmental, Heritage and Sustainability Assessment Summary Report.
- Environmentally Sustainable Development Plan.
- Flood and Water Quality Management Study.
- Geology, Soil and Contamination Preliminary Site Investigation.
- Groundwater Desktop Study.
- Infrastructure and Transport Plan.
- Noise and Vibration Assessment.
- Parkes SAP Structure Plan (the Structure Plan).

These technical studies would be further reviewed and assessed against the Proposal if the Proposal proceeds to Gate 3 to ensure consistency with the objectives of the Master Plan.

The Structure Plan sets out the vision for the SAP identifying six sub-precincts tailored to the strategic environmental impact and economic development aspirations (refer to diagram in Figure 31 and corresponding legend in Figure 32). In addition to these sub-precincts, the Structure Plan identifies land adjacent to the rail lines as an overlay area that is strategically important to be preserved for rail and transport infrastructure.

Figure 31 Parkes SAP Structure Plan

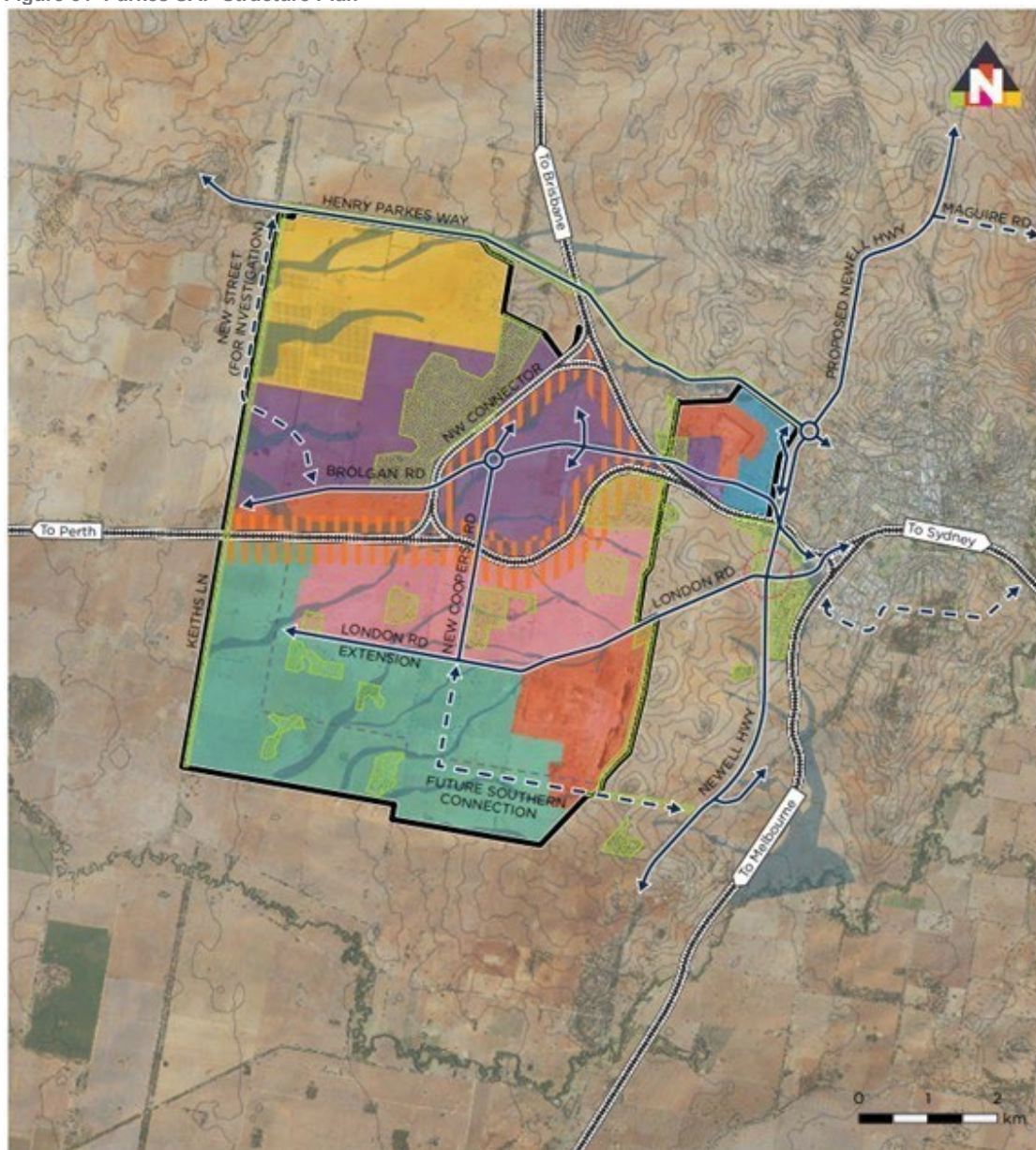


Figure 32 Legend for Parkes SAP Structure Plan

Legend

	Special Activation Precinct boundary		Resource Recovery and Recycling Sub-precinct Located to capitalise on recent level-crossing upgrades and the inter-modal transport network, this area is ideally placed to receive and re-process waste and resources, championing circular economy principles as part of an Australian-first Eco-Industrial Park.
	Solar Sub-precinct Recognises the significant investment already made in renewable energy generation and supports the Special Activation Precinct to become Australia's first UNIDO Eco-Industrial Park		Intermodal and rail terminal facility area The land adjacent to the rail line that is strategically important and is intended to preserve opportunities for rail and transport infrastructure crucial to maintaining Parkes Special Activation Precinct competitive advantage as a rail-focused freight and logistics hub.
	Parkes Enterprise Sub-precinct Located on and around a triangle of new and existing railways which connect the national rail networks at Parkes. It will accommodate a diversity of businesses including rail and road transport terminals, warehousing, advanced manufacturing and food processing businesses.		High value vegetation and regeneration areas High value vegetation that has already been identified for preservation.
	Intensive Livestock Agriculture Sub-precinct Intended for abattoir and other livestock value-adding businesses, this Sub-precinct is located away from the Parkes township and the Parkes Enterprise Sub-Precinct employment areas north of the Sydney-Perth rail line, enabling buffering of impact generating activities.		Stormwater flow paths Stormwater design modelling to accommodate stormwater management and detention areas that responds to a range of flooding events.
	Commercial Gateway Sub-precinct Provides a transition between the industry uses of the Special Activation Precinct and the township of Parkes. The Precinct is located prominently alongside the proposed Newell Highway bypass of Parkes, it also offers business opportunities to service local and travelling populations.		New trunk roads within the Precinct New streets within the precinct to be delivered by the Regional Growth NSW Development Corporation or as part of private development.
	Mixed Enterprise Sub-precinct Provides flexibility for a range of uses and acts as a transition between lower impact and higher impact Sub-precincts. This Sub-precinct will target businesses with needs for moderate sized land, flexibility is retained to allow smaller lots or other permitted land uses to be developed, responding to market demand.		New streets (for investigation) The detailed design and implementation of proposed new roads (within the Precinct only) to be determined by the Delivery Plan.
			Railway
			1km buffer zone
			Future upgrade (for investigation by TfNSW)

Source: Parkes Master Plan, DPIE, 2020

Delivery Plan

A Delivery Plan for the Parkes SAP has been prepared by the Regional Growth NSW Development Corporation. The Delivery Plan was subject to public notification and submission at the end of 2021 and approved by the Planning Secretary on 25 November 2021.

A Delivery Plan must be consistent with the Master Plan. The approved Delivery Plan contains the following information for the Parkes SAP:

- Specific precinct design guidelines for development.
- Existing and proposed infrastructure, public open space, public transport and road networks.
- Monitoring, reporting and compliance obligations.
- Assessment criteria for development, presenting acceptable solutions, alternate solutions and unacceptable solutions.
- Mapping of precincts, risks, constraints and preferred locations.

The Delivery Plan is the key reference document by which concept plans for the Proposal would be developed to ensure consistency with the overall planning framework, fast track the development approval processes, and to minimise environmental impacts.

The Assessment Criteria in Section 5 of the Delivery Plan include land use for warehouse or distribution centre and freight transport facilities as acceptable solutions in the following sub-precincts:

- Regional Enterprise sub-precinct.
- Resource Recovery and Recycling sub-precinct.

Acceptable solutions for land in the Intermodal and Rail Terminal Facility Overlay include container storage, collection and transfer, road and rail infrastructure facilities and distribution centres, or other facilities directly supporting transport of goods to and from rail.

Activation Precinct Certificate (APC)

The delivery of development within the SAP is led by RGDC. Proposed development within the SAP requires an APC to be sought from RGDC, with the exception of 'exempt development' and 'development without consent' by Public authorities (i.e. development under Part 5 of the EP&A Act).

An APC ensures development is consistent with the staging and vision of the SAP and complies with the Master Plan and Delivery Plan. The Regional Growth NSW Development Corporation is responsible for issuing an APC.

Once an APC has been issued, development is then assessed and approved through one of the following pathways (refer to Figure 30):

- Complying Development under the EP&A Act through the issuing of a Complying Development Certificate (from Councils or a private certifier).
- Development Applications (DA) or State Significant Development (SSD) under Part 4 of the EP&A Act.

It is envisaged that the assessment and issue of an APC will significantly streamline and fast-track these further approval processes.

Council remains the consent authority for local DAs and the Minister continues to be the consent authority for SSD.

10.2 Environmental and planning regulations

In addition to the review of the Parkes SAP Master Plan and Delivery Plan, a desktop review was undertaken to identify environmental and planning regulations that may be triggered by the Proposal. The desktop search comprised a review of local environmental plans (LEP), state government websites and data services, and Commonwealth government websites and data services.

The potential environmental and planning regulatory requirements identified as applicable to this Proposal are set out in Table 41.

Table 43 Potential environment and planning regulatory requirements

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
Commonwealth					
Biodiversity					
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Environment & Planning	<p>The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the EPBC Act as Matters of National Environmental Significance (MNES). The EPBC Act requires the assessment of whether the Proposal is likely to significantly impact on MNES or Commonwealth land.</p> <p>Section 18 and 18A outlines a person must not take action that has, will or is likely to have a significant impact on a listed threatened species. Section 25 outlines the requirement for approval of prescribed actions.</p> <p>Section 26 and 27A outlines the protection of the environment from actions involving Commonwealth land and offences relating to Commonwealth land. Section 28 identifies the requirement for approval of activities of Commonwealth agencies significantly affecting the environment.</p>	<p>The Activation Precinct SEPP includes an Environmentally Sensitive Areas Map and the SAP Master Plan identifies areas of high ecological value.</p> <p>The Delivery Plan requires a report from a suitably qualified person to address any potential adverse impacts on, among other things, a native vegetation community, habitat of any threatened species, a regionally, state or nationally significant species, and a wetland. If the Proposal were determined likely to have a significant impact on a listed threatened species, then an EPBC approval would still be required.</p>	If potential impacts to MNES are identified, commence early consultation with Commonwealth Department of Agriculture, Water and the Environment (DAWE) to determine potential approval pathway.	If the Proposal location impacts the identified areas of high ecological value, undertake an ecological assessment to determine significance of potential impacts under the Delivery Plan and provisions of the EPBC Act on the identified MNES.

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
State					
Planning					
<p><i>Environmental Planning and Assessment Act 1979</i> (EP&A Act)</p> <p>Environmental Planning and Assessment Regulation 2000</p>	Environment & Planning	<p>Part 4, of the EP&A Act identifies the requirements for development assessment and consent.</p> <p>Division 4.1 Section 4.2 specifies that development consent is required to carry out any development that an environmental planning instrument specifies may not be carried out except with development consent.</p> <p>Division 4.2 prescribes that the consent authority for state significant development is the Independent Planning Commission (IPC) (where declared to be) or it is the Minister.</p> <p>Division 4.3 addresses the consent process for development that needs consent. This includes in Section 4.10, development that is declared designated development by an EPI or the regulations.</p> <p>Division 4.5 addresses complying development and specifies that complying development that complies with the standards applicable to the development may be carried out with the issue of a complying development certificate.</p> <p>Division 4.7 addresses state significant development (SSD), which is development declared to be state significant under a SEPP or Ministerial planning order. Section 4.41 prescribes that the following are not required for SSD that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):</p>	<p>It is anticipated that the Delivery Proponent would not be a public authority and, as such, the provisions of Part 5 of the EP&A Act, which commonly provide for the development of rail and road infrastructure as development without consent, do not apply. Part 5 is reserved for public authorities.</p> <p>The Proposal would be assessed against the SAP Delivery Plan for the issue of an APC. The Proposal would then proceed through either a complying development certificate issued by a certifier, or a development application subject to the development assessment and consent requirements of Part 4 of the EP&A Act, with the Parkes Shire Council the consent authority.</p> <p>If a development application is required and the estimated cost exceeds \$30 million, the Proposal would be declared SSD (see <i>SEPP State and Regional Development</i> below).</p> <p>If the Proposal triggers any of the requirements of designated development in Schedule 3 of</p>	<p>The operation of the Activations Precinct SEPP (discussed below) should streamline delivery of the Proposal under this Act providing the opportunity for it to proceed under a CDC approval.</p> <p>A statement of environmental effects (SEE) would be required to accompany a DA if triggered, or an EIS would be required if Parkes Shire Council declared the Proposal designated development. Both of which would have time and cost implications.</p> <p>If in excess of \$30 million, an Environmental Impact Assessment (EIS)</p>	<p>Develop cost estimates for the Proposal to determine if triggers SSD provisions.</p> <p>Undertake consultation with RGDC and Parkes Shire Council to determine if the Proposal would be declared designated development.</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<ul style="list-style-type: none"> • A permit under section 201, 205 or 219 of the FM Act. • Approval under Part 4, or an excavation permit under section 139, of the <i>Heritage Act 1977</i>. • An Aboriginal heritage impact permit under section 90 of the NP&W Act. • A bush fire safety authority under section 100B of the <i>Rural Fires Act 1997</i>. • A water use approval under section 89. • A water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the WM Act. <p>Section 4.42 prescribes other authorisations that cannot be refused if they are necessary for the carrying out of the SSD, including an Environmental Protection Licence (EPL), and consent under section 138 of the <i>Roads Act 1993</i>.</p> <p>Part 5, Division 5.1 identifies the infrastructure and environment impact assessment and planning approval requirements for development by public authorities, which may occur as 'development without consent'.</p>	<p>the EP&A Regulation, then an EIS would need to be prepared to accompany the DA.</p> <p>Triggers for designated development include "railway freight terminals" which include certain thresholds related to traffic, residential amenity and biodiversity.</p>	<p>would be required to be prepared to accompany an SSD application, assessing the environmental impacts of the Proposal.</p> <p>These assessment requirements would have significant time and cost implications for the Proposal but would be streamlined and refined by the establishment of the SAP.</p>	
<i>State Environmental Planning Policy (Infrastructure) 2007</i>	Environment & Planning	<p>The Infrastructure SEPP is a key environmental planning instrument which, in large part determines the permissibility of an infrastructure proposal and under which part of the EP&A Act an activity or development may be assessed.</p> <p>The Infrastructure SEPP prevails over all other environmental planning instruments except where there is an inconsistency with State Environmental Planning Policy (State Significant Precincts) 2005 or certain provisions of <i>State</i></p>	<p>This SEPP would apply if the development were proposed by a public authority and would enable the development of a rail infrastructure facility including 'rail freight terminals, sidings and freight intermodal facilities', without consent in accordance with the planning pathway provided in Part 5 of the EP&A Act (discussed above).</p>	<p>If the Proposal is by a public authority and meets the definition of rail infrastructure facilities defined by Section 78, development consent is not required.</p>	<p>Consultation with relevant regulatory authorities including councils to address any mandatory consultation requirements.</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p><i>Environmental Planning Policy (Coastal Management) 2018.</i></p> <p>Section 78 provides the definition of 'rail infrastructure facilities'.</p> <p>Division 15, Section 79 allows for the development of a railway or 'rail infrastructure facilities' by or on behalf of a public authority without consent on any land (i.e. the development is assessable under Part 5 of the EP&A Act).</p> <p>Division 1, Sections 13-16 outlines requirements for public authorities carrying out development to consult with councils and other public authorities. Consultation with councils is required where the development impacts on council related infrastructure or services, locally listed heritage items, or flood liable land. Consultation with the State Emergency Services (SES) is required in respect of flood prone land.</p> <p>Division 17, Section 94 allows development for the purpose of a road or road infrastructure facilities by or on behalf of a public authority without consent on any land.</p>	However, if the Proposal is development by a private entity or co-operative then these provisions will not apply.	In such an instance, environmental impacts of the Proposal would be assessed under the provisions of Part 5 of the EP&A Act (discussed above).	
<i>State Environmental Planning Policy (Activation Precincts) 2020</i>	Environment & Planning	<p>Part 2 sets out the requirements for Master Plans and Delivery Plans for Activation Precincts and the requirement for the consent authority to have regard to them when determining a development consent.</p> <p>Part 3 provides the mechanism for Activation Precinct Certificates to be sought from, and approved by, the RGDC. An application may be made only by the person who proposes the carry out the proposed development.</p>	<p>With the exception of the existing rail corridor, the entire SAP is zoned 'Regional Enterprise Zone'.</p> <p>The development of a freight consolidation facility or warehousing and distribution centre is a land use permitted with consent in the Regional Enterprise Zone.</p>	This SEPP establishes the pathway for the Proposal to proceed as complying development provided it is consistent with the SAP Master Plan and Delivery Plan. Following	Early consultation with RGDC and develop the concept design for the Proposal in line with the Master Plan and Delivery Plan for the SAP.

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>Schedule 1 includes the provisions for the approved Parkes SAP, including:</p> <ul style="list-style-type: none"> • Zoning. • Land use tables for development that may be carried out without consent, with consent and that which is prohibited. 	<p>In accordance with Schedule 1, Part 3, Section 8 development permitted with consent is complying development if it meets requirements including:</p> <ul style="list-style-type: none"> • Compliance with the Building Code of Australia. • Is not on land identified as environmentally sensitive in this SEPP. • Is not on land on which a heritage item, Aboriginal object or place is located. • Is not for the purposes of remediation under SEPP 55. • Is not carried out on a pipeline corridor. <p>It is likely that the Proposal could meet these requirements.</p>	<p>this, RGDC will issue an APC.</p>	
<p><i>State Environmental Planning Policy (State and Regional Development) 2011)</i></p>	<p>Environment & Planning</p>	<p>Sections 89C(2) and 115U(2) of the EP&A Act provide that a SEPP may declare any development, or any class or description of development, to be State significant infrastructure (SSI) or State significant development (SSD). The State and Regional Development SEPP provides definitions of SSI and SSD.</p> <p>Section 8 of the State and Regional Development SEPP states that development is SSD if the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and the development is specified in Schedule 1 or 2 of the SEPP.</p>	<p>The Proposal is likely to be complying development and/or permissible under Part 4 and as such would not fit within the criteria declared within this SEPP to be SSI or SSD.</p> <p>The Proposal does not directly form part of the Inland Rail project and as such is not CSSI under Schedule 5 Item 7.</p> <p>The Proposal is not proposed on behalf of the Australian Rail Track Corporation (ARTC) and would not fall within the</p>	<p>Unlikely to be applicable to the Proposal or Proponent.</p>	<p>Unlikely to be applicable to the Proposal or Proponent.</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>Schedule 1 (item 19) provides the following Rail infrastructure definition as an SSD:</p> <p><i>(1) Development that has a capital investment value of more than \$30 million for any of the following purposes—</i></p> <p><i>(a) heavy railway lines associated with mining, extractive industries or other industry,</i></p> <p><i>(b) railway freight terminals, sidings and inter-modal facilities.</i></p> <p><i>(2) Development within a rail corridor or associated with railway infrastructure that has a capital investment value of more than \$30 million for any of the following purposes—</i></p> <p><i>(a) commercial premises or residential accommodation,</i></p> <p><i>(b) container packing, storage or examination facilities,</i></p> <p><i>(c) public transport interchanges.</i></p> <p>Section 14 of the State and Regional Development SEPP states that development is SSI if it is wholly or partly permissible without development consent under Part 4 of the Act, by virtue of the operation of a SEPP, and it meets the definitions provided in Schedule 3 to the State and Regional Development SEPP.</p> <p>As noted, the Infrastructure SEPP provides that the Proposal is permissible without consent. Schedule 3 (item 3) of the State and Regional Development SEPP includes the following definition of 'rail infrastructure' - Development for the purpose of rail infrastructure by or on behalf of the Australian Rail Track Corporation that has</p>	definition of rail infrastructure that is SSI under this SEPP.		

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>a capital investment value of more than \$50 million.'</p> <p>Schedule 5 Critical State significant infrastructure, Item 7 Inland Rail, states that the objective of the Section is to declare the development that forms part of the Inland Rail project to be critical State significant infrastructure (CSSI).</p>			
<i>Roads Act 1993</i>	Planning	<p>The <i>Roads Act 1993</i> outlines the procedures for opening and closing public roads, as well as the regulations for carrying out various works and activities on public roads.</p> <p>Part 1 Section 7 prescribes that the council of the local government area is the roads authority for all public roads within the area, other than any freeway or Crown road, or road for which some other public authority is declared by regulations to be the roads authority.</p> <p>Part 2 Division 1 outlines the methods of opening public roads.</p> <p>Part 4 prescribes the processes for the closing of public roads.</p> <p>Part 5 Division 3 Section 61 prescribes that it is the exclusive function of RMS (now TfNSW) to make decisions as to what road work is to be carried out on any freeway, highway or metropolitan main road or any other classified road (addressed by virtue of an agreement under this Division). And it is exclusively the function of RMS (now TfNSW) to construct and maintain State works.</p> <p>Section 75 requires public authorities to notify TfNSW of proposals to carry out works on classified roads and obtain TfNSW approval. In</p>	<p>Significant enabling works in the form of road upgrades and bridge construction to provide the transportation network and utilities to the SAP are currently being undertaken by the NSW Government.</p> <p>Works within public road and the regulation of traffic in connection with any road works associated with the Proposal would be governed by this Act and powers exercised by the roads authority such as s138 approvals and Road Occupancy Licences (ROLs) for construction work that may impact the operations of public roads (e.g. lane closures). Such approvals would be obtained prior to the commencement of construction.</p>	<p>The Act applies to any works within the public road reserve or regulation of traffic. If extensive works or ROLs with restrictive conditions are required, this may result in additional impact on the delivery timeline.</p> <p>Coordination will be required to address any crossover in functions of both Council and TfNSW.</p>	<p>Consultation with the relevant regulatory bodies, including Council departments and TfNSW.</p> <p>As part of the APC process, the RGDC will engage with local council (or other roads authority) to provide advice on approval during concept design.</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>addition, Section 76 requires public authorities to notify TfNSW of proposals to carry out any major road work on a public road, or work that may affect a main road, tollway or transitway.</p> <p>Section 94 allows the roads authority for the purpose of draining or protecting a public road, to carry out drainage work in or on any land in the vicinity of the road.</p> <p>Section 115 addresses the road authority's powers to regulate traffic in connection with road work, and the exercise of powers by TfNSW (former RMS).</p> <p>Section 138 requires consent from the relevant road authority for the carrying out of work in, on or over a public road.</p>			
Biodiversity					
<i>Biosecurity Act 2015</i>	Environment	The <i>Biosecurity Act 2015</i> provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter. The Act also provides a framework for the timely and effective management of threats to terrestrial and aquatic environments arising from pests, diseases, contaminants and other biosecurity matter.	The control of biosecurity risks, most notably plant pests (weeds) would need to be managed during the construction and operational phases.	Provision of relatively minor costs may be required for weed management during construction and operational activities.	If potential weed impacts are identified, consult with the relevant regulatory bodies to determine if permits and/or approvals are required.
<i>Biodiversity Conservation Act 2016 (BC Act)</i>	Environment	<p>The BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The Act applies to animals and plants, but not in relation to fish and marine vegetation.</p> <p>The BC Act established the NSW Biodiversity Offsets Scheme (BOS), which applies to both</p>	The Activation Precinct SEPP includes an Environmentally Sensitive Areas Map, which is mirrored in the SAP Master Plan identification of areas of high-ecological value and Tier 1 and 2 trees (significant vegetation), which are to be retained and not removed.	The potential for significant impacts to threatened species listed under the BC Act would trigger the requirement for assessment and approval.	<p>Review SAP Masterplan during concept design to identify and avoid any areas of ecological significance.</p> <p>Undertake an ecological assessment to assess the</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>local development and SSD (under Part 4 of the EP&A Act) or SSI projects (under Part 5 of the EP&A Act).</p> <p>Part 2, Division 1 outlines the offences associated with harming or attempting to harm an animal or plant that is of a threatened species, part of a threatened ecological community or protected, without authorisation.</p> <p>Section 6.3 outlines the impacts of actions on biodiversity values that are subject to assessment and offset under the BOS. These include impacts of the clearing of native vegetation and the loss of habitat, and the impacts of action that are prescribed by the regulations.</p> <p>Part 7, Division 2, section 7.8 states that an activity is to be regarded as an activity likely to significantly affect the environment if it is likely to significantly affect threatened species. In such a case a Part 5 assessment under the EP&A Act is to include a species impact statement (SIS) or a biodiversity development assessment report (BDAR). Where a significant effect on threatened species is the only likely significant effect on the environment an EIS may be dispensed with and Part 5 of the EP&A Act applies as if references to an EIS were to a SIS or BDAR.</p>	<p>Development consent is required under the Activation Precincts SEPP for clearing of native vegetation on land identified as within an environmentally sensitive area on the Activation Precincts SEPP Parkes Activation Precinct Environmentally Sensitive Areas Map.</p> <p>The Biodiversity Offsets Scheme would apply to local development (under Part 4 of the EP&A Act) that triggers the BOS threshold or is likely to significantly affect threatened species based on the test of significance in Section 7.3 of this Act 2016.</p>	<p>Development proposed in any Environmentally Sensitive Areas will require a development consent process, which will have additional time and cost implications.</p> <p>If biodiversity offsets are required, this may result in additional impact on the delivery timeline and potential cost implications.</p>	<p>significance of any potential impacts under the provisions of the BC Act.</p> <p>Consultation with DPIE to determine potential approval pathway and any potential offset requirements.</p>
<i>Local Land Services Act 2013</i> (LLS Act)	Environment & Planning	<p>Land management (native vegetation) is outlined under Part 5A of this Act. Native vegetation means the following types of plants native to NSW:</p> <ul style="list-style-type: none"> • Trees (including any sapling or shrub or any scrub). • Understorey plants. 	Development consent is required under the Activation Precincts SEPP for clearing of native vegetation on land identified as within an environmentally sensitive area on the 'Parkes Activation Precinct Environmentally	Limited implications, the clearing of native vegetation would be addressed under the SAP framework and development	<p>Review SAP Masterplan during concept design to identify and retain any areas of significant vegetation.</p> <p>Where native vegetation may be impacted,</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<ul style="list-style-type: none"> Groundcover (being any type of herbaceous vegetation). Plants occurring in a wetland. <p>A plant is native to NSW if it was established in NSW before European settlement.</p> <p>Under section 60N, it is an offence to clear native vegetation in a regulated rural area without the authorisation or the approval of Division 4, 5 and 6 of the Policy.</p> <p>If clearing of native vegetation is required, under section 60O, the approval for clearing of native vegetation can be authorised under other legislation, in particular, the clearing can be authorised by development consent under Part 4, or carried out in compliance with an approval of a determining authority under Part 5 of the EP&A Act.</p>	Sensitive Areas Map'. This requirement would address the requirements of this Act.	consent requirements.	undertake a detailed vegetation clearing survey to assess details of the species, extent of clearing and understand the significance of any potential impacts.
<i>State Environmental Planning Policy (Koala Habitat Protection) 2020 & 2021</i>	Environment & Planning	<p><i>State Environmental Planning Policy (Koala Habitat Protection) 2020</i> and <i>State Environmental Planning Policy (Koala Habitat Protection) 2021</i> aim to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas and reverse the current trend of koala population decline. Under Part 2, the Policy applies to lands that has been identified on the Koala Development Application Map.</p> <p>Koala SEPP 2021 does not apply to land zones RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry. This exemption is an interim solution that may change after new land management and private native forestry codes are developed.</p>	<p>The Activation Precinct SEPP includes an Environmentally Sensitive Areas Map. Any development in these areas would require assessment of koala habitat.</p> <p>If the proposed development has a spatial footprint of less than 1 hectare, then the Koala Habitat Protection SEPP does not apply.</p>	<p>Development proposed in any Environmentally Sensitive Areas will require a development consent process, which will have additional time and cost implications.</p> <p>If koala habitat was confirmed, a Koala Management Plan would be required for public exhibition and approval of the</p>	If the development Proposal includes Environmentally Sensitive Areas, undertake a potential koala habitat assessment as part of any ecological assessment.

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
				Planning Secretary.	
<i>Fisheries Management Act 1994</i>	Environment & Planning	<p>The <i>Fisheries Management Act 1994</i> objectives are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations.</p> <p>Part 7a states the conditions for threatened species conservation and specifically states that the Act is to ensure that the impact of any action affecting threatened species, populations and ecological communities of fish and marine vegetation is properly assessed.</p> <p>Permits under section 201, 205 and 219 of the FM Act may be applicable to the Proposal, and include:</p> <ul style="list-style-type: none"> • 201 – Permit to carry out works or dredging or reclamation. • 205 – Permit to harm (cut, remove, damage destroy, shade etc) marine vegetation. • 219 – Permit to obstruct the free passage of fish. 	<p>The SAP Master Plan identifies numerous watercourses traversing the precinct.</p> <p>The precinct enabling works to establish transportation and utilities infrastructure are likely to address many of the potential requirements for permits under this Act. However, permits may be required if works are to be carried out near or in waterways that may impact aquatic species.</p>	<p>If permits under the FM Act are required, this may result in additional impacts on the delivery timeline and costs of the Proposal.</p> <p>If impacts to riparian vegetation are anticipated, specific mitigation measures would be implemented during construction and may result in additional impacts on the delivery timeline and costs of the Proposal.</p>	<p>Undertake an ecological assessment for waterways that may be impacted by the Proposal, to determine the significance of these potential impacts under the FM Act.</p> <p>Implement erosion and sedimentation control measures during construction to protect any surrounding waterways and aquatic ecosystems.</p>
Heritage					
<i>Heritage Act 1977</i>	Environment & Planning	<p>The <i>Heritage Act 1977</i> provides conservation of buildings, work, relics and places that are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance to the State. Matters protected under the Act include items subject to an Interim Heritage Order and items listed on the State Heritage Register, the heritage schedules of local council LEPs, and the heritage and conservation registers established under section</p>	<p>Once a Proposal site is selected, a preliminary search should be undertaken to identify any potential areas or items of Aboriginal or cultural heritage significance.</p>	<p>Development proposed in any areas impacting Aboriginal or cultural heritage will require a development consent process, which will have additional time</p>	<p>Undertake preliminary heritage assessment during site selection to identify any areas of Aboriginal or cultural heritage to be avoided and/or minimised in concept development.</p> <p>If there are potential impacts, consultation</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		<p>170 of the Heritage Act by NSW state government agencies (section 170 Registers).</p> <p>Approval must be gained from the Heritage Council when making changes to a heritage place listed on the State Heritage Register, or when excavating any land in NSW where an archaeological relic might be disturbed. Under Part 4, sections 57 and 60 of this Act, approval is required for works which may have an impact upon items listed on the State Heritage Register. Sections 139 and 140 similarly require approval where relics are likely to be exposed.</p> <p>For any works which may have an impact upon items listed on the section 170 heritage register, notification to the Heritage Division may be required where demolition to the item is proposed, or where the item will no longer be occupied.</p>		<p>and cost implications.</p> <p>Any unexpected heritage finds discovered during construction would require stop work proceedings and notification to Heritage NSW.</p>	<p>with the relevant regulatory bodies including RGDC, Council officers and Heritage NSW would be required regarding potential approvals / permits.</p>
<i>National Parks and Wildlife Act 1974</i> (NP&W Act)	Environment & Planning	<p>The objects of this Act are to conserve nature and to conserve objects, places or features of cultural value within the landscape.</p> <p>The NP&W Act is the primary legislation dealing with Aboriginal cultural heritage in NSW. Items of Aboriginal cultural heritage (Aboriginal objects) or Aboriginal places (declared under section 84) are protected and regulated under the NP&W Act. Aboriginal objects are protected under section 86 of the Act.</p> <p>Under section 89A, there is a requirement that if any unexpected Aboriginal objects are discovered the Chief Executive must be notified.</p>	<p>Once a Proposal site is chosen a search of any conservation, historic or heritage areas can be undertaken, including a search of the Aboriginal Heritage Information Management System (AHIMS) database.</p> <p>As stated above, development proposed in any Environmentally Sensitive Areas will require a development consent process, which will have additional time and cost implications.</p> <p>Harm to Aboriginal objects and declared Aboriginal Places should be avoided. If harm</p>	<p>If development consent is required and other approvals/ permits (particularly an AHIP) are required, additional impacts on the delivery timeline and costs of the Proposal may occur.</p> <p>Any unexpected finds of heritage items discovered would require stop work proceedings</p>	<p>Undertake preliminary heritage assessment during site selection to identify any areas of Aboriginal or cultural heritage to be avoided and/or minimised in concept development.</p> <p>Where heritage items are identified or likely to be encountered, commence early consultation with RGDC and NPWS.</p>

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
			cannot be avoided, an Aboriginal Heritage Impact Permit (AHIP) under section 90 of N&PW Act would be required.	and notification to Heritage NSW.	
Water					
<i>Water Management Act 2000</i> (WM Act) <i>Water Management (General) Regulation 2018</i>	Environment & Planning	<p>Approval under the WM Act is required for certain types of developments and activities that involve the use of water, are carried out in or near a river, lake or estuary, or may intersect groundwater.</p> <p>Approvals are required under section 91 of the WM Act for carrying out a controlled activity and aquifer interference activities. The <i>Water Management (General) Regulation 2018</i> provides a number of exemptions for public authorities from provisions of the WM Act.</p> <p>Section 41 of the <i>Water Management (General) Regulation 2018</i> outlines that a public authority is exempt from section 91(e) of the WM Act in relation to all controlled activities that it carries out in, on or under waterfront land.</p>	<p>Enabling works (i.e. roads, bridges, water supply, sewage connections) for the SAP have been approved by DPIE and are establishing water supplies for future development of the Precinct.</p> <p>It is not anticipated that any water use approvals would be required for the Proposal under Part 3 Approvals, Division 1 of the WM Act.</p> <p>However, depending on the construction methodology, an aquifer interference approval may be required.</p>	If permits and/or approvals are required, this may result in additional impacts on the delivery timeline and costs of the Proposal.	Consultation with Water NSW and Natural Resources Access Regulator (NRAR) to determine if licences are required.
<i>Water Act 1912</i>	Environment & Planning	<p>The <i>Water Act 1912</i> controls the extraction of water and use of extracted water. If during construction, temporary dewatering of groundwater (from an excavation) is deemed necessary, then:</p> <ul style="list-style-type: none"> • A licence to carry out such activity will be required under Part 5, Division 3 of this Act. • Contractor must provide DPI Water with details on the volume of groundwater that is encountered and the duration of pumping. • It is a legal requirement for any take of groundwater to be authorised by a <i>Water Act 1912</i> licence (in the case of dewatering 	Water for construction may be sourced from non-potable sources including existing dams or groundwater bores.	<p>If extraction from a watercourse or groundwater bore is required, a permit for extraction would be required under the <i>Water Act 1912</i>.</p> <p>If permits and/or approvals are required, this may result in additional impacts on the</p>	Consultation with Water NSW and Natural Resources Access Regulator (NRAR) to determine if licences are required.

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
		activity) or a Water Access Licence (for onsite reuse) unless an exemption applies.		delivery timeline and costs of the Proposal.	
Contamination					
<i>Contaminated Land Management Act 1997 (CLM Act)</i>	Environment	The CLM Act regulates significantly contaminated land through requirements for notification to the NSW EPA, investigation, remediation and recovery of costs from the person responsible. The NSW EPA must be notified by the property owner in writing of any contamination identified within the Proposal in accordance with the requirements of section 60.	Once a Proposal site is chosen a search of the EPA List of Notified Sites and the EPA Contaminated Land Record should be undertaken. The Activation Precinct SEPP requires that APCs cannot be issued unless the Issuing Authority has considered whether the land is contaminated, and whether the subject land is suitable for the proposed development. Requirements of this Act would need to be addressed and complied with prior to any development proceedings.	Desktop, and potentially site investigation, will be required for any development proposal for the assessment of a APC, which will have time and cost implications.	Undertake preliminary site investigations in site selection and the development of concept design to assess the significance of any potential impacts of the CLM Act.
<i>State Environmental Planning Policy No 55 - Remediation of Land (SEPP 55)</i>	Environment & Planning	SEPP 55 provides a state-wide approach to the remediation of contaminated land for the purpose of minimising the risk of harm to the health of humans and the environment.	While consent for the Proposal may not be required, the provisions of SEPP 55 would be considered fully in any assessment prior to the issue of an APC.	Desktop, and potentially site investigation, will be required for any development proposal for the assessment of an APC, which will have time and cost implications.	Undertake preliminary site investigations in the site selection and development of concept design to assess the significance of any potential impacts of the SEPP 55.
Construction					
<i>Protection of the Environment</i>	Environment	The PoEO Act is administered by the NSW Environmental Protection Agency (EPA) and	The proposed freight consolidation facility and	Unlikely to be any implications	Once the Proposal design, construction

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
<i>Operations Act 1997</i> (PoEO Act)		<p>regulates activities which may result in pollution impacts (e.g. land, air, water and noise pollution).</p> <p>Part 3.2 of the PoEO Act requires an Environment Protection Licence (EPL) for scheduled development work and to carry out scheduled activities as identified in Schedule 1 of the PoEO Act.</p>	activities are unlikely to constitute any of the activities in Schedule 1 of this Act.		methodology and operations are further progressed, determine if the Proposal triggers the need for any EPLs.
<i>Rural Fires Act 1997</i>	Environment & Planning	<p>The objectives of the <i>Rural Fires Act 1997</i> include the prevention, mitigation and suppression of bush and other fires in local government areas and rural fire districts. It is also for the protection of the environment by requiring certain activities to be carried out having regard to the principles of ecologically sustainable development described in section 6 (2) of the <i>Protection of the Environment Administration Act 1991</i>.</p> <p>Part 4 outlines the prevention and minimisation of the spread of bush fires throughout the State. Division 1 identifies the duty of public authorities and owners and occupiers of land to prevent bushfires. Division 5 identifies the permits and notice requirements for lighting fires.</p> <p>A bushfire safety authority, under section 100B of the Rural Fires Act 1997, must be obtained from the NSW Rural Fire Service for subdivision and special fire protection developments on bushfire prone land.</p>	<p>Detailed performance criteria are included for bushfire protection within the SAP Delivery Plan. The criteria has been developed in accordance with the requirements of Planning for Bush Fire Protection (PBP) 2019. The PBP 2019 are legislatively adopted in the Environmental Planning & Assessment Regulations.</p> <p>PBP 2019 requires certain building construction levels to be met so that life safety is improved, and the building will be less likely to burn down or be damaged by bush fires.</p>	Section 6.11 of the SAP Delivery Plan identifies areas located within a bushfire risk or buffer area. Location of the Proposal within these areas may impose additional cost to building compliance and additional time in design and consultation.	Review the bushfire protection criteria of the SAP Master Plan during site selection and concept design. Consider the requirements and guidance of PBP 2019 during design development.
Local					
<i>Parkes Local Environment Plan</i>	Planning	<p>The Parkes LEP maps refer to the SEPP (Activation Precincts) 2020.</p> <p>The Infrastructure SEPP prevails over all other environmental planning instruments (such as</p>	The provisions of the Activation Precincts SEPP prevail over and have the effect of “turning off” the Parkes LEP provisions.	The provisions of the SEPP (Activation Precincts) 2020	The Parkes LEP is not applicable to the Proposal.

Applicable environmental and planning regulations	Environment/ planning / environment & planning	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
2012 (Parkes LEP)		LEPs) except where there is an inconsistency with <i>State Environmental Planning Policy (State Significant Precincts) 2005</i> or certain provisions of <i>State Environmental Planning Policy (Coastal Management) 2018</i> . The Proposal is situated on land zoned as Regional Enterprise Zone under the SEPP (Activation Precincts) 2020. The existing rail corridor is zoned SP2 (Infrastructure).		prevail over and have the effect of “turning off” the Parkes LEP provisions.	Assess the Proposal against the Activation Precincts SEPP controls and the approved Master Plan for the Parkes SAP.

10.3 Other regulatory requirements

A desktop search was undertaken to identify environmental and planning regulations that may be triggered by the Proposal. The desktop search comprised a review of LEP, state government websites and data services, and Commonwealth government websites and data services.

Other potential regulatory requirements applicable to this Proposal are set out in Table 42.

Table 44 Other potential regulatory requirements

Other potential regulations	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
Commonwealth				
<i>Native Title Act 1993</i>	<p>The Commonwealth <i>Native Title Act 1993</i> provides the legislative framework that:</p> <ul style="list-style-type: none"> • Recognises and protects native title. • Establishes ways in which future dealings affecting native title may proceed. • Establishes the National Native Title Tribunal. <p>Extinguishment, or partial extinguishment, of native title (s 237A), occurs as the result of certain past Acts of Government (generally prior to 1 January 1994 when</p>	It is anticipated that the Proposal site would be situated on freehold title land or within the rail corridor where public works were established prior to the NTA coming into force (such that any native title rights would have been extinguished).	Unlikely to be applicable.	Unlikely to be applicable.

Other potential regulations	Specific items which apply	Relevance to the Proposal	Potential implications for the ease of delivery of the Proposal	Potential mitigation and management measures
	the NTA came into force), through actions such as granting of freehold land, granting of leases, or the construction or establishment of public works.			
State				
<i>Crown Land Management Act 2016 No 58</i> <i>Crown Land Management Regulation 2018</i>	The <i>Crown Land Management Act 2016</i> and <i>Crown Land Management Regulation 2018</i> regulates the ownership, use and management of Crown Land in NSW.	It is possible that a lease or permit may be required from DPIE to occupy any Crown Land, if required as part of the proposed works.	If a lease or licence was required to occupy Crown Land, additional impacts on the delivery timeline and costs of the Proposal may occur.	Consultation with DPIE to determine potential approval pathway and any potential requirements.

10.4 Conclusion

The Gate 2 regulatory assessment for the Proposal has identified the following:

- The NSW Government has recognised the area for future growth and investment through the establishment of the Parkes SAP.
- The *State Environmental Planning Policy (Activation Precincts) 2020* establishes a streamlined development assessment process around a government led Master Plan and Delivery Plan, and the issue of APC by the NSW Regional Growth Development Corporation for development that is consistent with these plans.
- Following extensive strategic planning and environmental impact assessment, a Master Plan and Delivery Plan have already been developed and approved for the Parkes SAP and would provide the core guidance documents for the location of the Proposal and development of concept plans.
- Enabling works approvals (i.e. roads, bridges, landscaping, water supply and sewage connections), have already been issued and works are underway for the development of key transport infrastructure and utilities within the Parkes SAP.
- *State Environmental Planning Policy (Activation Precincts) 2020* increases the scope of development that can proceed under a Complying Development Certificate (CDC) and, where required, will assist in fast tracking any assessment processes under Part 4 development consents and Part 5 public authority development approvals under the EP&A Act.
- The Proposal would be assessed against the SAP Master Plan and Delivery Plan. For delivery of the Proposal by other than a public authority an application would be made to RGDC for an APC. The Proposal would then proceed through a complying development certificate issued by a certifier, or in certain circumstances (i.e. where environmentally sensitive areas or heritage items or places are impacted), a development application would be required subject to the development assessment and consent requirements of Part 4 of the EP&A Act, with the Parkes Shire Council the consent authority.
- The development of a 'freight consolidation facility' or 'warehousing and distribution centre' is a land use permitted with consent in the Regional Enterprise Zone, which comprises almost all of the SAP. Further, in complying with certain requirements (environmentally sensitive areas, heritage etc.) the Proposal could proceed as complying development.
- The Activation Precinct SEPP includes an Environmentally Sensitive Areas Map and the SAP Master Plan identifies areas of high ecological value to be retained and avoided by development proposals. Any requirement for approval under the EPBC Act is unlikely. However, if these areas could not be avoided and the Proposal were determined likely to have a significant impact on a listed threatened species then an EPBC approval would still be required.
- Development proposed in an area impacting Aboriginal or cultural heritage will require a development consent process and matters to be addressed under the *Heritage Act 1977*, which will have additional time and cost implications.
- The proposed freight consolidation facility and activities are unlikely to constitute any of the activities in Schedule 1 of the PoEO Act, as such EPLs are unlikely to be required.
- Once a Proposal site is identified, review of the SAP Master Plan and Delivery Plan performance criteria will identify constraints and guide the development of a concept design. Searches of any conservation, historic or heritage areas, and contaminated land registers should be undertaken that may trigger any other requirements for approvals.
- Ancillary works with public roads or regulation of traffic would require approvals under the *Roads Act 1993*.

From the lack of any site selection and the information provided in Sections 10.1, 10.2 and 10.3, including the scope of the proposed works and the key risks identified, it cannot be determined at this stage if the Proposal is likely to result in significant environmental impacts. However, it is anticipated that the Proposal could be eligible for approval via the EP&A Act, and more specifically the pathways established by the Activation Precincts SEPP. If potential impacts were appropriately assessed and subsequently mitigated and/or managed.

It is likely that the delivery of the Proposal would proceed by a private entity or co-operative, and not a public authority, with development assessment through an application for an APC and a CDC process. The RGDC determine an application for an APC, and a private certifier or Parkes Shire Council would determine and administer a CDC application.

Generally, both time and costs would increase with departures from performance criteria and acceptable solutions outlined in the SAP Master Plan and Delivery Plan. Triggers for the development consent and SSD will add additional time and cost implications.

Following confirmation of the Proposal location, construction methodology, and Proponent, the environmental, planning and other regulatory requirements would need to be reassessed and can be clarified against the SAP Master Plan and Delivery Plan.

Further investigation of the potential environmental impacts would be conducted if a Gate 3 assessment is requested and the Proposal proceeds to Gate 3.

Next Steps

The Central NSW Joint Organisation Board met on 26 May 2022 and confirmed adoption of the P2_022 Central West Consolidation Centre Gate 2 Pre-Feasibility Study.

The Central NSW Joint Organisation requests the following considerations as part of the Gate 3 analysis, should the Proposal proceed:

- value to other Councils in the region in the context of value to the producer
- more detail on the potential of fertiliser aggregation to and from the region
- more business engagement
- non-infrastructure enablers like AQUIS located in region, and
- the potential for induced demand.

This document will be submitted to the Department for review and feedback in accordance with the agreed review process⁵² as noted in the Project Plan.

⁵² As set out in the “*Proposal Steps*” document as at May 2020, the Department

Gate 3 specific activities

Should the Department assess the Proposal as suitable for moving to Gate 3, the key tasks to be undertaken during the Gate 3 Feasibility Study are described in Table 43.

Table 45 Gateway information requirements⁵³

No.	Topic Area	Gate 3	Specific activities
1.0	Proposal details	No additional information required. Update only if assessment feedback requires amendments to be made or if new information is available.	No specific activities required
2.0	Problem or opportunity definition	No additional information required. Update only if assessment feedback requires amendments to be made or if new information is available.	
3.0	Strategic fit	No additional information required. Update only if assessment feedback requires amendments to be made or if new information is available.	
4.0	Stakeholders	Further analysis required as input to assessing deliverability of the Proposal.	<p>Given the support for the Proposal from the stakeholders engaged, it is recommended active engagement continues as details of the Proposal are refined into Gates 3 and 4, should the Proposal proceed. It is recommended that future engagement include:</p> <ul style="list-style-type: none"> • Continue consultation with Hassall Trading, Orange Region Vignerons Association, Superbee Honey and Kebby & Watson Tichborne. This should include, but not be limited to, review of project plans, agreement of options and requests to provide any relevant information that may assist in assessment and decision making for the Proposal. • Further engagement at Gate 3 and Gate 4 is required to achieve deeper insights into the potential business and investment opportunities that could be unlocked if this Proposal proceeds.
5.0	Options identification and analysis	No additional information required. Update only if assessment feedback requires amendments to be made or if new information is available.	<ul style="list-style-type: none"> • Consistent with the findings of the Gate 2 Pre-Feasibility Study, the Gate 3 process will include analysing the feasibility and operability of the Preferred Option. • The intent of this section is to build on the analysis undertaken during Gate 2 and obtain additional information to serve as inputs to the rapid Cost-Benefit Analysis (CBA) for the Preferred Option. • This analysis will include the following: <ul style="list-style-type: none"> ○ Refined conceptual designs of the Preferred Option.

⁵³ "II Program Gateway Road Map: Assessment Information v2" as at March 2020, the Department

No.	Topic Area	Gate 3	Specific activities
			<ul style="list-style-type: none"> ○ Further quantification and monetisation of benefits. ○ Refinement of cost estimates.
6.0	Demand	Required for rapid CBA of the preferred option(s).	<p>Build on the assessment of the current freight demand, addressing any gaps that were present in the Gate 2 submission.</p> <p>At the Gate 3 stage, the intent for this section is to build on the analysis undertaken during the Gate 2 Pre-Feasibility Phase and for the information to serve as inputs to the rapid Benefit-Cost Analysis at Section 9.</p>
7.0	Costs	Required for rapid CBA of the preferred option(s).	<ul style="list-style-type: none"> • Refining the capital cost estimates for the preferred option, moving from metric based costs to quantified and/or first principles costing where possible. As the estimates are refined any further information required will become evident. The financial model will be rerun with the revised cost estimates and a statement of reliability will be provided regarding the cost analysis completed at this Gate (i.e. section 7.4 of the Gateway Assessment Process). • Developing the risk model, seeking inputs from all key stakeholders for both inherent and contingent risks, producing the probabilistic evaluation of contingency (P50, estimates) through researching and assessing industry benchmarks, supported by a risk identification workshop. • Document the overall P50 cost estimates for the Proposal options, the assumptions and any exclusions within them, and a statement on the level of accuracy achieved. • Identify Proposal implementation risks (which will feed into section 15.0). Proposal outcomes and impacts will be assessed to ensure that benefits are realised, and procurement risks will be considered to support the Proposal's effective and efficient deliverability. Identifying and understanding Proposal implementation risks and impacts are critical to establishing an appropriate governance framework and determining Proposal performance indicators. • The capital cost information and scope will inform the development of more detailed operating and maintenance costs for the accessibility options. • A report would be produced detailing the estimates, the assumption and any exclusions within them, the results of the risk modelling, and a statement on the level of accuracy achieved.

No.	Topic Area	Gate 3	Specific activities
8.0	Benefits	Required for rapid CBA of the preferred option(s).	<ul style="list-style-type: none"> • Build on work undertaken as part of the Gate 2 process and updated findings from targeted stakeholder engagement as necessary for input into sections 9.0 and 11.0 including further quantification and monetisation of benefits (following Gate 2); quantification of benefits relating to induced demand (if applicable); and qualitative consideration of wider economic benefits. • Conduct research to identify other non-traditional benefits that can be quantified to strengthen the economic assessment and ensure a comprehensive view of the economic benefits that will result from the Proposal is known. • Required for rapid CBA of the preferred option(s). At the Gate 3 stage, the intent for this section is to build on the analysis undertaken during the Gate 2 Pre-Feasibility Phase and for the information to serve as inputs to the rapid Benefit-Cost Analysis at Section 9.0. • Statement of reliability to be provided regarding the benefits analysis completed at this Gate (i.e. section 8.4 of the Gateway Assessment Process).
9.0	Cost-benefit analysis, wider economic benefits	Rapid CBA required for evaluation.	<p>Utilise EY's well-established transport economic CBA framework to assess the economic merits of the Proposal over an agreed appraisal period. This will build on the benefits identified through the Gate 2 process.</p> <p>The benefits identified in the Gate 2 process will be quantified and re-assessed with any further information, data or research available. These will be incorporated into the CBA. Residual value at the end of the appraisal period will also be calculated.</p> <p>All benefits will be compared to Proposal enabling costs, which may include above-rail operating and access charges. The following metrics will be presented, which will be considered alongside qualitative benefits:</p> <ul style="list-style-type: none"> • NPV – a reflection of the economic performance of the Proposal (with any core cases assessed at a discount rate of 7% and sensitivity analyses undertaken at the discount rates 4% and 10%). • BCR – a reflection of the social and economic return of the Proposal.

No.	Topic Area	Gate 3	Specific activities
			A quantitative assessment of the wider economic benefits will be undertaken in the Gate 4 submission; they will be qualitatively assessed at Gate 3. This assessment will be discussed with the Department at the completion of Gate 2 to ensure its suitability for the Proposal Option selected.
10.0	Funding and financing	Further consideration of potential sources of funding and initial consideration of the proposal's financial viability.	<p>Consider further the potential sources of funding (including potential value sharing arrangements, and user pay charges, incorporating the findings of the demand analysis) and assess the Proposal's financial viability.</p> <p>The funding and financing analysis will build on the analysis already undertaken at Gate 2 and provide sufficient detail consistent with the 'economy of effort' principle.</p> <p>Using the cost information and the consequent NPC and NPV:</p> <ul style="list-style-type: none"> • Undertake sensitivity testing and consider scenarios with and without a Government contribution. Revenues identified in the funding analysis will be incorporated. • Sensitivity testing will be undertaken on key drivers of the financial viability analysis. Discount rate sensitivity testing will be undertaken at higher (+2 percent) and lower (-2 percent) discount rates. <p>Potential value sharing arrangements.</p>
11.0	Regional economic impact assessment	Initial qualitative consideration of the Proposal's impact on economic output.	<p>If considered appropriate for the Proposal at the completion of Gate 2, undertake a high-level economic impact assessment.</p> <p>At the Gate 3 stage, activities undertaken with respect to the regional economic impact assessment of the Proposal will be qualitative in nature and consider a range of factors such as the Proposal's economic output (e.g., GRP), value-add, tax and employment impact in both the Toowoomba and Moree regions. This will be undertaken to highlight potential flow on benefits as an introduction to the Proposal impacts and how they arise.</p> <p>The modelling and quantitative analysis of these identified flow on impacts will be undertaken at the Gate 4 stage.</p>
12.0	Potential regulatory requirements	What is the regulatory assessment pathway? Required for the evaluation of ease of delivery.	Update pathway analysis as required to reflect the refined option.

No.	Topic Area	Gate 3	Specific activities
13.0	Environmental, heritage and planning assessment	Subject to Section 12.0, what is the environmental and planning regulatory pathway?	<p>Determine and describe the regulatory assessment pathway noting any supplementary environmental approvals that may be required including but not limited to Environmental Protection Licences, Heritage Permits, etc.</p> <p>The pathway will account for of all relevant Commonwealth, State and Local planning legislative and regulatory requirements and guidelines and will include timelines and interdependencies and a critical path program.</p> <p>Undertake a desktop assessment of the key Environmental Issues that may impact the regulatory approvals pathway and program in the following areas:</p> <ul style="list-style-type: none"> • Noise and vibration. • Flora and fauna. • Air quality and greenhouse gas emissions. • Water. • Landscape and visual amenity. • Land use and property. • Soil and contaminated land. • Traffic, transport and access. • Social impacts. • Non-indigenous heritage sites. • Indigenous heritage sites. • Areas with registered Native Title claims.
14.0	Property strategy	Initial consideration of potential property impacts and response strategies required for the evaluation of the Proposal's potential to be delivered.	With more detailed information on specification, a more detailed assessment of site can be undertaken including the development of a property strategy. This should take into account the consultation with the local council for the "current uses" of the land and the strategy for property.
15.0	Risk management	Initial consideration of potential sources of risk and response strategies required for evaluation of the Proposal's potential to be delivered.	<ul style="list-style-type: none"> • EY will work with our sub-contractors as required to identify and assess the risks associated with the delivery of the Proposal and document them in a Risk Management Plan. This will build on the work undertaken to date as part of section 7. EY will work with the Proponents to refine the content of the Risk Management Plan. It is anticipated to include: <ul style="list-style-type: none"> ○ Register of risks. ○ Outline of risk management arrangements (elimination, mitigation and minimisation).

No.	Topic Area	Gate 3	Specific activities
			<ul style="list-style-type: none"> ○ Identification of implementation risks and mitigation strategies. • A virtual Risk Workshop will be held to ensure all key risks and their potential impact are identified, including for the implementation, outcomes and impacts of the Proposal. The Workshop will also cover and get agreement from parties as to how risks should be managed. • In completing this stage, the experience of EY Delivery Partners will be leveraged, including Paul Stanley, who has a significant understanding of the possible impacts and risks that projects may have on supply chains.
16.0	Governance, management and outcomes monitoring and evaluation	Initial consideration of key performance indicators and post-implementation evaluation strategies.	<ul style="list-style-type: none"> • Document key governance arrangements for the delivery of the Proposal. • Draft a Feasibility Study report which is holistic, cohesive and well-written. The report will draw on evidence to demonstrate key points, generate support and ultimately support decision making.

Appendix A Further Proposal Information

Regional Economic Impact Assessment

The regional economic impact assessment for this Proposal is yet to be progressed and will be commenced at the Gate 3 stage if the Proposal is approved to proceed at the Gate 2 stage. This will ensure that key demand, costs and benefits inputs are effectively incorporated into the required qualitative analysis (Gate 3) and quantitative analysis (Gate 4) as required for this topic area.

Property Strategy

A property strategy has not been developed for Gate 2 as it is not required at this stage. It is anticipated that the Proponent's site locations will be adequate for the proposed infrastructure, and further analysis is not required.

Risk Management

The risk analysis undertaken for Gate 2 has been limited to consideration of risks as part of the Options analysis process and in the context of the relative ease of deliverability pertaining to regulatory requirements. A risk management plan and risk register will be commenced from the Gate 3 stage if the Proposal is progressed at the Gate 2 stage.

Governance, Management and Outcomes Monitoring and Evaluation

The governance arrangements for the delivery and implementation of the Proposal are yet to be progressed and will be commenced at the Gate 3 stage if the Proposal is approved to proceed at the Gate 2 stage.

Appendix B Information Sources

Documents considered

Table 46 Key documents considered

Document	Description
Relevant Strategies	
NSW Freight and Ports Plan 2018-2023, NSW Government 2018	This strategy document provides a framework for the Government and industry to make the freight system more efficient, more accessible, safer and more sustainable for the benefit of producers, operators, customers and communities across NSW. Efficiency, connectivity and access along key freight routes were identified as an objective in the Plan.
National Freight and Supply Chain Strategy (2019)	The Strategy sets an agenda for coordinated and well-planned government and industry actions across all freight modes for the next 20 years and beyond.
Australian Infrastructure Plan (2016)	<p>The Plan sets out the infrastructure challenges and opportunities faced in Australia over the next 15 years. It provides a package of reforms focussed on improvement in, delivery and use of Australian infrastructure and assets.</p> <p>The Plan has identified an 80% growth in national land freight between 2011 and 2031, with road freight the primary method. This growth will result in further stress on the current Australian freight infrastructure.</p>
National Freight and Supply Chain Action Plan (2019)	Freight Australia's Action Plan sets out a national focus on ensuring domestic and international supply chains are serviced by resilient and efficient key freight corridors, precincts and assets. It also identifies providing regional and remote Australia with infrastructure capable of connecting regions and communities to major gateways, through Inland Rail intermodal terminal planning.
Proposal related information	
Value adding to agriculture in Central West NSW, RDA Central West 2016	This document reviews current agricultural value adding trends and opportunities in Central West NSW, with particular focus on the categories of biotechnology, digital technology, processing and packaging, branding, and co-operation and collaboration.
NSW Central West Freight Study, RDA Central West 2014	This document records the freight tasks in terms of net tonnes transported via road, rail and air and highlights constraints and opportunities, and provides guidance on the benefits to the Central West NSW region of these improvements.
Small Agricultural Enterprise Logistics, RDA Central West 2017	This report details the need in Central West NSW for a domestic freight model that enables small agribusinesses to deliver irregular, low volumes of agricultural produce to clients in an efficient, timely and affordable manner. The need for this project was identified in the RDA Central West Value Adding to Agriculture in Central West NSW report, published in 2016, in which connectivity to market was identified as a key challenge for Central West agricultural SMEs.
Central West NSW Regional Economic Analysis on the Potential Impact of the Proposed Inland Rail, RDA Central West 2016	Report that provides an independent assessment of the likely economic and supply chain opportunities arising from the commissioning of the Inland Rail. It is indicated that the implementation of Inland Rail is expected to improve efficiency and reduce cost for rail movement to existing centres and provide an efficient linkage to Brisbane.
Guidelines used to identify and assess benefits	
<i>Nine-Squared 'Guidance on Economic Analysis' (2020)</i>	<p>This document was used to identify and assess the benefits that the Proposal will bring.</p> <p>Details on this document's relevance to the Proposal is provided in Section 8</p>
<i>Transport for NSW ("TfNSW") 'Cost-Benefit Analysis Guide' (2019)</i>	<p>This document was used to identify and assess the benefits that the Proposal will bring.</p> <p>Details on this document's relevance to the Proposal is provided in Section 8</p>

Document	Description
<i>Infrastructure Australia ("IA") 'Assessment Framework' (2018)</i>	This document was used to identify and assess the benefits that the Proposal will bring. Details on this document's relevance to the Proposal is provided in Section 8
<i>NSW Treasury 'TPP17-03 NSW Guide to Cost Benefit Analysis' (2017)</i>	This document was used to identify and assess the benefits that the Proposal will bring. Details on this document's relevance to the Proposal is provided in Section 8
<i>Queensland Treasury 'Project Assessment Framework: Cost-benefit analysis' (2015)</i>	This document was used to identify and assess the benefits that the Proposal will bring. Details on this document's relevance to the Proposal is provided in Section 8
<i>Victorian Department of Treasury and Finance 'Economic Evaluation for Business Cases Technical guidelines' (2013)</i>	This document was used to identify and assess the benefits that the Proposal will bring. Details on this document's relevance to the Proposal is provided in Section 8
<i>.Australian Transport Assessment and Planning ("ATAP") 'National Guidelines for Transport System Management in Australia' (2006)</i>	This document was used to identify and assess the benefits that the Proposal will bring. Details on this document's relevance to the Proposal is provided in Section 8
Data	
BITRE, Road and rail freight: competitors or complements (2009)	Provided information for the average freight cost for Australian inter-capital road and rail freight.
CSIRO, Inland Rail Supply Chain Mapping	Provided information about the cost saving from a shift from road to Inland Rail.
ABS 2016 Census Place of Work Employment (Scaled)	Data on the employment industry profile for the Central West region
ABS Census Quick Stats (2016)	Data on the employment profile and the median weekly household income for Australia, NSW and the Central West region.
SNC	Provided a detailed options report with figure and tables about the two proposed stages.
george stanley consulting	Provided an overview for the methodology and assumptions used for forecasting freight demand.
Potential regulatory requirement documents	
Commonwealth	
Native Title Act 1993	The Commonwealth Native Title Act 1993 provides the legislative framework that: <ul style="list-style-type: none"> • Recognises and protects native title. • Establishes ways in which future dealings affecting native title may proceed. • Establishes the National Native Title Tribunal. Details on this document's relevance to the Proposal is provided in Section 10
Biodiversity	
Conservation Act 1999 (EPBC Act)	The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the EPBC Act as Matters of National Environmental Significance (MNES). The EPBC Act requires the assessment of whether the Proposal is likely to significantly impact on MNES or Commonwealth land.

Document	Description
	Details on this document's relevance to the Proposal is provided in Section 10.
Heritage	
Aboriginal and Torres Strait Heritage Protection Act 1984	<p>If state or territory laws have not provided effective protection for traditionally important artefacts and objects that are under threat, the Aboriginal and Torres Strait Heritage Protection Act enables the Australian Government to respond to requests to protect these areas or objects. The government can make special orders, known as declarations, to protect significant Aboriginal areas, objects and classes of objects from threats of injury or desecration. However, a declaration can only be made if an Aboriginal or Torres Strait Islander person has requested it and has provided satisfactory evidence of a body of traditions, customs, observances and beliefs.</p> <p>The power to make declarations is intended to be used as a last resort, after the relevant processes of the state or territory have been exhausted. Generally, aboriginal heritage is managed in NSW under the National Parks and Wildlife Act 1974.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
State	
Crown Land Management Act 2016 No 58 Crown Land Management Regulation 2018	<p>The Crown Land Management Act 2016 and Crown Land Management Regulation 2018 regulates the ownership, use and management of Crown Land in NSW.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Transport Administration Act 1988	<p>The Transport Administration Act 1998 provides administration and management of transport infrastructure and transport agencies in NSW.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Planning	
Environmental Planning and Assessment Act 1979 (EP&A Act)	<p>Part 4 of the EP&A Act identifies the requirements for development assessment and consent.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10</p>
Environmental Planning and Assessment Regulation 2000	
State Environmental Planning Policy (Infrastructure) 2007	<p>The Infrastructure SEPP is a key environmental planning instrument which, in large part determines the permissibility of an infrastructure proposal and under which part of the EP&A Act an activity or development may be assessed.</p> <p>The Infrastructure SEPP prevails over all other environmental planning instruments except where there is an inconsistency with State Environmental Planning Policy (State Significant Precincts) 2005 or certain provisions of State Environmental Planning Policy (Coastal Management) 2018.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
State Environmental Planning Policy (State and Regional Development) 2011)	<p>Sections 89C(2) and 115U(2) of the EP&A Act provide that a SEPP may declare any development, or any class or description of development, to be State significant infrastructure (SSI) or State significant development (SSD). The State and Regional Development SEPP provides definitions of SSI and SSD.</p> <p>Section 8 of the State and Regional Development SEPP states that development is SSD if the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and the development is specified in Schedule 1 or 2 of the SEPP.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>

Document	Description
Roads Act 1993	<p>The Roads Act 1933 outlines the procedures for opening and closing public roads, as well as the regulations for carrying out various works and activities on public roads.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Biodiversity	
Biosecurity Act 2015	<p>The Biosecurity Act 2015 provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter. The Act also provides a framework for the timely and effective management of threats to terrestrial and aquatic environments arising from pests, diseases, contaminants and other biosecurity matter.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Biodiversity Conservation Act 2016 (BC Act)	<p>The BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The Act applies to animals and plants, but not in relation to fish and marine vegetation.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Local Land Services Act 2013 (LLS Act)	<p>Land management (native vegetation) is outlined under Part 5A of this Act. Native vegetation means the following types of plants native to NSW:</p> <ul style="list-style-type: none"> • Trees (including any sapling or shrub or any scrub). • Understorey plants. • Groundcover (being any type of herbaceous vegetation). • Plants occurring in a wetland. <p>A plant is native to NSW if it was established in NSW before European settlement.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
State Environmental Planning Policy (Koala Habitat Protection) 2020 & 2021	<p>State Environmental Planning Policy (Koala Habitat Protection) 2020 and State Environmental Planning Policy (Koala Habitat Protection) 2021 aim to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas and reverse the current trend of koala population decline.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Fisheries Management Act 1994	<p>The Fisheries Management Act 1994 objectives are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Heritage	
Heritage Act 1977	<p>The Heritage Act 1977 provides conservation of buildings, work, relics and places that are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance to the State.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
National Parks and Wildlife Act 1974 (NP&W Act)	<p>The NP&W Act is the primary legislation dealing with Aboriginal cultural heritage in NSW. Items of Aboriginal cultural heritage (Aboriginal objects) or Aboriginal places (declared under section 84) are protected and regulated under the NP&W Act.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Water	
Water Management Act 2000 (WM Act) Water Management (General) Regulation 2018	<p>Approvals under sections 89, 90 and 91 of the WM Act are required for certain types of developments and activities that involve the use of water, are carried out in or near a river, lake or estuary, or may intersect groundwater.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Water Act 1912	<p>The Water Act 1912 controls the extraction of water and use of extracted water.</p>

Document	Description
	Details on this document's relevance to the Proposal is provided in Section 10.
Construction	
Protection of the Environment Operations Act 1997 (PoEO Act)	<p>The PoEO Act is administered by the NSW Environmental Protection Agency (EPA) and regulates activities which may result in pollution impacts (e.g. land, air, water and noise pollution).</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Rural Fires Act 1997	<p>The objectives of the Rural Fires Act 1997 include the prevention, mitigation and suppression of bush and other fires in local government areas and rural fire districts. It is also for the protection of the environment by requiring certain activities to be carried out having regard to the principles of ecologically sustainable development described in section 6 (2) of the Protection of the Environment Administration Act 1991.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
Contamination	
Contaminated Land Management Act 1997 (CLM Act)	<p>The CLM Act regulates significantly contaminated land through requirements for notification to the NSW EPA, investigation, remediation and recovery of costs from the person responsible. The NSW EPA must be notified by the property owner in writing of any contamination identified within the Proposal in accordance with the requirements of section 60.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>
State Environmental Planning Policy No 55 - Remediation of Land (SEPP 55)	<p>SEPP 55 provides a state-wide approach to the remediation of contaminated land for the purpose of minimising the risk of harm to the health of humans and the environment.</p> <p>Details on this document's relevance to the Proposal is provided in Section 10.</p>

Appendix C Stakeholder Consultation

Stakeholder consultation log

Table 47 Log of stakeholder consultations

Consultation date	Stakeholder	Discussion
27 October 2021	Agribusiness Regional Development Association (ARDA) Daryl Young, Director / Secretary	<p><i>Key insight: ARDA is supportive of the consolidation centre concept and is currently working with the Federal Government to educate regional agribusinesses on the benefits of regional collaboration and consolidation when accessing export markets. Whilst a preferred location was not provided, it was indicated that it should be placed in the area with the highest level of demand.</i></p> <p>ARDA is non-profit association of regional agricultural businesses working to build strong and sustainable regional communities. ARDA provides pathways for its members to develop international trade opportunities, leverage the digital economy and access new finance and investment streams.</p> <p>ARDA is focused on agricultural activities, and agricultural production and export are important issues that they deal with. The association is running several programs on how SMEs can get involved in the export marketplace and how they can resolve employment shortfalls in regional areas, particularly around peak periods.</p> <p>ARDA is trying to identify constraints for SMEs and their ability to export and to enter the export marketplace if not already exporting. They are helping producers manage their processes and improve the use of advanced technologies, knowledge and communications systems and integrated workflows across the value chain. The focus at the moment is on educating SMEs and logistics is an important part of this work.</p> <p>ARDA identified that the main barrier for SMEs producers is the ability to have a continuous supply to satisfy the market. Due to their size and scale of operations each individual SME may have issues with continuity of product. ARDA is trying to facilitate the collaboration of producers and development of a regional brand mindset rather than individual supplier brand. This will allow buyers to recognise the region for its quality and seek to continue purchasing from multiples producers in the region.</p> <p>From a logistics point of view, the biggest challenge is the aggregation of supply. ARDA indicated that education and facilitation are essential to decrease the workload and make it easier to SMEs to get the aggregation and marketing collaboration. ARDA advised a potential solution is a hub and spoke model which allows multiple suppliers to harvest and supply produce to a single centre where it is aggregated and exported.</p> <p>ARDA indicated that Inland Rail is expected to facilitate access to markets however success depends on the SMEs' ability to understand the steps to be taken to use rail.</p> <p>It is understood that there is a current trend with agribusinesses to move way from commodities and move towards value added products.</p> <p>ARDA believes the consolidation centre should be placed at the location with the highest level of demand for products being exported in the region. This will make the facility the most convenient form of transport and attract users.</p> <p>ARDA commented that for perishable goods, the key is about timing to market and rail is unlikely to meet this requirement over road.</p>
3 November 2021	Hassall Trading	<p><i>Key findings: Logistics is the company's second biggest cost. Large inefficiencies exist in freight logistics, and rail has the potential to reduce costs and increase efficiencies in the supply chain.</i></p>

Consultation date	Stakeholder	Discussion
	<p>Jeremy Hassall, Director</p> <p>Ian Rousell, Production Manager</p> <p>Kevin Trembath, Compliance Manager</p>	<p>Hassall Trading is a family-owned business founded in 1926. The company has grown to be one of Australia's largest exporters of quality Australian raw and semi tanned leather for use in various industries, including fashion, sports, luxury and automotive brands globally. Leather, a by-product of the Australian meat industry, is sourced from processors with the best records for animal welfare and sustainability. The company has tanneries in six locations – regional and metropolitan, across NSW, Victoria and SA.</p> <p>Of the three proposed locations for the consolidation centre, the company's preference is Forbes given it has a tannery located there. Products are currently transported by road to Bathurst and then by rail into Sydney for distribution interstate and to export markets. The company uses LINX, a Patrick's owned freight company, to freight all product.</p> <p>The company currently transports around 20 containers (20 foot) of product a week out of their Forbes tannery. This is slightly below average (25 containers/week) given the current beef market situation. Volumes are expected to increase to around 30 containers/week over the coming five years.</p> <p>After wages, logistics is the company's second biggest cost. There are large inefficiencies in freight logistics. The company can transport product by road to Melbourne 20% cheaper than transporting product from the Central West to Port Botany in Sydney.</p> <p>If Inland Rail can reduce costs, it can only be a good thing. Using rail would see a reduction in handling, with product able to be loaded directly into containers and then unloaded when it reaches the customer.</p> <p>If there are economic benefits, the company would look to utilise rail and the consolidation centre. Currently the turnaround time for freight to Sydney can be 3-5 days depending on container availability and freight schedules. Jeremy said there would need to be a minimum of two trains per week in and out of the region, with quick turnaround times essential.</p> <p>The company has no specific infrastructure requirements if the proposed consolidation centre progresses but would need a supply of empty containers available on site, easy access to containers, and representation from a freight contractor at the centre.</p> <p>Hassall Trading is happy to provide a letter of support and engage in future stakeholder consultations.</p>
3 November 2021	<p>Orange Region Vignerons Association</p> <p>Charlotte Gundry, Executive Officer</p> <p>Tom Ward, President</p>	<p><i>Key findings: The biggest barrier to using rail is the time delay for delivery, and the need to manage customer expectations around this.</i></p> <p>The Orange Region Vignerons Association is the representative body for the region's wine industry. The association's membership consists of viticulturalists, grape growers, cellar doors and others with an interest in the region's wine industry.</p> <p>In principle, the association is supportive of the Proposal if it is located in Orange, is easily accessible and easy to use (i.e. moving product from one point to the next), and it is affordable (i.e. there are economic benefits) to freight product to Brisbane and Melbourne.</p> <p>While Orange is the association's preferred location, they could still utilise the centre if it was in Forbes or Parkes if there was a pickup and drop off point for transport companies to freight product to the rail point.</p> <p>The Orange region produces around 60,000 tonnes of fruit a year which equates to 60 cases of wine per tonne. Of this, 60-70% remains in the region as made wine and the balance (360,000 cases) is sold out of the region. The export market, predominately China (although this has decreased in recent years), comprises about 10% of the region's sales.</p> <p>Sydney is a key market for the region, with some of the larger vineyards more recently branching out into the Melbourne and Brisbane marketplace. If Inland Rail made distribution easier and was competitive</p>

Consultation date	Stakeholder	Discussion
		<p>on freight charges, other vineyards in the region could also look to grow their markets.</p> <p>The region has seen large growth in sales direct to consumer, and Tom commented this is likely to continue. Wine is shipped in pallets or individual cases using local freight providers.</p> <p>Producers need to manage stock collectively, with temperature control being critical.</p> <p>Most shipments go via Sydney for distribution elsewhere, increasing the freight cost for interstate deliveries. The industry has rate cards with Australia Post and a consolidation point exists in Orange. If the Proposal were to go ahead, Australia Post could also potentially utilise the centre.</p> <p>It was also suggested that companies such as Wine Depot, who hold stock and charge a commission on delivery, could utilise the centre.</p> <p>The biggest barrier to using rail is the time delay for delivery, and the need to manage customer expectations.</p> <p>The association raised a number of questions around the end point; including "what happens when product lands in Melbourne or Brisbane at the end of the Inland Rail?" and "Who manages the next delivery point?". Currently all product is transported by road, with door to door delivery.</p> <p>The Orange Region Vignerons Association is happy to provide a letter of support.</p>
4 November 2021	<p>Superbee Honey</p> <p>Ross Christiansen, Director</p>	<p><i>Key findings: If the costs are competitive, the company could look to send export and import freight to and from Melbourne or Brisbane.</i></p> <p>Superbee Honey is a family-owned business that started in 1968 in Tanawha, Queensland. The company is Australia's leading privately owned manufacturer of pure Australian honey, royal jelly and propolis.</p> <p>The Christiansen's purchased Superbee in 2005, and relocated to Forbes, NSW in 2008, allowing for smoother production times and reduced freight time between interstate hives. Around 40% of Australia's honey is sourced from across the Forbes region.</p> <p>Of the three proposed locations for the consolidation centre, the company's preference is Forbes given that they have a factory located there.</p> <p>The company currently uses road transport to freight products to Melbourne and Brisbane for distribution to customers. This requires two truck movements for product delivery.</p> <p>During October 2021, the company sent 18 pallets of honey to Queensland and 36 pallets to Victoria. Each pallet weighs approximately 960kg.</p> <p>Product is also freighted by road from the Forbes factory to Bathurst and then loaded onto trains for transport into Port Botany, Sydney for export to South East Asia, the United States, Papua New Guinea, and Fiji. Honey is exported in 20-foot containers. Ross commented they are limited to 24 tonnes in each container as these are the maximum road freight limits.</p> <p>Import freight (jars) is transported by rail from Sydney to Bathurst and trucked from Bathurst to the Forbes factory. The company is importing 3-4 containers (40-foot) of jars a month from China.</p> <p>The factory is located nearby the GrainCorp rail siding in Forbes. The company has discussed the potential to use rail services to freight product with GrainCorp, but found that freight costs were no cheaper than road freight.</p> <p>The company also raised concerns about distribution of product when it arrives by Inland Rail into Melbourne or Brisbane, noting that containers would need to be unloaded and pallets trucked to a distribution depot.</p>

Consultation date	Stakeholder	Discussion
		<p>This would increase the number of freight movements throughout the supply chain.</p> <p>The real question is what would the total cost be to move to rail freight? If the cost is competitive, the company could look to send export and import freight to and from Melbourne or Brisbane.</p> <p>Superbee Honey is happy to provide a letter of support and engage in future consultations as required.</p>
8 November 2021	<p>Kebby and Watson Tichborne</p> <p>Mark Swift, Director</p>	<p><i>Key findings: Agriculture is an input heavy industry and having distribution centres located outside major metropolitan centres would be beneficial to the sector. It is important that inputs are bought into the region in a timely and efficient manner, as well as freighting commodities out of the region efficiently and cost effectively.</i></p> <p>Kebby and Watson Tichborne are a farming business (continuous cropping), located between Parkes and Forbes in the central west of NSW. The company grows winter and summer crops – cereals, canola, pulses, sorghum and mungbeans.</p> <p>Production is seasonal, ranging from 2000–18,000 tonnes per year. The company sells most of its grain (85-90%) into the domestic market, with around 10-15% going export.</p> <p>The company is looking at containerising grain as a commercial arm to the business. If it can remove the need to pay someone else to containerise grain and they can do it themselves, it puts them on the front foot, providing the opportunity 'to be a step ahead' of other growers. If this was to progress, the company would potentially look to transport grain to Port of Adelaide for export.</p> <p>The company believes the biggest issue for the grains industry is that trains cannot be unloaded fast enough at Port. The export market is grossly inefficient, hence the domestic marketplace is the dominant market for the east coast grain market.</p> <p>The company transports all grain by road, providing end to end control over sale and delivery, removing the need for intermediary points along the supply chain. However, the main challenges with road transport are the cost, access and surge capacity.</p> <p>Presently, grain is moved in bulk. To move from road to rail transport requires a step change for businesses. Handling is another barrier, along with accessing containers.</p> <p>With no containers stored locally, access and supply of containers (a container terminal) would be critical to the success of the Proposal. Mark also spoke about the need for other businesses (e.g. cleaning, bagging) to be involved and utilising the proposed consolidation centre.</p> <p>Agriculture is an input heavy industry and having distribution centres located outside major metropolitan centres would be beneficial for the sector. The recent COVID lockdowns have seen large delays on delivery of products from metropolitan warehouses, resulting in delays across the entire supply chain. For the company, it is equally as important to be able to easily bring inputs into the region in a timely and efficient manner, as well as freighting commodities out of the region efficiently and cost effectively.</p> <p>The company believes it makes sense logistically to locate the proposed consolidation centre at Parkes. When asked about risk, he said the biggest risk is if nothing happens! Currently there is little detail about the Proposal. Mark commented that the company's in-kind is limited to discussions about the Proposal – he said it's currently hypothetical and he would like to see more detail. He said discussions need to be had, with assurance things will happen rather than the 'usual' talkfest with no outcomes.</p>

Consultation date	Stakeholder	Discussion
		The company would like to be kept informed of the proposal's progress and are happy to engage further as required.
10 November 2021	Manildra Group Mark Owens, National Transport and Logistics Manager	<p><i>Key findings: The company owns and operates its own sites to consolidate and support the business. The proposed central west consolidation centre would not benefit Manildra Group.</i></p> <p>Manildra Group is a family-owned business established in 1952 with the purchase of a flour mill in Manildra, central west NSW. Manildra Group is 100% Australian owned and has grown to become a diverse agribusiness supplying Australian food and industrial products globally. The company has four flour mills located across the Australian wheatbelt and processes over one million metric tonnes of wheat each year. This equates to around one-sixth of NSW's total annual production. The company also owns and operates four grain storage sites in the central west NSW at Manildra, Bellata, Moree and Stockinbingal.</p> <p>The company uses these sites to consolidate and support the business and said the development of a consolidation centre would not provide benefits to their business. Manildra does not see any changes to current supply chain/freight pathways if the proposed consolidation centre were to progress. As the business continues to grow, larger trains will be used, but the freight pathways will remain - on the south coast main line. Manildra Mill uses grain from both rail and road inbound and then distributes domestic flour product to customers and to its national warehouses via road. Export containers ex- Manildra Mill and its Nowra site operate to port via rail.</p>
25 November 2021	Blayney Wholesale Foods George Tanos, Managing Director	<p><i>Key findings: Blayney Wholesale Foods own a rail siding and have their own freight company, they do not believe there is sufficient demand for the facility. The proposed consolidation centre would not benefit the company.</i></p> <p>Blayney Wholesale Foods distributes products, local and international, to the food service industry across the central west of NSW.</p> <p>Blayney Wholesale Foods own a rail siding and have their own freight company. The proposed consolidation centre would not benefit the company.</p> <p>The company has spare rail capacity that could be used as a consolidation point, however noted that there is insufficient demand to warrant further facilities in the region.</p> <p>George commented that building a consolidation centre at Parkes would be duplicating the existing infrastructure and would not be a viable option. Forbes is too close to Parkes, and he said Orange does not have the infrastructure or demand (including passenger rail) to warrant the development.</p> <p>If the proposed consolidation centre is to be progressed, George believes it would be better located at Blayney where there are several companies operating, including Nestle and Friskies Petcare. But ultimately it needs to be driven by demand and George does not believe the demand exists to warrant the development of a consolidation centre.</p> <p>It was suggested Nestle and Friskies Petcare are also consulted as part of the stakeholder engagement process.</p> <p>The company transports product (non-cold store) by rail to Port Kembla, Wollongong.</p> <p>All food service and cold store products are transported by road. The numbers do not stack up to transport these products by rail. Transporting cold store products requires trains to be powered to keep product cold, a major cost which the company nor their customers are prepared to wear. George said they have investigated using rail previously, but it is simply not cost effective.</p>

Consultation date	Stakeholder	Discussion
		While the company were happy to have a conversation, they are not supportive of the Proposal.

DRAFT

Appendix D Letters of Support

Hassall Trading's Letter of Support:

LORIS H HASSALL TRADING PTY LTD

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17th November 2021

Letter of Support

To Whom It May Concern,

On 3 November 2021 Hassall's Trading was provided with an overview of the Central West Consolidation Centre as part of the Inland Rail Improvement Program.

The proposal looks to improve the economic opportunities in the central west NSW region by identifying barriers that small to medium enterprises may experience in trying to access the benefits from Inland Rail.

As part of the proposal, consolidation centre options will be developed for the central west NSW region, with the options to be defined in terms of location, the scale of the centre and nature of goods handled. The consolidation centre will allow multiple SMEs to consolidate freight where practical to gain efficiencies of scale when transporting freight.

Three options for location of the consolidation centre are being considered:


- Location 1: Parkes
- Location 2: Forbes
- Location 3: Orange

Logistics is a significant cost to the business. There are large inefficiencies in freight logistics. Currently the company can transport product by road to Melbourne 20% cheaper than transporting product from the central west NSW to Port of Sydney. If Inland Rail can reduce costs, it can only be a good thing!

Using rail to freight product would see a reduction in handling with product able to be loaded direct into containers and then unloaded when it reaches the customer.

Hassall's Trading is supportive of the proposal with location 2 – Forbes being their preferred location for the consolidation centre.

Yours Sincerely


Jeremy Hassall

Director

Loris Hassall Trading Pty Ltd

Orange Region Vignerons Association's Letter of Support:



ORVA

Orange Region Vignerons Association
PO BOX 1363 ORANGE NSW 2800
Email: info@orangewineregion.com.au
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Ms Charlotte Gundry
Executive Officer
Orange Region Vignerons Association
E: info@orangewineregion.com.au

16th November, 2021

Re: Letter of Support

To Whom It May Concern

On 3 November 2021 the Orange Region Vignerons Association was provided with an overview of the Central West Consolidation Centre as part of the Inland Rail Improvement Program.

The proposal looks to improve the economic opportunities in the central west NSW region by identifying barriers that small to medium enterprises may experience in trying to access the benefits from Inland Rail.

As part of the proposal, consolidation centre options will be developed for the central west NSW region, with the options to be defined in terms of location, the scale of the centre and nature of goods handled. The consolidation centre will allow multiple SMEs to consolidate freight where practical to gain efficiencies of scale when transporting freight.

Three options for location of the consolidation centre are being considered:

- Location 1: Parkes
- Location 2: Forbes
- Location 3: Orange

The Orange Region Vignerons Association is supportive of the proposal with location 3 – Orange being their preferred location for the consolidation centre.

Sydney is a key market for the region, with some of the larger vineyards more recently branching out into the Melbourne and Brisbane marketplace. If Inland Rail made distribution easier and was competitive on freight charges, other vineyards in the region could also look to grow their markets.

We are supportive of the proposal and look forward to further engagement as the project progresses.

Yours Sincerely

Charlotte Gundry
Executive Officer
Orange Region Vignerons Association

Superbee Honey's Letter of Support:

Bee Wonderful Pty. Ltd. ABN 37 113 160 517 Trading as



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Re: Letter of Support

To Whom It May Concern

On 4 November 2021 Superbee Honey was provided with an overview of the Central West Consolidation Centre as part of the Inland Rail Improvement Program.

The proposal looks to improve the economic opportunities in the central west NSW region by identifying barriers that small to medium enterprises may experience in trying to access the benefits from Inland Rail.

As part of the proposal, consolidation centre options will be developed for the central west NSW region, with the options to be defined in terms of location, the scale of the centre and nature of goods handled. The consolidation centre will allow multiple SMEs to consolidate freight where practical to gain efficiencies of scale when transporting freight.

Three options for location of the consolidation centre are being considered:

- Location 1: Parkes
- Location 2: Forbes
- Location 3: Orange

Superbee Honey is supportive of the proposal with location 2 – Forbes being their preferred location for the consolidation centre.

The ability to consolidate freight and move from predominately road to rail, if cost effective, would reduce costs to the business, reduce freight movements for product delivery and potentially expand our markets.

We are supportive of the proposal and look forward to further engagement as the project progresses.

Yours Sincerely

Regards

ROSS CHRISTIANSEN
(Director)

Appendix E Additional Demand Information

P2_022 – Central West
Consolidation Centre
Demand analysis
appendix

Department of
Infrastructure, Transport,
Regional Development
and Communications
(DITRDC)

February 2022



•
george stanley consulting



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Glossary

[illegible]

1 Background and purpose

1.1 Purpose of this paper

This paper is a technical report providing an overview of the methodology and key assumptions regarding the demand analysis for P2_022 – Central West Consolidation Centre Proposal as part of the Inland Rail Interface Improvement Program. This report is related to the demand analysis contained in Chapter 5 of the Gate 2 – Pre-Feasibility Study.

1.2 Scope of works and limitations

george stanley consulting (gsc) were engaged by the Department and EY to undertake an initial assessment of the freight task and potential impact on freight demand of the Central West region.

Although this analysis approach follows guidelines provided by the Department and/or its advisors, particularly Guidance on Freight Analysis produced by the Department's Technical and Assurance Advisor, and it is subject to several assumptions. In undertaking the demand analysis, gsc has relied upon materials and data provided by the Proponent as well as publicly available data and insights provided by stakeholders. We have not independently verified, or accept any responsibility or liability for independently verifying, any information provided to us by the Proponent or information obtained in the public domain for the purpose of this assessment, nor do we make any representation as to the accuracy or completeness of the information.

1.3 Disclaimer

The information in this document and in any oral presentations made by gsc is confidential to gsc and should not be disclosed, used, or duplicated in whole or in part for any purpose other than the evaluation by the Department, EY or gsc for the purposes of this report.

2 Methodology overview

2.1 Overview of the Proposal

The Proposal includes the identification of potential barriers that SMEs may experience in trying to access the benefits from the Inland Rail. This includes investigating potential infrastructure solutions to enable benefits from Inland Rail.

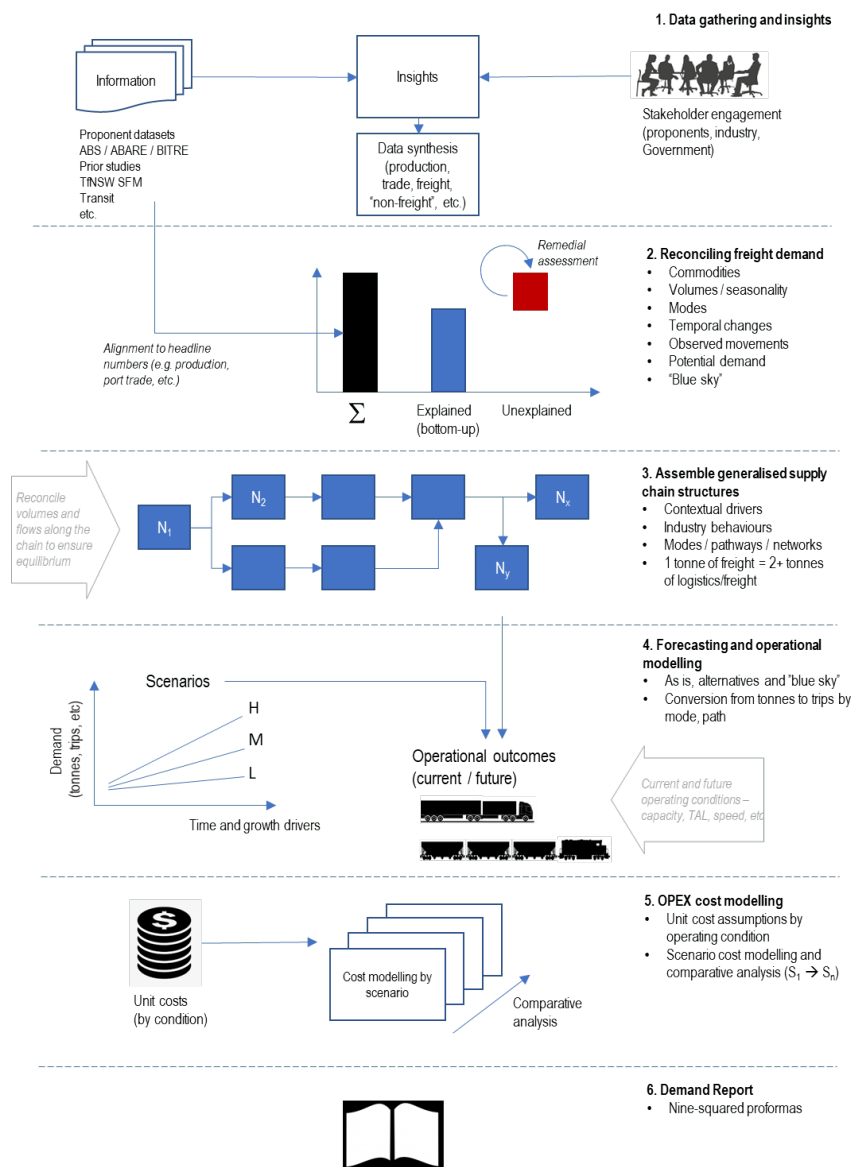
The goal is to improve and facilitate the ability of regional business and SMEs to access the Inland Rail line and continue to grow sustainably. The Proposal would provide long-term regional benefits, increasing the connectivity of SMEs to freight supply chains and domestic and potentially international markets.

Three consolidation centre options will be developed for the Central West NSW region, with those options to be defined in terms of location, the scale of centre and nature of goods handled.

2.2 Summary of approach undertaken

The process for undertaking the freight demand analysis is summarised in the diagram below. Details are contained in the following sections.

Figure 1 Freight demand estimation – methodology overview



2.3 Data gathering and insights from stakeholders

To understand the potential freight task that will be affected by the Proposal, the first step is to gather insights related to agricultural production and freight supply chains. These insights have been obtained by holding conversations/consultations with the following stakeholders:

- The Proponent
- Other stakeholders as identified in Chapter 4 of the Gate 2 Pre-Feasibility Study

These insights were supplemented with publicly available data and sources on agricultural production and freight movements, including:

- Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
- Australian Bureau of Statistics – Agricultural statistics
- ARTC rail estimates
- TfNSW Freight Hub
- ABS Freight Movements Survey 2013-14

2.4 Reconciling freight demand

Data and insights obtained through the data gathering process are then reconciled to identify:

- Key commodities produced within the Proposal's study area
- Observed and potential production volumes
- Key trends and drivers that may affect production
- High level freight paths and mode share.

Scenario based estimates (high, average and low) are produced for production of key commodities based on observed and potential future trends and drivers. These estimates form the basis of the potential freight demand estimates.

2.5 Assembling generalised supply chain structures

Based on the previous steps, commodity supply chain are constructed to understand inbound and outbound movements to and from the study area as well as freight modal shares. Production volumes of key commodities are distributed along key elements of the supply chain to reflect:

- Ex-farm movements
- Movements to intermediate producers (e.g. silos, gins)
- Movements to warehouses and packing facilities
- Movements associated with exports (e.g. direct and indirect movements to ports)
- Mode split between road and rail

From this analysis, volumes that are contestable by the Proposal are identified and used as an input to forecast freight demand. These are identified for each production scenario.

2.6 Demand forecasting and operational modelling

Using a scenario-based approach for contestable freight volumes (high, medium, low), demand volume estimates are produced. These volume estimates are then converted into freight requirements, (e.g. number and frequency of trains/trucks), based on a number of operational assumptions under the base and project cases, such as:

- Tonne Axle Loads
- Capacity
- Service lengths

Agricultural volumes are forecasted assuming Compound Annual Growth rates (CAGRs) obtained from TfNSW, as per Appendix A.

2.7 Opex cost modelling

Operational cost modelling is then undertaken by mode and pathway to predict freight destinations and type (i.e. road or rail). This analysis is based on estimates on the per tonne cost of freight associated with the different volume scenarios identified in the previous step. Operational costs assessed include:

- Labour costs
- Wagon and locomotive maintenance costs
- Fuel costs
- Rail access costs
- Capex and finance costs
- Vehicle operating costs

Unit costs are based on industry insights and cost guidance from TfNSW (see Appendix B). Overheads and port access charges were not included.

2.8 Demand report

The analysis conducted in the previous steps is summarised and presented in Chapter 5 of the Pre-Feasibility Study for the Proposal following Guidance on Freight Analysis produced by the Department's Technical and Assurance Advisor.

Appendix A – Commodity growth rates

The following table shows growth rates adopted to forecast agricultural production volumes.

Commodity	CAGR %	Reference	Comments
Beverage, Wine	2.3%	Text; p66	Consumption
Cement/Concrete	1.2%	Table 6, p20	Incl. transfers between metro/rural
Chemicals	1.3%	Figure 5; p11	NSW industrial
Consumer, Industrial, Wholesale, Food service (peri-urban)	2.4%	Table 5; p17	Sydney GMA, incl Blue Mountains
Consumer, Industrial, Wholesale, Food service (NSW regional)	1.0%	Table 46, p74	Central West, Orana, etc. Lower population driver
Food processing	1.3%	Figure 5; p11	
Fuel	0.5%	Table 13, p29	Regional household, mining, agricultural
General; intrastate/interstate	1.5%	Table 40; p71	Overall (road)
Grains	1.1%	Table 2, p14	
Gravel, sand	1.2%	Table 6, p20	
Live animals	2.6%	Table 2, p14	
Machinery	1.0%	Composite	Coal at 0.5%; farm sector at 1.5%
Misc Manuf; consumer/industrial	1.3%	Figure 5; p11	
Other commodities	1.5%	Table 33; p61	Mostly agricultural / horticultural
Other manufacturing	1.3%	Figure 5; p11	
Steel	0.7%	Table 2, p14	
Timber, logs (North Coast)	1.1%	Table 6, p20	
Wood, timber	1.1%	Table 6, p20	

Source: TfNSW – Freight Commodity Demand Forecasts 2016 -2056

Appendix B – Costs parameters for opex modelling

Cost component		Low	Medium	High
Below Rail Costs	Item 1a – rail track fixed maintenance cost by volume (\$ / track km) – Coal network			
	1 – 10 million ton per annum (mtpa)	\$11,329.42	\$16,994.13	\$28,323.56
	10 – 30 mtpa	\$16,994.13	\$28,323.56	\$45,317.69
	30 mtpa and above	\$22,658.85	\$28,323.56	\$56,647.12
	Item 1b – rail track fixed maintenance cost by volume (\$ / track km) – Inter-state network			
	Inter-state network	\$21,525.90	\$26,057.67	\$36,254.15
	Item 2 – network control and corporate overheads (\$ / track km)*	\$6.80	\$10.20	\$13.60
	Item 3 – rail track variable maintenance costs (\$ / '000 gtk)	\$1.22	\$2.27	\$3.40
	Item 4 – major periodic maintenance (\$ / track km) – assume every 5 or 10 years based on usage	\$11,329.42	\$28,323.56	\$56,647.12
	Rolling stock – upfront capex			
	Item 5a – locomotive (\$m per DC 3000 hp locomotive)	\$4.31	\$4.42	\$4.53
	Item 5b – locomotive (\$m per AC 4500 hp locomotive)	\$5.44	\$5.55	\$5.66
	Item 5c – wagon (\$ per wagon)	\$90,635.39	\$135,953.08	\$181,270.77
	Re-fit costs			
Above Rail Costs	Item 6a – DC 3000 hp locomotive (\$m)	\$1.36	\$1.47	\$1.59
	Item 6b – AC locomotive (\$m)	\$1.70	\$1.81	\$1.93
	Item 6c – wagon re-fit cost (\$ per wagon)	\$9,063.54	\$33,988.27	\$90,635.39
	Rolling stock – Maintenance costs (annualised average costs)			
	Item 7a – locomotive maintenance (\$ per loco per year), assuming 250,000km per year operations, and including scheduled, unscheduled, wheels, component change out (CCO) and maintenance facility charge	\$396,529.81	\$453,176.93	\$509,824.05
	Item 7b – locomotive maintenance (\$ per locomotive km)		\$1.98	
	Item 8a – wagon maintenance (\$ per wagon per year), assuming 250,000km per year operations, and including scheduled, unscheduled, wheels, component change out (CCO) and maintenance facility charge	\$14,161.78	\$16,994.13	\$21,242.67
	Item 8b – wagon maintenance (\$ per km per wagon)	\$0.06	\$0.07	\$0.08
	Fuel and crew costs			
	Item 9 – fuel consumption (L / locomotive km)	3 (flat or empty train)	5 (loaded train or Mixed terrain)	8 (hilly or bulk coal or steel)
	Item 10 – crewing cost (standard 2 person crew per hour)	\$291.59	\$338.25	\$384.90

Source: TfNSW – Economic Parameter values 2020

Appendix F Additional Benefits Information

This appraisal uses a rail freight CBA framework to assess the potential change in economic resource costs attributable to the Proposal. Benefits are derived from the transportation of freight volumes and include the following benefit drivers:

- **Rail benefits** – benefits associated with improvements to rail operations.
- **Intermodal terminal benefits** – benefits associated with intermodal terminal operations and the facilitation of freight onto rail.
- **Road benefits** – benefits associated with mode shift of freight from road to rail.
- **Wider & non-transport benefits** – benefits associated with improvements to the wider community and non-transport benefits.

Induced demand definitions

This appraisal follows the ATAP Guidelines terminology concerning induced, generated and diverted demand as follows:

- **Diverted demand** – refers to demand that is diverted from other sources. For example, mode shift from road to rail.
- **Generated demand** – refers to altogether new demand resulting from an initiative.
- **Induced demand** – refers to the sum of generated and diverted demand.

As per these definitions, when the formulae outlined below refers to induced demand it means that it can be applied to diverted and generated demand (unless otherwise indicated).

Rail benefits

Rail benefits for the Proposal.

Rail environmental impact

Rail environmental impacts relate to environmental externalities generated by rail freight. Benefits result from a reduction in GTKs, or from more freight being transported through rural as opposed to urban areas. These include reductions in air and noise pollution, greenhouse gas emissions and urban separation.

The general formula is: Gross Tonne Kilometres (by rail) x Externality Costs.

Environmental impacts can be calculated as follows:

Equation 1: Rail environmental impact cost savings

$$\text{Rail environmental impacts}^t = \sum_V \sum_{ij} \sum_L \frac{(GTK_{ij}^{B,V,L,t} - GTK_{ij}^{P,V,L,t}) \times \text{rail ext}^L}{1000}$$

Where:

- $GTK_{ij}^{X,V,t}$ is the gross tonne kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project Case), by freight type V , in location L (U = urban and R = rural), in year t .
 - $GTK_{ij}^{X,V,t} = \sum_S \text{tonnes}_{ij}^{X,V,t} \times \text{dist}_{ij}^{B,V,t} \times \text{gross weight}_{ij}^{B,V,S,t} / \text{capacity}_{ij}^{X,V}$.
 - $\text{tonnes}_{ij}^{X,V,t}$ is the total freight tonnes transported by rail from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
 - $\text{dist}_{ij}^{X,V}$ is the one-way distance travelled per service in kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
 - $\text{gross weight}_{ij}^{X,V,S}$ is gross weight per train consist from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and by service load S (W = full service load, U = empty service load).

- o $capacity_{ij}^{X,V}$ is net capacity per train consist from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V.
- $rail\ ext^L$ is the total externality unit costs per GTK for rail freight in location L (U = urban and R = rural).

Table 48: Key parameters used in rail environmental impact cost savings calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Rail freight externality – Urban	Air pollution: \$4.90 GHG emission: \$0.44 Noise: \$2.08 Water pollution: \$0.15 Nature & landscape: \$1.18 Urban separation: \$1.18 Total: \$9.94	\$FY22/000' GTK	Transport for NSW: Economic Parameter Values, Table 44
Rail freight externality – Rural	GHG emission: \$2.13 Water pollution: \$0.15 Nature & landscape: \$1.18 Total: \$3.47	\$FY22/000' GTK	Transport for NSW: Economic Parameter Values, Table 45

Intermodal Terminal benefits

Benefits relating to improvements to the road/rail interface, access to rail by road, and intermodal terminal upgrades for the Proposal.

Rail access travel time

Rail access travel time savings result from reduced upstream travel time for commodities to get to the point at which they are loaded onto rail. These time savings apply both to freight, and to the driver hours required to get freight to rail.

The general formula is: [Net Tonnes (by rail) x Travel Time Savings x Value of Freight Time] + [Vehicle Hours Travelled Savings x Value of Driver Travel Time].

Freight travel time saving has been calculated using the following formulae:

Equation 2: Freight travel time savings for existing demand

$$Freight\ travel\ time\ savings\ for\ existing\ demand^t = \sum_V \sum_{ij} tonnes_{ij}^{B,V,t} \times (TT_{ij}^{B,V} - TT_{ij}^{P,V}) \times VoFT$$

Equation 3: Driver travel time savings for existing demand

$$Driver\ travel\ time\ savings\ for\ existing\ demand^t = \sum_V \sum_{ij} VHT_{ij}^{B,V,t} \times (TT_{ij}^{B,V} - TT_{ij}^{P,V}) \times VoDT$$

Equation 4: Freight travel time savings for induced demand

$$Freight\ travel\ time\ savings\ for\ induced\ demand^t = \sum_V \sum_{ij} (tonnes_{ij}^{P,V,t} - tonnes_{ij}^{B,V,t}) \times (TT_{ij}^{B,V} - TT_{ij}^{P,V}) \times RoH \times VoFT$$

Equation 5: Driver travel time savings for induced demand

Driver travel time savings for induced demand^t

$$= \sum_V \sum_{ij} (VHT_{ij}^{P,V,t} - VHT_{ij}^{B,V,t}) \times (TT_{ij}^{B,V} - TT_{ij}^{P,V}) \times RoH \times VoDT$$

Where:

- $tonnes_{ij}^{X,V,t}$ is the total freight tonnes transported by rail from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
- $VHT_{ij}^{X,V,t}$ is the total vehicle hours travelled, upstream of rail, from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
- $TT_{ij}^{X,V}$ is the one-way travel time per service from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
- RoH is the rule of half.
- $VoFT$ is the value of freight time.
- $VoDT$ is the value of driver time.

Table 49: Key parameters used in rail access travel time savings

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Value of freight time	\$1.06	\$FY22/tonne hour	ARTC (2010), 'Melbourne-Brisbane Inland Rail Alignment Study', NSW Government
Value of driver time	\$32.74	\$FY22/vehicle hour	Transport for NSW (2019), Economic Parameter Values, Table 3 (based on heavy bus driver)
Rule of half	0.5	unit	EY assumption

Rail access VOC

This item calculates the savings from reduced vehicle operating costs resulting from easier access for commodities to access rail under the Project.

The general formula is: Vehicle Kilometres Travelled (by road) x Operating Costs.

Vehicle operating cost savings can be calculated as follows:

Equation 6: Vehicle Operating Cost savings – existing demand

$$= \sum_V \sum_{ij} (VKT_{ij}^{B,V,t} - VKT_{ij}^{P,V,t}) \times (VOC_{ij}^{Re} - VOC_{ij}^{Pe})$$

Equation 7: Vehicle Operating Cost savings – induced demand

$$= \sum_V \sum_{ij} (VKT_{ij}^{B,V,t} - VKT_{ij}^{P,V,t}) \times (VOC_{ij}^{Re} - VOC_{ij}^{Pe}) \times RoH$$

Where:

- $VKT_{ij}^{X,V,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in year t .
 - $VKT_{ij}^{X,V,t} = tonnes_{ij}^{X,V,t} \times dist_{ij}^{X,V} \times 2/capacity_{ij}^{X,V}$.

- $\text{tonnes}_{ij}^{X,V,t}$ is the total freight tonnes transported by road from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
- $\text{dist}_{ij}^{X,V}$ is the one-way road distance travelled per vehicle in kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
- $\text{capacity}_{ij}^{X,V}$ is the average net vehicle capacity weighted by vehicle type from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
- VOC_{ij}^{Xe} is the VOC per kilometre by Xe (Re = resource VOC and Pe = perceived VOC).
- RoH is the rule of half.

Table 50: Key parameters used in rail access VOC

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Resource VOC	Parkes to Sydney: \$1.43 Parkes to Brisbane: \$1.43 Parkes to Melbourne: \$1.43 Newcastle to Parkes: \$1.43	\$FY22/km	EY analysis of TfNSW parameters
Perceived VOC	Parkes to Sydney: \$0.70 Parkes to Brisbane: \$0.70 Parkes to Melbourne: \$0.70 Newcastle to Parkes: \$0.70	\$FY22/km	EY analysis of TfNSW parameters
Rule of half	0.5	unit	EY assumption

Rail access damage cost savings

Cost savings from reduction in damage to upstream road infrastructure.

The general formula is: Vehicle Kilometres Travelled (by road) x Cost of Road Damage.

These can be calculated as follows:

Equation 8: Rail access damage cost savings

$$\text{Last mile access damage cost savings}^t = \sum_V \sum_{ij} (VKT_{ij}^{B,V,t} - VKT_{ij}^{P,V,t}) \times \sum_x (DC^x \times \%^x)$$

Where:

- $VKT_{ij}^{X,V,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in year t .
- DC^x is the cost of road damage per kilometre for vehicle type x .
- $\%^x$ is the proportion of freight travelling by vehicle type x .

Table 51: Key parameters used in rail access damage cost savings

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Cost of road damage	Light commercial: \$0.05 Light rigid: \$0.05 Medium rigid: \$0.11 Heavy rigid: \$0.16 4 Axle: \$0.16 5 Axle: \$0.18 6 Axle: \$0.21 B-Doubles: \$0.27 B-Triples / Road trains: \$0.38	\$FY22 / VKT	Transport for NSW (2019), Economic Parameter Values, Table 50

Rail access environmental impacts

Road users also generate externalities on third parties and the community. Environmental impacts per VKT can be calculated using TfNSW parameters. Externalities usually captured include:

- Air pollution.
- Greenhouse gas emissions.
- Noise and water pollution.
- Nature and landscape.
- Urban separation.
- Upstream and downstream costs.

The general formula is: Vehicle Kilometres Travelled (by road) x Externality Costs.

These can be calculated as follows:

Equation 9: Rail access environmental impact cost savings

$$= \sum_V \sum_{ij} \sum_L \text{Last mile access environmental impacts}^t (VKT_{ij}^{B,V,L,t} \times \text{road ext}^{B,L}) - (VKT_{ij}^{P,V,L,t} \times \text{road ext}^{P,L})$$

Where:

- $VKT_{ij}^{X,V,L,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in location L (U = urban and R = rural), in year t .
 - $VKT_{ij}^{X,V,t} = \text{tonnes}_{ij}^{X,V,t} \times \text{dist}_{ij}^{X,V} \times 2 / \text{capacity}_{ij}^{X,V}$.
 - $\text{tonnes}_{ij}^{X,V,t}$ is the total freight tonnes transported by road from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
 - $\text{dist}_{ij}^{X,V}$ is the one-way road distance travelled per vehicle in kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
 - $\text{capacity}_{ij}^{X,V}$ is the average net vehicle capacity weighted by vehicle type from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type.
- $\text{road ext}^{X,L}$ is the total externality unit costs for road freight weighted by vehicle type in scenario X (B = Base Case and P = Project case), in location L (U = urban and R = rural).

Table 52: Key parameters used in rail access environmental impact cost savings calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Road freight externality – Urban Light Commercial	Air pollution: \$0.08 GHG emission: \$0.03 Noise: \$0.01 Water pollution: \$0.01 Nature & landscape: \$0.01 Urban separation: \$0.01 Upstream & downstream costs: \$0.08	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality – Urban Rigid Trucks	Air pollution: \$0.18 GHG emission: \$0.04 Noise: \$0.03 Water pollution: \$0.03 Nature & landscape: \$0.00 Urban separation: \$0.02 Upstream & downstream costs: \$0.16	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality – Urban Articulated Trucks	Air pollution: \$0.71 GHG emission: \$0.01 Noise: \$0.05 Water pollution: \$0.00 Nature & landscape: \$0.03 Urban separation: \$0.03	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality - Rural Light Commercial	GHG emission: \$0.03 Water pollution: \$0.00 Nature & landscape: \$0.00 Upstream & downstream costs: \$0.08	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42
Road freight externality – Rural Rigid Trucks	Air pollution: \$0.00 GHG emission: \$0.04 Noise: \$0.00 Water pollution: \$0.01	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
	Nature & landscape: \$0.01 Upstream & downstream costs: \$0.16		
Road freight externality – Rural Articulated Trucks	Air pollution: \$0.01 GHG emission: \$0.16 Noise: \$0.01 Water pollution: \$0.04 Nature & landscape: \$0.12	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42

Rail access safety benefits

Road safety benefits arise from reduced crashes on the road network. Reducing the amount of VKTs or transporting more freight through rural as opposed to urban areas will result in road safety benefits.

The general formula is: Vehicle Kilometres Travelled (by road) x Accident Costs.

These can be calculated as follows:

Equation 10: Rail access safety benefits

$$\text{Last mile access safety benefits}^t = \sum_V \sum_{ij} \sum_L (VKT_{ij}^{B,V,L,t} - VKT_{ij}^{P,V,L,t}) \times \text{safety}^L$$

Where:

- $VKT_{ij}^{X,V,L,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in location L (U = urban and R = rural), in year t .
- safety^L is the weighted average safety cost for road in location L (U = urban and R = rural).

Table 53: Key parameters used in rail access safety benefits calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Freight road safety - urban	\$0.08	\$FY22/VKT	Transport for NSW: Economic Parameter Values, Table 27
Freight road safety - rural	\$0.04	\$FY22/VKT	EY analysis based on Transport for NSW: Economic Parameter Values, Table 27, 30 & 31

Road benefits

Road benefits for the Proposal. The following treats the road network as parallel infrastructure from which freight is diverted as a result of the initiative.

Vehicle operating costs

The general formula is: Vehicle Kilometres Travelled (by road) x Operating Costs.

Vehicle operating cost savings can be calculated as follows:

Equation 11: Vehicle Operating Cost savings

$$\text{Vehicle operating cost saving}^t = \sum_V \sum_{ij} (VKT_{ij}^{B,V,t} - VKT_{ij}^{P,V,t}) \times (VOC_{ij}^{Re} - VOC_{ij}^{Pe})$$

Where:

- $VKT_{ij}^{X,V,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in year t .
 - $VKT_{ij}^{X,V,t} = \text{tonnes}_{ij}^{X,V,t} \times \text{dist}_{ij}^{X,V} \times 2 / \text{capacity}_{ij}^{X,V}$.
 - $\text{tonnes}_{ij}^{X,V,t}$ is the total freight tonnes transported by road from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
 - $\text{dist}_{ij}^{X,V}$ is the one-way road distance travelled per vehicle in kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
 - $\text{capacity}_{ij}^{X,V}$ is the average net vehicle capacity weighted by vehicle type from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .
- VOC_{ij}^{Xe} is the VOC per kilometre by Xe (Re = resource VOC and Pe = perceived VOC).

Table 54: Key parameters used in vehicle operating costs calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Resource VOC	Parkes to Sydney: \$1.68 Parkes to Brisbane: \$1.77 Parkes to Melbourne: \$1.77 Newcastle to Parkes: \$1.71	\$FY22/km	EY analysis of TfNSW parameters
Perceived VOC	Parkes to Sydney: \$1.82 Parkes to Brisbane: \$1.87 Parkes to Melbourne: \$1.87 Newcastle to Parkes: \$1.84	\$FY22/km	EY analysis of TfNSW parameters

Road damage cost savings

Cost savings from reduction in damage to road infrastructure.

The general formula is: Vehicle Kilometres Travelled (by road) x Cost of Road Damage.

These can be calculated as follows:

Equation 12: Road damage cost savings

$$\text{Road damage cost savings}^t = \sum_V \sum_{ij} (VKT_{ij}^{B,V,t} - VKT_{ij}^{P,V,t}) \times \sum_x (DC^x \times \%^x)$$

Where:

- $VKT_{ij}^{X,V,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project case), by freight type V , in year t .
- DC^x is the cost of road damage per kilometre for vehicle type x .
- $\%^x$ is the proportion of freight travelling by vehicle type x .

Table 55: Key parameters used in road damage cost savings

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Cost of road damage	Light commercial: \$0.05 Light rigid: \$0.05 Medium rigid: \$0.11 Heavy rigid: \$0.16 4 Axle: \$0.16 5 Axle: \$0.18 6 Axle: \$0.21 B-Doubles: \$0.27 B-Triples / Road trains: \$0.38	\$FY22 / VKT	Transport for NSW (2019), Economic Parameter Values, Table 50

Road environmental impacts

Road users also generate externalities on third parties and the community. Environmental impacts per VKT can be calculated using TfNSW parameters. Externalities usually captured include:

- Air pollution
- Greenhouse gas emissions.
- Noise and water pollution.
- Nature and landscape.
- Urban separation.
- Upstream and downstream costs.

The general formula is: Vehicle Kilometres Travelled (by road) x Externality Costs.

These can be calculated as follows:

Equation 13: Road environmental impact cost savings

$$\text{Road environmental impacts}^t = \sum_V \sum_{ij} \sum_L (VKT_{ij}^{B,V,L,t} \times \text{road ext}^{B,L}) - (VKT_{ij}^{P,V,L,t} \times \text{road ext}^{P,L})$$

Where:

- $VKT_{ij}^{X,V,L,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project Case), by freight type V , in location L (U = urban and R = rural), in year t .
 - $VKT_{ij}^{X,V,t} = \text{tonnes}_{ij}^{X,V,t} \times \text{dist}_{ij}^{X,V} \times 2 / \text{capacity}_{ij}^{X,V}$.
 - $\text{tonnes}_{ij}^{X,V,t}$ is the total freight tonnes transported by road from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), by freight type V , and in year t .
 - $\text{dist}_{ij}^{X,V}$ is the one-way road distance travelled per vehicle in kilometres from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type V .

- $capacity_{ij}^{X,V}$ is the average net vehicle capacity weighted by vehicle type from (Origin) i to (Destination) j in scenario X (B = Base Case, P = Project Case), and by freight type.
- $road\ ext^{X,L}$ is the total externality unit costs for road freight weighted by vehicle type in scenario X (B = Base Case and P = Project Case), in location L (U = urban and R = rural).

Table 56: Key parameters used in road environmental impact cost savings calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Road freight externality – Urban Light Commercial	Air pollution: \$0.08 GHG emission: \$0.03 Noise: \$0.01 Water pollution: \$0.01 Nature & landscape: \$0.01 Urban separation: \$0.01 Upstream & downstream costs: \$0.08	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality – Urban Rigid Trucks	Air pollution: \$0.18 GHG emission: \$0.04 Noise: \$0.03 Water pollution: \$0.03 Nature & landscape: \$0.00 Urban separation: \$0.02 Upstream & downstream costs: \$0.16	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality – Urban Articulated Trucks	Air pollution: \$0.71 GHG emission: \$0.01 Noise: \$0.05 Water pollution: \$0.00 Nature & landscape: \$0.03 Urban separation: \$0.03	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 41
Road freight externality - Rural Light Commercial	GHG emission: \$0.03 Water pollution: \$0.00 Nature & landscape: \$0.00 Upstream & downstream costs: \$0.08	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42

Road freight externality – Rural Rigid Trucks	Air pollution: \$0.00 GHG emission: \$0.04 Noise: \$0.00 Water pollution: \$0.01 Nature & landscape: \$0.01 Upstream & downstream costs: \$0.16	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42
Road freight externality – Rural Articulated Trucks	Air pollution: \$0.01 GHG emission: \$0.16 Noise: \$0.01 Water pollution: \$0.04 Nature & landscape: \$0.12	\$FY22/VKT	Transport for NSW (2019), Economic Parameter Values, Table 42

Road safety benefits

Road safety benefits arise from reduced crashes on the road network. Reducing the amount of VKT's or transporting more freight through rural as opposed to urban areas will result in road safety benefits.

The general formula is: Vehicle Kilometres Travelled (by road) x Accident Costs.

These can be calculated as follows:

Equation 14: Road safety benefits

$$\text{Road safety benefits}^t = \sum_V \sum_{ij} \sum_L (VKT_{ij}^{B,V,L,t} - VKT_{ij}^{P,V,L,t}) \times \text{safety}^L$$

Where:

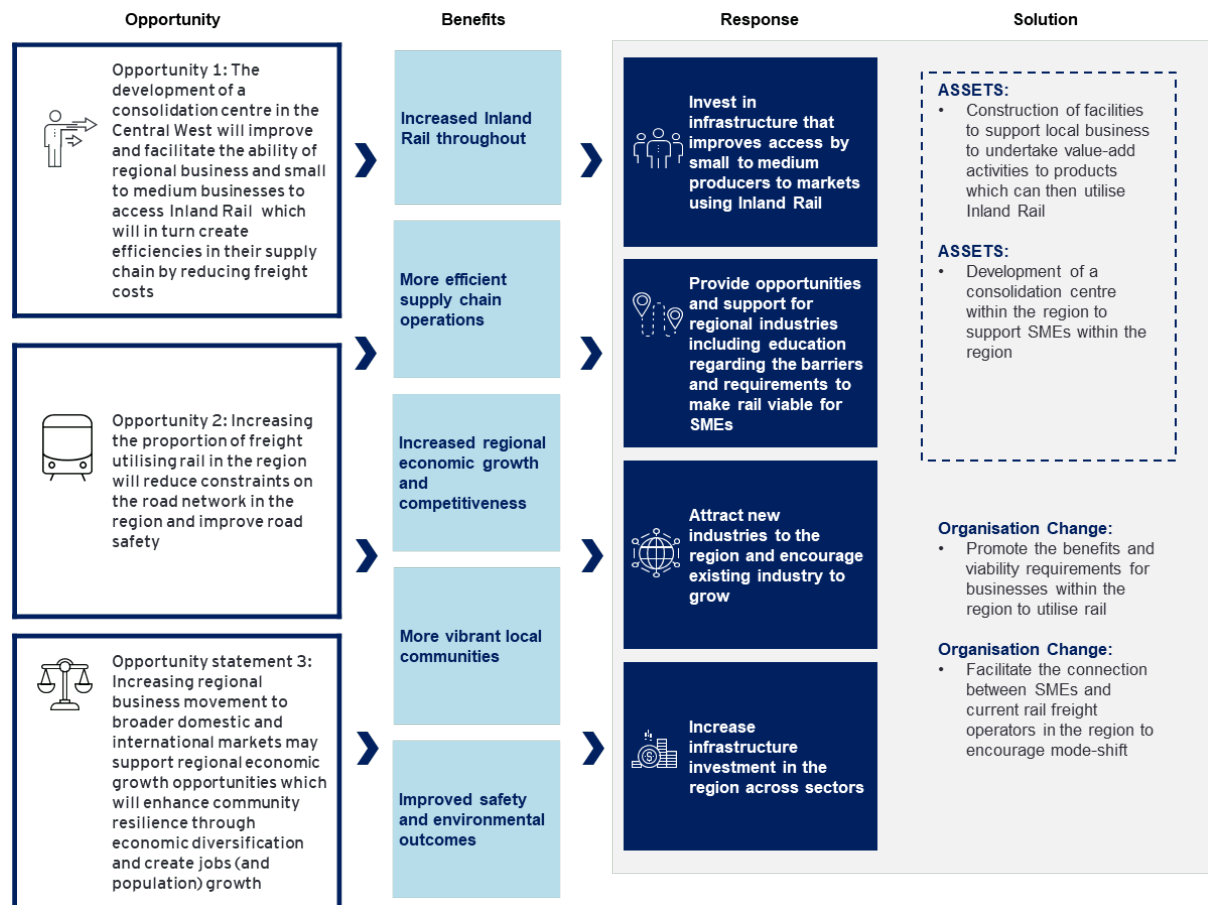
- $VKT_{ij}^{X,V,L,t}$ is the vehicle kilometres travelled from (Origin) i to (Destination) j in scenario X (B = Base Case and P = Project Case), by freight type V , in location L (U = urban and R = rural), in year t .
- safety^L is the weighted average safety cost for road in location L (U = urban and R = rural).

Table 57: Key parameters used in road safety benefits calculation

ASSUMPTION DETAIL	VALUE	UNIT	SOURCE
Freight road safety - urban	\$0.08	\$FY22/VKT	Transport for NSW: Economic Parameter Values, Table 27
Freight road safety - rural	\$0.04	\$FY22/VKT	EY analysis based on Transport for NSW: Economic Parameter Values, Table 27, 30 & 31

















Appendix G Additional Costing Information

Appendix H Investment Logic Map



Appendix I Key Activities at each Gate

Figure 33 Key activities at each Gate

Gate	 1. Proposal details	 2. Problem definition	 3. Strategic fit	 4. Stakeholders	 5. Options	 6. Demand	 7. Costs	 8. Benefits
2	Discuss and confirm the Proposal scope and Proposal details through discussions with the Department, the Proponents and other key stakeholders.	Facilitate a virtual ILM Workshop ⁵⁴ with key stakeholders to clearly identify challenges, benefits, strategic responses and solutions based on available evidence and data.	Assess the alignment of the Proposal with CLIP principles and relevant strategies and plans. Assess the strategic fit from a demand, operational and technical perspective.	Assess the level of 3 rd party support for the Proposal (financial and non-financial). Review the stakeholder landscape and identify the interest groups and the Proposal impacts.	Undertake an Options Assessment Workshop and explore the three identified options, identifying further Proposal or strategic options that should be assessed.	Initial assessment of low/medium/high demand (including road and rail split) and potential impacts of the Proposal on demand.	Prepare and assess high-level capital and whole of life cost estimates for each of the options under consideration.	Preliminarily assess the Proposal option's benefits, including the operating, land use, transport and non-traditional benefits. Examine the reliability of those estimates.
3	Not required.	Not required.	Not required.	Build on Gate 2 with further analysis required to assess deliverability of the Proposal.	Not required.	Analysis of current and future network demand including multiplier impacts and network enabling effects.	Build on the Gate 2 process to inform the economic and financial assessment. For costs, prepare P50 capital and whole of life cost estimates for each of the options under consideration.	
4	Not required.	Not required.	Not required.	Not required.	Not required.	Build on the Gate 3 submission to update the CBA for the preferred option.		
Gate	 9. Cost Benefit Analysis	 10. Funding and financing	 11. Regional economic impact ⁵⁵	 12. Regulatory requirements	 13. Environmental, heritage / planning	 14. Property strategy	 15. Risk management	 16. Governance, and other
2	Not required.	Identify sources of third-party funding or in-kind support.	Not required.	Identify the potential environmental, planning or other regulatory requirements that the Proposal may trigger.	Provide if available. Not required for evaluation.	Provide if available. Not required for evaluation.	Provide if available. Not required for evaluation.	Provide if available. Not required for evaluation.

⁵⁴ This has been indicatively proposed but can be discussed and agreed with the Department before progressing to Gate 2

⁵⁵ The requirements of Section 11.0 Regional Economic Impact will be considered following the Gate 2 stage including the level of quantitative or CGE analysis that may be required.

WORK IN PROGRESS DRAFT

3	Undertake a rapid CBA to assess the economic merits of the Proposal.	Prepare a detailed financial viability analysis including sources of project financing and project funding options. Undertake sensitivity analysis of financial viability results.	Identify and qualitatively discuss the expected qualitative regional economic impacts to the region.	Build on the Gate 2 submission to evaluate the ease of delivery.	Identify the environmental, heritage, and planning issues that have been identified, and what assessments have been undertaken. Detail the Proposal's expected environmental, heritage and planning approval pathway, including timelines	Identify the property transactions expected to be required. Prepare a property strategy regarding transactions and tenure arrangements, including timeframes.	Identify and assess risks and document them in a risk register and Risk Management Plan.	Document governance arrangements and prepare a post implementation plan that supports ongoing monitoring and review.
4	Update the Rapid CBA of the preferred option, and assess the wider economic benefits (if required).	Required for evaluation of the Proposal's financial viability. Consider co-funding opportunities and other potential revenue that could be generated.	Undertake detailed quantitative CGE modelling ¹⁰ to assess the Proposal's economic impact on Australia (if required).	No additional information required. Note amendments based on new information if applicable.	No additional information required. Note amendments based on new information if applicable.	Build on the Gate 3 submission to evaluate the ease of delivery.	Build on the Gate 3 submission to evaluate the ease of delivery.	Build on the Gate 3 submission to evaluate performance monitoring measures.

Appendix J SNC Options Report

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