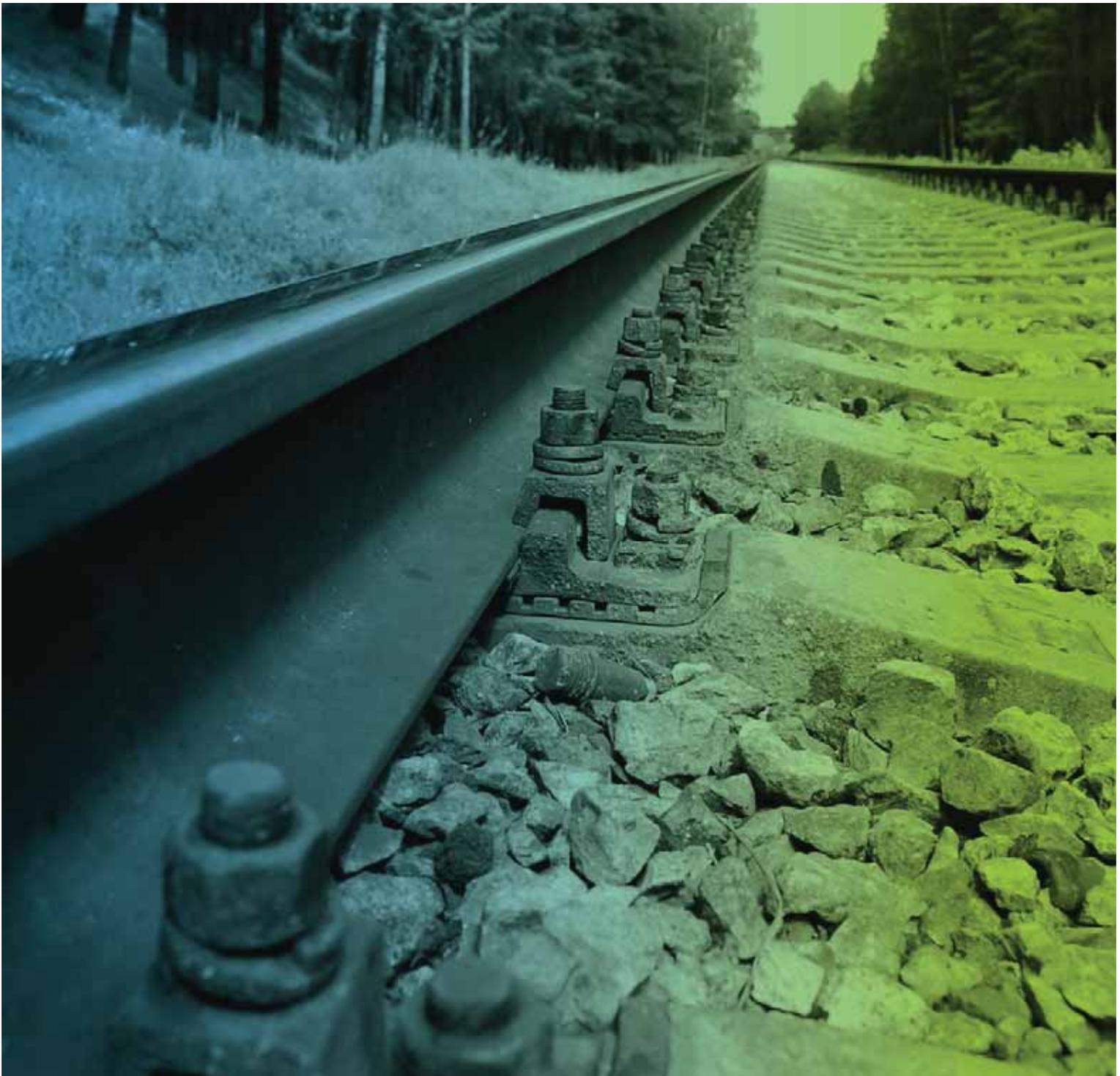


# Final Assessment Report

Southern Freight Rail Corridor Study



# Final Assessment Report

Southern Freight Rail Corridor Study

Prepared for

Department of Transport and Main Roads

Prepared by

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## Executive Summary

In mid 2007, the Department of Transport and Main Roads (TMR), (formerly Queensland Transport (QT)) initiated the *Southern Freight Rail Corridor (SFRC) Study*. This planning study seeks to identify a preferred rail connection between the existing narrow gauge western rail line near Rosewood and the existing interstate standard gauge rail corridor (SGR) near Kagaru, such that the corridor can be reserved for future construction and operation of a railway line (construction is not expected to be prior to 2031).

The SFRC is proposed as a "freight only" railway and would form a key link from the proposed Melbourne to Brisbane Inland Railway to the SGR north of Beaudesert, providing an alternative route to existing freight centres at Acacia Ridge and the Brisbane Multimodal Terminal (Port of Brisbane). The SFRC will also provide dual gauge rail access to proposed logistics hubs and industrial developments in the Ebenezer and Bromelton areas.

TMR are seeking designation of the SFRC as community infrastructure in accordance with chapter 5 of the *Sustainable Planning Act 2009 (SP Act)*. Section 207 of the SP Act specifies that before designating land, the Minister must be satisfied that (for the development, the subject of the proposed designation):

- a) adequate environmental assessment has been carried out; and
- b) in carrying out environmental assessment under paragraph (a), there was adequate public consultation; and
- c) adequate account has been taken of issues raised during the public consultation.

Section 207 (3)(a) of the SP Act states that one way of meeting the assessment requirements outlined above is to adopt the assessment process outlined in the *Guidelines about Environmental Assessment and Public Consultation Procedures for Designating Land for Community Infrastructure* (the CID guidelines).

The environmental assessment for the SFRC study has been undertaken in accordance with the CID guidelines, and is future-focused, with the acknowledgement that the detailed design of the SFRC will be undertaken at a later stage. The environmental assessment undertaken as part of the SFRC study is adequate for the purposes of reserving the corridor; however a further environmental assessment will be required for the project during the detailed design phase. It will be at this stage that the specific impacts of the SFRC upon the surrounding environment will be identified, as they will be based on detailed design elements, and will incorporate up-to-date existing environmental characteristics.

This Final Assessment Report has been prepared in accordance with step 5 of the CID process, and has been prepared to provide the Minister with the information necessary to make a decision with respect to designation of the corridor as community infrastructure. According to the CID guidelines, this Final Assessment Report must incorporate the following requirements listed in the table below.

**Table: Requirements for the Final Assessment Report, and SFRC-specific responses to these requirements**

Requirement	Response
A summary of any changes to the proposal arising from the consultation	No changes have resulted to the SFRC from the Revised Assessment Report submission period. Further detail relating to recommended mitigation measures have been provided to explain possible strategies for reducing some potential impacts.
A copy of all submissions received in step 4	Provided in Appendix B of this report.
A summary of all submissions in step 4 and the account taken of issues raised	Provided in Appendix C of this report.
A statement of the expressed views of each relevant public sector entity and each relevant Local Government	Provided in Appendix D of this report.
A statement of any matters proposed to be included in the designation under the SP Act, section 202	It is recommended that the designation be for <i>the construction and operation of the Southern Freight Rail Corridor, in accordance with the preliminary design and the impact mitigation measures included in the Revised Assessment Report, and the Key Project Commitments outlined in section 6.0 of this Final Assessment Report.</i>

This report provides information about the physical description of the SFRC (including detailed maps contained within Appendix A), a broad legislative framework for the project, a summary of potential environmental impacts, and a summary of issues raised by submitters throughout the CID process.

It is recommended that the key project commitments identified in this report form matters for inclusion in the designation of the SFRC as community infrastructure. This will help to ensure that the most significant potential impacts of the SFRC are managed appropriately through the remaining stages of the project.

Broadly speaking, the SFRC is an important project for the western corridor of South-East Queensland (SEQ), the wider SEQ region, Queensland and Australia. When coupled with the future Inland Railway, the project provides benefits within an economic, freight transportation, social and land use planning context. The SFRC will ensure that heavy freight rail does not congest the Brisbane metropolitan network, and will provide logistics operators a competitive alternative to road transportation for interstate freight movements.

The SFRC study has shown that the SFRC has the potential to cause a number of impacts upon the local environment. Through the use of appropriate mitigation strategies, and through the key project commitments outlined in this report, it is expected that the potential impacts of the SFRC can be effectively managed. Fundamental to the effective management of potential impacts will be the investigations undertaken at the business case and detailed design phases of the project.

The information provided in this report and in the Revised Assessment Report has been compiled to meet the requirements of the community infrastructure designation process under the SP Act. It is contended that this information provides the Minister with certainty that at this planning stage, a) adequate environmental assessment has been undertaken; and b) adequate account has been taken of issues raised by submitters, to enable designation of the SFRC alignment as community infrastructure to occur. To this end, the SFRC study has been undertaken in accordance with – and in many cases, beyond – the requirements for CID projects outlined in the CID guidelines.

## 1.0 Introduction

### 1.1 Introduction and Background

In mid 2007, the Department of Transport and Main Roads (TMR), (formerly Queensland Transport (QT)) initiated the *Southern Freight Rail Corridor (SFRC) Study*. This planning study seeks to identify a preferred rail connection between the existing narrow gauge Western Rail Line near Rosewood and the existing interstate standard gauge rail corridor (SGR) near Kagaru, such that the corridor can be reserved for future construction and operation of a railway line (construction is not expected to be prior to 2031). Investigations to provide this connection have generally been undertaken within a 55km-long and 2km-wide corridor of interest which was developed from previous preliminary studies undertaken in 2005. Due to constraints in some areas, these investigations have extended slightly beyond the original corridor of interest, most notably in Ebenezer and at the eastern end of the corridor near Kagaru.



Figure 1: The SFRC alignment (in yellow) and the corridor of interest which formed the specific study area for the SFRC

The SFRC is proposed as a "freight only" railway and would form a key link from the proposed Melbourne to Brisbane Inland Railway to the SGR north of Beaudesert, providing an alternative route to existing freight centres at Acacia Ridge and the Brisbane Multimodal Terminal (Port of Brisbane). The SFRC will also provide dual gauge rail access to proposed logistics hubs and industrial developments in the Ebenezer and Bromelton areas.

Initially the railway would be designed as a single track with passing loop/s, to contemporary freight railway design standards, including allowance for the double-stacking of containerised freight. Increasing freight volumes may justify the eventual duplication of the alignment. The SFRC alignment and the SFRC plans are shown in Appendix A.

In October 2008, a draft assessment report was released for the SFRC Study. The draft assessment report identified a preferred alignment through the study area, and provided an analysis of potential environmental impacts and mitigation measures to minimise or prevent these impacts. Information received from stakeholders

and government agencies during the submission period for the draft assessment report prompted updates to information contained within the draft assessment report.

Released in March 2010, the Revised Assessment Report contained these updates, including:

- a revision to the original alignment in the Ebenezer area;
- justifications for the changes to the alignment that was originally presented in the draft assessment report ;
- a submissions report which lists categorised submissions to the draft assessment report and contains responses from the study team to these submissions; and
- updates to the technical papers, based on the submissions received and investigations into the potential environmental impacts of the revised alignment.

This final assessment report has been prepared following the submission period for the Revised Assessment Report (RAR) (AECOM & TMR, 2010), and to fulfil the requirements of a Final Assessment Report, in accordance with step 5 of the Community Infrastructure Designation (CID) process under section 207(3)(a) of the *Sustainable Planning Act 2009* (SP Act) (see Figure 2).

This report concisely summarises the most pertinent details and issues relating to the SFRC study and its potential environmental, social and economic impacts. The purpose of this report is to provide the Minister with enough information to make a determination on community infrastructure designation for the project, based on the adequacy of the environmental assessment and the account taken of issues raised by stakeholders, as per step 6 of the CID process. Where appropriate, this report refers to the RAR for further detail.

## Flowchart summarising steps for environmental assessment and consultation



Figure 2: The community infrastructure designation process, and its application to the SFRC study

## 1.2 Key Project Considerations

The Southern Freight Rail Corridor Study has been informed by a number of key assumptions and exclusions relating to project timing, relationship to other projects and scope of investigations. This section outlines the assumptions made in relation to project timing, and also references the appropriate sections of the Revised Assessment Report where all other assumptions and exclusions are identified.

### 1.2.1 Timing

The purpose of this planning study is for the forward identification of a future rail corridor (including rail alignment, preliminary earthworks footprint and CID Area), such that the land required for a future railway line can be designated as community infrastructure under the SP Act. The resultant designation will effectively ensure that any future development does not encroach on the land within the future rail corridor, thereby enabling the railway's construction at some time in the future. In this respect, it should be noted that the broader study area is a dynamic environment, and that significant land use changes are likely to occur between now and the time that the SFRC is to be constructed. Anticipated future land use includes the development of Purga and Ebenezer<sup>1</sup> for regionally-significant industry, Amberley Air Base and Aerospace Park, Ripley Valley residential area, Swanbank Enterprise Park, and Bromelton State Development Area. These and other future developments are likely to place significant development pressure on other land within the study area.

With the understanding that the SFRC is a key part of the Toowoomba to Brisbane link of the Inland Railway project, it is not known at this point when the detailed design, construction and operation phases of the SFRC would occur. However, this current study provides adequate rigour to ensure the forward identification and protection of the SFRC, with the understanding that the detailed design, construction and operation phases will occur at some time in the future.

Given the long-term strategic planning nature of this study, it is important to note that further detailed investigations into various environmental elements will be required at a time when there is a firm commitment to construct the SFRC. These investigations will ideally complement and inform the detailed design phase of the project. Such an approach will guarantee that appropriate and current information on the environmental values of the study area is obtained at a time closer to the construction of the railway line, and that any changes to land use patterns and environmental elements between now and construction are included in the environmental assessment process.

### 1.2.2 Assumptions

The assumptions which form the basis of much of the work undertaken for this Final Assessment Report are outlined in section 1.1.2 of the RAR.

### 1.2.3 Exclusions

The SFRC is closely associated with other railway projects (i.e. the Inland Rail) and also has implications for future intermodal freight terminal planning. In addition, there are various technical elements of the study where detailed investigations are recommended for the future detailed design phase. With respect to other rail studies, future planning investigations and scope of technical investigations, it is important to acknowledge those aspects which are outside the scope of this study. These exclusions are identified below, with respect to topic and a reference to the relevant section of the Revised Assessment Report in which they are described in further detail. They are:

- inland railway – Section 4.1.2;
- intermodal freight terminals – Section 4.1.3;
- stormwater drainage systems for construction and operation phases – Section 4.4.3;
- detailed design of the two sections of tunnel – Section 4.4.3;
- preliminary consideration only of interfaces between the SFRC and local roads – Section 4.4.3;
- preliminary consideration only of interfaces with major infrastructure such as Moonie-Brisbane Oil Pipeline and Powerlink transmission lines – Section 4.4.3; and
- access and stock movement/watering requirements of individual properties – Section 4.5.

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<sup>1</sup> The location of the SFRC alignment will be an important consideration for the master planning of the Ebenezer industrial area.

#### 1.2.4 Administrative details

The SFRC traverses land under the jurisdiction and interest of multiple Local and State Government Agencies. TMR is the lead agency for the Study, which has been managed through a Project Steering Committee (PSC), comprising TMR, Queensland Rail - Network Access Group (QR) and the Department of Infrastructure and Planning (DIP).

TMR are seeking a CID for the proposed rail corridor in accordance with Chapter 5 of the SP Act. Before designating land, the Minister must be satisfied that there has been adequate environmental assessment and public consultation, and that suitable account has been given to issues raised during public consultation. One way this requirement can be met is for the assessment of the proposed infrastructure to be carried out in accordance with the *Guidelines about Environmental Assessment and Public Consultation Procedures for Designating Land for Community Infrastructure* prepared under Section 760 of the SP Act. Further information regarding the CID process is provided in section 2 of the RAR, and section 1.5 of this report.

A body of State and Local Government representatives and other appropriate authorities have been involved in an Agency Reference Group (ARG) for the project, which has met at key points throughout the study. It was originally intended that a referral would be submitted to the Department of Environment, Water, Heritage and the Arts (DEWHA), in accordance with the provisions of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) during the CID process. However, discussions between the study team and DEWHA representatives following the release of the draft assessment report have led to the understanding that a referral is not required until the detailed design phase of the project.

To build and operate the rail link, the Chief Executive of TMR will, by written notice to the relevant Local Government and in the Gazette, indicate that the land is intended to be used for a railway, pursuant to Section 242 of the *Transport Infrastructure Act 1994* (TI Act). Section 258B of the TI Act allows the Director General of TMR to make guidelines which have the effect of placing the corridor on Integrated Development Assessment System (IDAS) mapping – which provides TMR with a referral trigger. Section 258 of the TI Act allows TMR – in its role as a referral agency – to assess the impacts of any development applications on “future railways”. In this way, the TI Act allows TMR to provide input into the assessment of future development which poses potential conflicts with the SFRC.

#### 1.2.5 Proponent

TMR, formerly QT, is the proponent of the SFRC Study.

### 1.3 Project objectives and scope

The objectives of the SFRC Study are to:

- identify the preferred freight-only rail corridor alignment from the existing narrow gauge Western Rail Line near Rosewood to the SGR near Kagaru, including identification of land required;
- prepare environmental reporting for the project in accordance with the Guidelines about Environmental Assessment and Public Consultation Procedures for Designating Land for Community Infrastructure, for the purposes of providing:
  - for interested parties, a basis for understanding the project, alternatives for the proposed project, the existing environment that it would affect, and in relation to other major social and engineering infrastructure coordination, the impacts that may occur and the measures to be taken to mitigate all adverse impacts, and possible legislative approvals and delivery mechanisms
  - for groups or persons with rights or interest in land, an indication of project impacts on that land including access and measures to mitigate identified adverse impacts
  - consideration of the economic, social and environmental aspects of the project in view of legislative and policy provisions
- undertake a sufficient level of design for the project to allow the identification of land required for the corridor, including an assessment of initial rail construction costs.

#### 1.3.1 Context of Environmental Assessment

The environmental assessment undertaken as part of the SFRC study has been designed to accord with the requirements of the CID Guidelines, and is future-focused – with the acknowledgement that the detailed design of the SFRC will be undertaken at a later stage. The environmental assessment is adequate at this stage for

reserving the corridor, however a further environmental assessment will be required for the project during the detailed design phase. It will be at this stage that the specific impacts of the SFRC upon the surrounding environment will be accurately identified, as they will be based on detailed design elements, and will incorporate up-to-date existing environmental characteristics.

## 1.4 Structure of Final Assessment Report

### 1.4.1 Report Requirements

According to the *Guidelines about Environmental Assessment and Public Consultation Procedures for Designating Land for Community Infrastructure* (the CID guidelines) this final assessment report, provided to the Minister, must incorporate the following requirements listed in Table 1.

**Table 1: Requirements for the Final Assessment Report, and SFRC-specific responses to these requirements.**

Requirement	Response
A summary of any changes to the proposal arising from the consultation	No changes have resulted to the SFRC from the Revised Assessment Report submission period. Further detail relating to recommended mitigation measures have been provided to explain possible strategies for reducing some potential impacts.
A copy of all submissions received in step 4	Provided in Appendix B of this report.
A summary of all submissions in step 4 and the account taken of issues raised	Provided in Appendix C of this report.
A statement of the expressed views of each relevant public sector entity and each relevant Local Government	Provided in Appendix D of this report.
A statement of any matters proposed to be included in the designation under the SP Act, section 202	It is recommended that the designation be for <i>the construction and operation of the Southern Freight Rail Corridor, in accordance with the preliminary design and the impact mitigation measures included in the Revised Assessment Report, and the Key Project Commitments outlined in section 6.0 of this Final Assessment Report.</i>

### 1.4.2 Report Structure

The structure of this Final Assessment Report is as follows:

- Section 1 – Introduction and Background;
- Section 2 – Project Description;
- Section 3 – Legislative Framework;
- Section 4 – Summary of Potential Environmental Impacts;
- Section 5 – Summary of Issues Raised and Account Taken;
- Section 6 – Key Project Commitments;
- Section 7 – Conclusion;
- Appendix A – SFRC Alignment and Plans;
- Appendix B – Submissions Received During Step 4 of the CID Process;
- Appendix C – Responses to Issues Raised in Submissions to the RAR; and
- Appendix D – Views of Each Relevant Public Sector Entity and Local Government.

## 1.5 Community Infrastructure Designation Process

### 1.5.1 CID Process

TMR are seeking to designate the SFRC as community infrastructure in accordance with Chapter 5 of the SP Act. CID provides for the forward identification of land for community infrastructure in order to facilitate the integration of land use and infrastructure planning, and the efficient and cost-effective provision of the infrastructure.

In accordance with section 201 of the SP Act, land may be designated for community infrastructure only if the designator is satisfied the community infrastructure will:

- a) facilitate the implementation of legislation and policies about environmental protection or ecological sustainability; or
- b) facilitate the efficient allocation of resources; or
- c) satisfy statutory requirements or budgetary commitments of the State or Local Government for the supply of community infrastructure; or
- d) satisfy the community's expectations for the efficient and timely supply of the infrastructure.

Furthermore, section 207 of the SP Act specifies that before designating land, the Minister must be satisfied that (for the development, the subject of the proposed designation):

- d) adequate environmental assessment has been carried out; and
- e) in carrying out environmental assessment under paragraph (a), there was adequate public consultation; and
- f) adequate account has been taken of issues raised during the public consultation.

Section 207 (3)(a) of the SP Act states that one way of meeting the assessment requirements outlined above is to adopt the assessment process outlined in the CID guidelines (DLGPSR, 2006), and shown in Figure 2.

The CID guidelines contain a checklist for identifying relevant matters to assess the environmental effects of a project. This is tabulated in Appendix A of the RAR.

It is important to note that since the inception of the study and prior to seeking CID, a range of community engagement activities were undertaken by the study team. These activities included one-on-one landowner briefings (for landowners within the original corridor of interest) and community information days (for the wider community) (refer to Chapter 5 of the RAR for more detail). ***These activities are additional to the minimum environmental assessment and consultation procedures set out in the CID guidelines***, and are described further in section 2.2 of the RAR.

### 1.5.2 Step 6 – Forwarding the Final Assessment Report to the Minister

According to the CID Guidelines, the final assessment report is forwarded to the Minister for consideration under the SP Act, section 207. If the Minister decides to designate, the SP Act, section 208 states what the Minister must do in relation to giving notice of the designation. Section 209 states that a notice is also to be given if the decision is not to proceed with a proposed designation.

If the Minister decides to proceed with the designation, the following is sent to each principal submitter – the summary of submissions in step 4, and the account taken of the issues raised. "Principal submitter" has the meaning given under the SP Act, Schedule 3, and is the person making a one-person submission, or the person identified as the principal submitter of a submission made by more than one person.

## 2.0 Project Description

This section of the Final Assessment Report provides a summary of the background to the SFRC, as well as key alignment engineering details. Further information relating to these aspects is contained within section 4 of the RAR.

### 2.1 Background

The SFRC is approximately 55km long, connecting the western railway line (south of Rosewood) with the interstate railway line at Kagaru. The SFRC crosses a number of waterways, including Western Creek, the Bremer River, Warrill, Purga, Sandy, Dugandan and Wild Pig Creeks. Bridge structures will be required for these waterway crossings. The SFRC also passes through the Flinders-Goolman Range, which is characterised by relatively steep elevations. Two tunnels (1050m and 200m respectively) will be required where the SFRC passes through the Flinders-Goolman Range. The SFRC alignment is described in greater detail in chapter 4 of the RAR. CID Plans detailing the SFRC alignment and CID area are included in Appendix A of this report.

It should be recognised that the level of detail provided in the project description reflects the preliminary level of alignment design that has been undertaken as part of the study. Where appropriate, suitable recommendations have been made through the Environmental Management Plan (EMP) (chapter 19 of the RAR) for impact mitigation measures required to be addressed during the detailed design phase.

The Southern Freight Rail Corridor was first identified as a concept with the release in 2005 of the *South East Queensland Regional Plan 2005-2026* (SEQRP) and subsequent *South East Queensland Infrastructure Plan and Program 2005-2026* (SEQIPP). The project was at that stage known as the Southern Infrastructure Corridor (SIC), with the corridor seen as potentially supporting a variety of infrastructure including, road, rail and utilities.

#### 2.1.1 Previous Studies

Previous studies relevant to the SFRC Study, including the Southern Infrastructure Corridor Study and the Purga Site Investigation Study are described in section 4.1.1 of the RAR. These studies provided the context for the SFRC Study, most notably through the identification of a base alignment from which the SFRC alignment has evolved.

#### 2.1.2 Inland Rail Study

The Inland Rail Study is described in section 4.1.2 of the RAR. Notably for the SFRC, rail freight travelling from south-western Queensland to Acacia Ridge and the Port of Brisbane currently travels via Toowoomba, Rosewood, Corinda and Yeerongpilly. Upgrade of the Western Line from Rosewood to Yeerongpilly to cater for standard gauge trains and double-stacked container freight is not considered feasible given the highly urbanised nature of the corridor, capacity constraints, conflicts with the passenger network and inadequate clearance for double-stacked container trains from existing electrification infrastructure and the numerous existing bridge crossings.

Upgrade of the alignment from Gowrie to Grandchester has been subject to previous study by Queensland Rail and Queensland Transport in 2003. The study produced a preferred alignment for the corridor which removed the significant existing constraints on vertical and horizontal geometry through curve easing and the use of substantial lengths of tunnel at both the Toowoomba and Little Liverpool Ranges.

The proposed alignment of the SFRC would tie in with the eastern extent of the proposed Gowrie to Grandchester alignment, completing the linkage between a future Inland Rail route to Toowoomba and the existing SGR. Future consideration would need to be given to required upgrades of the SGR between Bromelton and Acacia Ridge to allow for possible double-stacking (clearance) and the increase in anticipated freight volume (duplication/passing loops).

#### 2.1.3 Intermodal Freight Terminals

As a key connection between a future Inland Melbourne-Brisbane Railway and the SGR, the SFRC will play a potentially significant role in the determination of the preferred medium and long-term solutions for intermodal freight terminal (IFT) capacity in the region. In particular, a terminal option at Ebenezer would be highly contingent upon the Inland Rail and SFRC proceeding. Likewise, the relative attraction of a Bromelton terminal option would increase if the Inland Rail and SFRC were to proceed.

Passive allowance has been made in the alignment design for the SFRC (by way of vertical and horizontal gradients), for a future IFT west of the Cunningham Highway, and south of the Ipswich Motorsport Precinct at

Ebenezer. The proposed junction of the SFRC with the SGR is located immediately to the north of the suggested IFT location (south of Undullah Road) in the proposed Bromelton State Development Area (SDA) Draft Development Scheme.

Further detailed consideration of terminal layout and design at these two locations is beyond the scope of the current study and will be subject to further consideration in the future should either site be required. Further consideration of land use and planning issues at Ebenezer and Bromelton is provided in the RAR (Technical Paper 5).

#### **2.1.4 Alignment Development**

The "C3" alignment from the Southern Infrastructure Corridor Study (2005) was the starting point for the SFRC Study. This alignment evolved throughout the SFRC Study, based on a number of factors as described in sections 4.2 and 4.3 in the RAR, to the point where the present (final) alignment has been determined through a rigorous and iterative process.

## **2.2 Alignment Engineering**

The design criteria to be adopted for the alignment are dictated by the future freight traffic likely to use the facility. Accordingly for the purposes of determining the appropriate alignment design standards the following assumptions were made:

- the SFRC will form part of the proposed Melbourne-Brisbane Inland Railway;
- the SFRC will be a dual gauge facility (narrow and standard gauges) and the existing SGR between Bromelton and Acacia Ridge will be upgraded to dual gauge at some future point;
- as passenger operations on the existing electrified urban network increase, the opportunity for narrow gauge freight from south-western Queensland to use existing routes will decrease and the SFRC will increasingly become the primary route to Acacia Ridge and the Port of Brisbane; and
- ongoing growth in coal exports from the Port of Brisbane to an upper limit of 12 to 15 million tonnes per year will lead to the SFRC being an increasingly attractive option for narrow gauge coal freight.

As such, it is anticipated that the SFRC will support the following services:

- standard gauge intermodal freight traffic (potentially double-stacked), travelling from Melbourne and potentially Perth and Adelaide via the proposed Inland Railway to Acacia Ridge, the Brisbane Multimodal Terminal (BMT) and possible future terminals at Ebenezer and/or Bromelton;
- standard gauge freight traffic from Sydney to a possible future terminal at Ebenezer.

The SFRC may also become an alternative route for the following services:

- general purpose narrow gauge freight from south-western Queensland to Brisbane;
- narrow gauge bulk grain, containerised cotton and agricultural products from south-western Queensland to the Port of Brisbane;
- narrow gauge bulk petroleum products from Brisbane to the south-west; and
- narrow gauge coal freight from western Queensland and Rosewood/Jeebropilly to the Port of Brisbane.

#### **2.2.1 Adopted design criteria**

Whilst QR may not necessarily be the "rail owner" or "rail manager" in the event that the SFRC is constructed, for the purposes of this study, QR design and construction standards have been adopted where appropriate.

The determining design criteria adopted for the Study are based on the current Code of Practice for the Defined Interstate Rail Network as adopted for the North-South Rail Corridor Study (2005). Key design criteria are listed in Table 2 and Table 3.

**Table 2 Adopted design criteria**

Criteria	Adopted Standard
Desirable <i>maximum</i> speed	115 km/h
Maximum axle load	30 tonnes
Minimum vertical clearance above top of rail	7.4 metres
Horizontal geometry radius for 115km/h	1,200 metres
Maximum desirable compensated gradient	1%
Maximum allowable compensated gradient	1.50%
Passing loops/train length	Up to 2km
Rail specification	60 kg/m
Sleepers	Concrete
Ballast	300mm below sleeper

**Table 3 Maximum train speeds and corresponding minimum curve radii**

Maximum Train Speed (km/h)	Minimum Radius (m)
80	540
100	840
115	1,200

### 2.2.2 Railway Formation

It is intended that the SFRC would initially be constructed as a single track railway with suitably located passing loops. For planning purposes this study has adopted a dual track earthworks formation for the entire length of the alignment. This will ensure that the corridor is suitable for future upgrading to two tracks and also provides flexibility when locating passing loops, when operating as a single track. The location of any passing loops would be determined during detailed design phase when there exists greater certainty regarding train consistency, length and frequency.

The standard corridor cross section adopted for the study, including service roads, is shown in Plans SK038A & SK039A in Appendix B of the RAR. It should be noted that the actual final corridor width may vary following detailed design, as may the location of realigned local roads, fencing and acoustic treatments, stock crossings and drainage infrastructure. For the purposes of the current study a conservatively wide corridor has been adopted to ensure that the corridor adopted for CID retains a degree of flexibility for incorporation of design changes during detailed design (the earthworks footprint may increase or decrease in some areas).

Significant embankments and cuttings will be required along the length of the alignment. Further refinement of these works will be required once detailed geotechnical investigations of the alignment are completed during the detailed design phase. For the purposes of the study a nominal slope of 1V:2H has been adopted for all embankments and cuttings with stepping included at every 7.5m for large slopes. Where the geotechnical characteristics of the underlying material permit, steeper slopes may be achievable, thus reducing the overall width of the alignment footprint.

The alignment development process has targeted a nominal balance of earthworks across sections of the alignment in order to minimise any excess/shortage of material. In locations where this has been difficult to achieve, precedence has been given to maintaining safe geometric design standards.

### 2.2.3 Other considerations

A number of other characteristics of the SFRC preliminary design are noteworthy. These are listed below, and discussed in further detail in sections 4.4.3 and 4.4.4 in the RAR:

- **Flooding and Drainage** – The major water courses within the study area including the Bremer River, Western, Warrill, Purga, Woolaman and Wild Pig Creeks and Teviot Brook will require bridging. At these crossings the bridge levels have been set to allow a flood with a corresponding probability of 1 in 100 years to pass under the soffit of the structure. Where possible, effort has been made to reduce the length of bridges required through the selection of crossing points in locations where the floodplain is relatively narrow. The rail corridor will also intercept a number of ephemeral creeks and drainage lines which generally flow into one of the higher order streams mentioned above. A preliminary assessment of the types of drainage structures required for the project to provide 1 in 100 year flood immunity to the top of rail formation has been completed as part of the preliminary design phase. Different sizes and numbers of culverts will be used to accommodate the smaller drainage lines along the alignment. As the project is still within the planning phase, detailed information is not available on stormwater drainage systems for construction and operation phases, although section 19 of the RAR lists provisions to address stormwater and sediment and erosion control.
- **Bridges** – All bridges are to be designed in accordance with the Australian Bridge Design Code and QR Standards. At major creek and river crossings allowance should be incorporated for stock and vehicles to pass beneath the bridge in order to maintain access to fragmented portions of properties.
- **Tunnels** – Due to severe terrain, two sections of tunnel (lengths of 1050m and 200m) have been incorporated into the alignment in the Washpool/Woolooman area. Design of these features will require considerable refinement in response to detailed geotechnical investigations during later design phases.
- **Level crossings** – The preferred alignment interfaces with existing roads throughout the study area. A basic planning criterion adopted for the SFRC is that level crossings (road/rail) are to be avoided where possible. Accordingly, grade separation of all major road crossings has been assumed for planning purposes. In some instances where a road serves a limited number of properties it may be more suitable to provide a realignment of an existing local road or a new road to enable access via an alternative route. At this stage, no investigation of these interfaces has been undertaken, as it is likely that the roles and relative importance of these roads will change between now and the detailed design phase of the project. As such, more detailed analysis of the interfaces between the preferred alignment and local roads will be undertaken during the detailed design phase, when more informed solutions are likely to be identified. At this time, options for maintaining local access are included in the description of the preferred alignment. Accordingly, the alignment has been designed to ensure that no level crossings are required for access from private property to public roads. Where an individual property is fragmented or isolated by the alignment, an at-grade, single user occupational crossing has been assumed. These would be designed in accordance with QR standards.
- **Services** – A preliminary inventory and assessment of services impacts has been undertaken as part of the alignment design process. Where possible, conflicts with major infrastructure such as the Moonie Oil pipeline, major water mains and Powerlink high voltage powerlines has been avoided through adjustment of the alignment. Where not possible, the conflict has been identified and suitable treatment proposed (refer to section 4.4.3 of the RAR).
- **Speed** – Whilst not achievable across the entire length of the SFRC due to topographic constraints, particularly in the Washpool area, 115km/h is a suitable maximum speed for the SFRC. It should be noted that considerably slower speed limits will be required for turnouts onto the SGR and existing Western Railway and also in the vicinity of any future IFT at Ebenezer and/or Bromelton.
- **Train length** – Should new terminals be developed in Melbourne and Brisbane/SEQ capable of handling trains up to 2,400m it would be conceivable that this train length could be required on the SFRC. The Melbourne-Brisbane Inland Rail Alignment Study used a maximum length of 1,800m, due to a need for interoperability between the existing network and the inland railway. For the purposes of the SFRC design criteria, a train length of up to 2,000m has been adopted.
- **Corridor capacity** – Preliminary corridor operations modelling suggests that a single track alignment with passing loops would be capable of supporting in excess of 30 trains per day before double-tracking would be required. Assuming that the key determinant of train volumes on the alignment at the time of opening would be the capacity of existing and proposed terminals at Acacia Ridge, Bromelton and Ebenezer it is not expected that any more than 10 trains per day (5 in each direction) would use the SFRC in the short to medium term, depending on when the line is actually commissioned. This number would increase towards the capacity of the corridor over time as demand increases on the Melbourne - Brisbane corridor and other freight currently transported to Acacia Ridge and the Port of Brisbane on the narrow gauge network is switched to the SFRC.

- **Passing loops** – Initially, up to four passing loops may be required for initial rail operations before eventual double-tracking is pursued. Passing loops are expected at each end of the SFRC and in two intermediate locations at approximately 15-20km spacing. The final position of proposed tunnels and terminals would influence the location of proposed passing loops. Suitable allowance has been made for passing loops within the proposed corridor width shown on the CID plans in Appendix B.

## 3.0 Legislative Framework

The SFRC has the potential to trigger a variety of legislation, conventions and policy which operate at different levels of jurisdiction. These include:

- legislation, conventions and agreements which operate at a Commonwealth level and have particular relevance to the SFRC;
- state legislation and policies which will be triggered (or have the potential to be triggered) by the SFRC;
- local government policy documents and planning instruments.

A discussion of key Commonwealth and State legislation and policy is provided below. A more detailed discussion is provided in section 3 of the RAR.

### 3.1 Relationship to Government Policy

Government policy at a range of levels is potentially implicated by the SFRC Study. This policy includes:

- Federal –the National Land Transport (AusLink) Network and the Inland Rail study (discussed in sections 3.1.1 and 4.1.2 of the RAR);
- State –the *South East Queensland Regional Plan 2009-2031* (SEQRP) and *South East Queensland Infrastructure Plan and Program 2009-2026* (SEQIPP) (discussed in section 3.1.2 of the RAR);
- Local –local government planning schemes, as well as strategy documents including:
  - Ipswich 2020
  - Ipswich City Council Nature Conservation Strategy 2008
  - Boonah Rural Futures
  - Beaudesert Community Plan
  - Beaudesert Draft Planning Vision.

### 3.2 Legislation

#### 3.2.1 Commonwealth

##### ***Environment Protection and Biodiversity Conservation Act 1999***

The *Environment Protection and Biodiversity and Conservation Act 1999* (EPBC Act) establishes a process for environmental assessment and approval of proposed actions that are likely to have a significant impact on Matters of National Environmental Significance (MNES) or on Commonwealth land.

Consideration of the potential impact of the SFRC on a range of MNES is provided in the RAR (Technical Paper 2). This assessment relates primarily to listed threatened species and ecological communities and listed migratory species. The SFRC is unlikely to have any impact on World Heritage areas, places of National Heritage, Ramsar Wetlands and/or Commonwealth Marine areas and does not constitute a nuclear action.

The study team has held discussions with the Department of Environment, Water, Heritage and the Arts (DEWHA) regarding the potential for the SFRC to be classed as a “controlled action” under the EPBC Act. The study team has been advised that DEWHA does not require a referral for the project under the EPBC Act until such time as the detailed design of the project has been undertaken, and the construction of the SFRC is imminent. However, addressing DEWHA’s interests by ensuring avoidance and mitigation of impacts upon MNES has been a primary concern for the study team. This consideration has underpinned the planning and design stages of the SFRC study.

##### ***Native Title Act 1993***

The *Native Title Act 1993* (NT Act) was introduced to address the implications of the Mabo High Court decision, which dismissed the notion of “terra nullius” and recognised the prior rights of indigenous Australians as being similar to those of indigenous groups in other parts of the world. The NT Act set up a process through which indigenous Australian groups can lay claim to pre-existing ownership (native title) rights over areas in Australia and the Torres Strait.

While there are no formally recognised native title rights over the study area, both Local Government areas (Ipswich City and Scenic Rim Regional Councils) are subject to active claims. In particular, the study area is subject to the Jagera People #2 Claim (Ref: QC03/15). This claim covers a large area extending from Toowoomba in the west, Redlands in the east and Esk in the north.

Consideration of the potential application of Native Title to the SFRC is provided in the RAR (Technical Paper 5). The Jagera people have been actively involved in the SFRC Study, and authored Technical Paper 9 - Aboriginal Cultural Heritage.

### **3.2.2 State**

#### ***Transport Infrastructure Act 1994***

The objective of the *Transport Infrastructure Act 1994* (TI Act) is to provide a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure. For rail transport, the objectives of the TI Act under section 2 (d) include establishing a regime that, among other things, contributes to overall transport effectiveness and efficiency, provides for adequate levels of safety, and provides a high level of accountability.

To this end, Chapter 7 of the TI Act deals with rail transport infrastructure:

- Part 2 outlines the process for investigating potential rail corridors (for studies such as the SFRC);
- Part 7 outlines the regulatory processes designed to deal with the administration of railway land.

#### ***Sustainable Planning Act 2009***

The *Sustainable Planning Act 2009* (SP Act) was enacted on 18 December 2009, and together with the *Sustainable Planning Regulation 2009* (SP Regulation), replaced the *Integrated Planning Act 1997* as the primary planning legislation for Queensland. The SP Act oversees the Integrated Development Assessment System (IDAS), which integrates a range of approval requirements previously dealt with under a variety of State legislation. The SP Act also requires each local government to maintain a local planning scheme which deals with the assessment of development within the local government area.

TMR is seeking a CID for the SFRC in accordance with Chapter 5 of the SP Act. The CID process provides for the forward identification of future land requirements for infrastructure development, thus providing certainty to landowners, local governments and State Government agencies alike. The designation will effectively ensure that any future development in the area is consistent with the rail corridor. The CID will provide local governments with guidance for future land use decisions and will assist in facilitating ideal planning outcomes for the future.

In addition to protecting the corridor for the future, CID has the effect of exempting construction of the rail line from assessment under the applicable Local Government planning scheme/s. This is appropriate for large-scale linear projects such as the SFRC. Furthermore, under section 231 of the SP Act, Operational Work for the purposes of this project is “exempt development”, as it does not qualify as self-assessable development, development requiring compliance assessment, assessable development, or prohibited development under Schedule 3 of the SP Regulation.

It is important to note that there may be approvals required for a range of other uses required during the construction phase of the project (such as work camps, quarries and borrow pits) the location of which cannot be determined at this early stage. These uses would not be covered by the CID currently proposed and as such would potentially require approval under the applicable local planning scheme.

A range of approvals required under other State legislation may still be triggered under the SP Regulation. These are listed in the RAR (section 3.2.2), in addition to other relevant licensing and permit requirements.

#### **Koala conservation**

The statutory framework concerning koala conservation in South East Queensland has recently changed. State Planning Policy 2/10: Koala Conservation in South East Queensland, and the accompanying South East Queensland Koala Conservation State Planning Regulatory Provisions were released on 31 May 2010, and are

now in effect for development assessment purposes. These planning instruments are underpinned by the South East Queensland koala habitat values mapping, undertaken by GHD and DERM in 2009. This mapping categorises all areas within the eastern SEQ local government areas according to its present or potential future habitat value for koalas.

The SFRC is likely to require the removal of various categories of koala habitat, as classified by GHD and DERM. These potential impacts are outlined in Technical Paper 2 of the RAR, and are summarised in section 4.2.2 of this report.

Under section 4.1 of SPP 2/10, when designating land for community infrastructure, the Minister must consider the outcomes in section 1.1 of the SPP:

- Ensure koala habitat conservation is taken into account in the planning process, contributing to a net increase in koala habitat in SEQ; and
- Assist in the long-term retention of viable koala populations in SEQ.

Section 4.2 of SPP 2/10 states that designating land for community infrastructure achieves the policy outcomes in section 1.1 when:

- Koala habitat values within the area subject to the designation are identified, using the SEQ Koala Habitat Values Map and the mapping methodology;
- Significant areas of koala habitat value are protected and habitat connectivity is retained and enhanced to maintain koala population viability;
- Koala safety and movement are maximised through design and layout of development;
- A net gain in bushland habitat is achieved through the use of environmental offsets and other mechanisms. At a minimum, offsetting the clearing of non-juvenile koala habitat trees is to be undertaken in accordance with the Offsets for Net Gain of Koala Habitat in South East Queensland Policy at a ratio of five new koala habitat trees for every one non-juvenile koala habitat tree removed or an equivalent cash contribution;
- Design and layout of the community infrastructure land use is consistent with achieving the outcomes of the policy; and
- The community infrastructure provider develops a koala conservation strategy to demonstrate how the policy outcomes are to be achieved, including complimentary, non-statutory management strategies.

At this planning stage, it is not possible to provide specific details relating to how the SFRC will meet each of the items listed in section 4.2 of SPP 2/10. However, measures have been taken during this project to minimise clearing of koala bushland habitat, through the realignment of the SFRC through Ebenezer and Willowbank. Ensuring a net benefit for koalas through the SFRC will only be possible at the detailed design phase, where offsetting strategies, koala safety and movement, and a koala conservation strategy can be finalised.

The project commitments section of this report (section 6.0) recognises the need for the outcomes of SPP 2/10 to be advanced through the future stages of the SFRC, such that the project accords with sections 4.1 and 4.2 of SPP 2/10.

## 4.0 Summary of Potential Environmental Impacts

Volume 2 of the RAR is comprised of 12 technical papers that discuss specific environmental characteristics of the study area, and the potential impacts of the SFRC upon these characteristics. The following section of the FAR summarises the potential impacts of the SFRC, as discussed in further detail within the respective technical papers.

### 4.1 Topography, Geology, Soils and Groundwater

#### 4.1.1 Topography, geology and soils

Potential risks to geology and soils that should be considered and mitigated through the detailed design phase include:

- Potential impacts on watercourses – the SFRC alignment passes over several watercourses, exposing the project to fluvial processes including erosion and deposition. Design standards will need to address the potential impact of stream scour and fill on bridge piers, abutments and embankments at larger watercourses. Smaller streams are likely to carry very little sediment load, but could carry large cobbles and boulders during flood events. The impact of these boulders on bridge infrastructure will need to be considered.
- Erosion – Loamy soils developed on alluvial plains and terraces will be more prone to erosion. The design will need to incorporate stable embankments and cuts with associated catch drains to minimise longer-term erosion.
- Mass wasting and instability – Aerial photography interpretation has identified several areas with potential instability issues, particularly through the very steep hill slopes through the central range areas. The exposure of steep rock surfaces will increase the chance of landslides, slump features and mass wasting. A complete geological profile of the slope (with geological and geotechnical investigations as required), along with a slope stability report, will need to be conducted prior to the commencement of earthworks.
- Exposure of acid-producing material – The potential to expose material containing pyrite within the sedimentary and igneous rocks should be identified by geological and geotechnical site investigation, and appropriate management measures designed.

#### 4.1.2 Contaminated Land

Basic information is known about the type of contamination on the 24 sites within the SFRC listed on the Environment Management Register. These sites are listed due to livestock dips or spray race facilities, hazardous contaminants, fertiliser manufacture, petroleum products or oil storage, and Area Management Advice for unexploded ordnance (UXO). The exact extent of this site contamination remains unknown. Further investigation is required to establish this.

Information provided by the Department of Defence, and local landowners, indicates that there is a relatively high potential to encounter UXO within, and in proximity to, the SFRC alignment in the Woollooman and Undullah areas. Unmitigated, this presents a significant risk during construction. Appropriate investigations into the extent of UXO in this area should be undertaken prior to construction, so that the risk of encountering UXO can be minimised through appropriate management activities.

#### 4.1.3 Groundwater

The risk posed to groundwater flow, quality and quantity is likely to be greatest during the construction phase of the SFRC. This is due to changes to the existing environment through the disturbance and removal of soils, establishment of foundations within the substrata and potential contamination from construction activities.

The water supply requirements for the SFRC are not known at this stage. Groundwater is a possible water source during construction activities. Further assessment will be needed in areas identified as moderate to high groundwater vulnerability to determine potential receptors.

Dewatering of aquifers may be required as part of the construction program. Impacts of this dewatering are likely to be localised and temporary, and may include the temporary lowering of water levels in the nearby surface water features, and temporary lowering of groundwater levels within any registered or domestic wells.

## 4.2 Nature Conservation

The SFRC will potentially have impacts on flora and fauna communities and species protected under Commonwealth and State legislation. Vegetation that is likely to be cleared for the SFRC includes Swamp Tea-Tree (*Melaleuca irbyana*) Forest of South East Queensland (Endangered under the EPBC Act and the *Nature Conservation Act 1992* (NC Act)), and Essential Habitat for *M. irbyana*, *Petrogale penicillata* (brush-tailed rock wallaby) and *Phascolarctos cinereus* (koala). *P. penicillata* and *M. irbyana* are listed as Matters of National Environmental Significance (NES) under the EPBC Act, and therefore any action with the potential to significantly affect these Matters of NES may be considered a Controlled Action under the EPBC Act by DEWHA.

The list below summarises various categories of vegetation within the CID area for the SFRC. The CID area has been used for these calculations, as it represents the land likely to be acquired, and also potentially cleared for the SFRC. These figures are highly conservative, and actual clearing required for the SFRC is likely to be considerably less in most instances:

- Endangered Regional Ecosystem – 0.9ha
- Of Concern Regional Ecosystem – 23.63ha
- Not of Concern Regional Ecosystem – 4.59ha
- High Value Regrowth Vegetation – 105.43ha
- Essential Habitat – 19.41ha
- High Value Bushland Koala Habitat – 6.05ha
- Total Bushland Koala Habitat – 32.41ha
- Medium Value Rehabilitation Koala Habitat – 163.97ha

By realigning the SFRC in the Ebenezer area, the project has lessened the likely area of direct loss of remnant vegetation (including high value bushland koala habitat), however there are still expected to be impediments to the movement of native fauna in a north/south direction. Targeted rehabilitation around the core koala habitat areas, in those areas identified as being of high and medium value rehabilitation potential, is likely to result in better outcomes for koala habitat than was originally provided for under the previous SFRC alignment.

In addition, there are likely to be other impacts associated with the vegetation removal outlined above. This includes:

- Degradation of vegetation communities and habitat values through indirect impacts including fragmentation, edge effects, the spread of weeds, modified surface water drainage patterns, light and noise intrusion;
- Disruption to the actual and potential effectiveness of wildlife corridors;
- Mortality of native fauna from construction activities and/or rail strike during operation; and
- The potential impacts on the movement of wildlife across the landscape.

Mitigation strategies for minimising nature conservation impacts associated with the SFRC are discussed in section 3.0 of the RAR, and are reflected in some of the Key Project Commitments in section 6.0 of this report.

## 4.3 Surface Water

Construction and operation of the SFRC has the potential to affect the water quality and physical integrity of waterways that are crossed by the alignment. Although it is inevitable that some changes would occur to the watercourses because of construction and operation, it is unlikely that this would cause an identifiable negative impact on each waterway as a whole.

### 4.3.1 Water Quality

Potential impacts of the SFRC include:

- Increased sediment in runoff from construction sites;
- Contamination of receiving waters from accidental release of fuels, oils or other chemicals;
- Increased sediment in runoff from the edges of the railway line if surrounding soils are exposed;
- Contamination of receiving water from the accidental release of liquid substances or bulk solids if there were to be a derailment of a freight train; and
- Maintenance of the rail corridor through the application of pesticides.

#### **4.3.2 Riparian Zone**

Potential impacts of the SFRC include:

- Introduction or the spread of weeds or pests carried to the area on construction vehicles; and
- Disturbance of the streambed and bank in areas where the SFRC crosses a watercourse.

### **4.4 Hydraulic Study**

Construction of the SFRC will result in increased peak flood levels upstream of proposed waterway crossings due to constriction of the waterway. However, the hydraulic modelling undertaken for the SFRC indicates that the estimated increases are not expected to result in a significant adverse impact to existing infrastructure or land uses. Further detail is provided in Technical Paper 4 of the RAR.

### **4.5 Land Use and Planning**

The SFRC alignment has been designed to avoid conflicting land use impacts as far as practical. Through introducing freight rail traffic into the area and potentially catalysing development of regional industry and an intermodal freight terminal, the SFRC is likely to alter the quiet rural nature and character of parts of the study area. With the transformation of character as the overarching impact, a number of other impacts upon the study area will remain despite attempts to mitigate these. These impacts include relocation of residents within the alignment, disruptions to connections between properties and local roads, changes to the local transportation network, disruptions to rural activities and potential decreases in local biodiversity.

With respect to future development, the SFRC complements the future planning intent for much of the study area. The future industrial precincts of Ebenezer and Purga are proposed to be located adjacent to the SFRC, with the high possibility of an intermodal freight terminal along the corridor. This freight terminal and industry would potentially act as a major catalyst for industry and logistics in the western corridor, generating significant employment and promoting the development of the future residential area within the Ripley Valley.

Nevertheless, the impact that the SFRC will have upon the local communities in the study area is significant. In light of the considerable regional benefits of the project it is reasonable to require that considerable effort be put into mitigating localised negative impacts through the implementation of appropriate design responses to particular issues and fair and reasonable compensation for landowners with a land requirement on their property as a result of the SFRC. Consideration should also be given to community improvement projects that can be undertaken in order to leave a positive legacy for the local community (see section 6.16).

### **4.6 Air Quality, Climate and Climatic Trends**

The construction of the SFRC will potentially have a short-term impact on the local air quality. Operations of the SFRC will potentially have a minor intermittent impact from exhaust gases and possible odour from passing trains. This is only expected to affect receptors immediately adjacent to the SFRC alignment during the time of the particular event. On a broader scale, and coupled with the Inland Rail, the SFRC is expected to contribute to a reduction in greenhouse gases, based on the number of trucks that the rail freight is likely to substitute in transporting freight between Melbourne and Brisbane.

### **4.7 Visual Impact**

The SFRC is likely to have impacts upon the visual amenity of the study area. Some landscape and visual impacts have been partially mitigated in the current preliminary design through the two tunnels within areas of high scenic visual amenity in the eastern part of the corridor that will minimise the visual and landscape impact.

The areas of high scenic visual amenity in the study area are generally associated with the Flinders/Goolman Range. Additional opportunities to address adverse impacts should be integrated into the detailed design phase of the project. Further, it is recommended that a Landscape Integration Strategy and Landscape, Revegetation and Urban Design Guidelines are developed during detailed design.

Additionally, the SFRC has the potential to interface with the proposed Boonah-Ipswich Multi-User Recreation Trail. The predicted future viewers in this area are considered to be a sensitive viewer group of regional and potentially state importance, given the viewers will be using the trail principally for landscape appreciation.

## 4.8 Noise and Vibration

Noise monitoring as part of the SFRC Study has shown that the background noise level of the study area is generally considered low. A review of operational noise criteria was assessed using the *Environmental Protection (Noise) Policy 2008*, the *QR Code of Practice – Railway Noise Management*, and the TMR internal noise criterion, as identified in *Queensland Transport's Interest in Planning Schemes (QTIPS)*. These criteria were adopted for the purposes of this planning study, and it is suggested that a re-evaluation of these criteria should be undertaken during detailed design.

The assessment indicated that approximately 15 residential dwellings will exceed the statutory QR external noise criteria, and a further 455 residential dwellings will exceed the TMR internal noise criterion where the bedroom windows of these dwellings remain open. It should also be noted that there are two areas in particular where the SFRC is located in proximity to higher densities of sensitive land uses, as opposed to the largely rural environment for the balance of the corridor. Firstly, the SFRC alignment passes to the south of a substantial rural-residential community situated on Paynes Road and Mount Forbes Road. Secondly, where the SFRC passes to the east of Peak Crossing, there are a number of development types in close proximity to the alignment which are considered to be sensitive to environmental emissions generated by transport operations and infrastructure.

In relation to operational vibration, the results indicated that a buffer distance of 20m from the alignment would be required to achieve forecast compliance with operational vibration criteria. Construction noise and vibration guidelines are to be outlined in the Construction Environmental Management Plan.

Further detailed modelling is required to confirm the extent of residual impact during detailed design, based on the appropriate criteria at the time of assessment.

## 4.9 Aboriginal Cultural Heritage

Twenty-five sites of Aboriginal cultural heritage significance were identified and recorded within the study area during the desktop research and field survey. A further four areas of interest were identified as having a high potential to contain sites and objects of Aboriginal cultural heritage significance. While the field survey was able to confirm the existence of a considerable number of sites and objects, further cultural heritage surveys should be completed.

Based on the high-level study undertaken for the SFRC study, the alignment is considered to be located suitably for the preservation of Aboriginal cultural heritage.

## 4.10 European Cultural Heritage

A number of impacts upon European cultural heritage have the potential to result from the construction and operation of the SFRC. Most significantly, Undullah Homestead will be directly impacted by noise from construction and operation, potentially making it uninhabitable and necessitating its relocation. While there are no other places of European cultural heritage that will be directly impacted, there are a number of potential indirect impacts on heritage places, character precincts and the general environmental setting. These potential impacts include the introduction of new environmental elements such as noise, altered visual aspects, and alterations to land use patterns in the area as a result of the SFRC. The impact of these changes is considered to be manageable.

## 4.11 Social Impact

The SFRC is likely to create a number of national, state-wide and regional positive impacts, whilst also creating a number of localised negative impacts. These localised negative impacts are likely to include changes in accessibility, amenity and character, property acquisition and replacement, and perceived safety risks.

Consequently, the SFRC Study has caused – and is likely to continue to cause – stress on landowners within the study area. Furthermore, the acquisition of land for the SFRC (including whole-takes of properties), coupled with the construction of the railway line, is likely to cause social dislocation throughout the local community.

#### **4.12 Economic Analysis**

The economic analysis undertaken for this project investigated – at a high level – the potential costs and benefits associated with reserving the SFRC now, as opposed to immediately prior to construction. The analysis showed that there are net benefits of reserving the SFRC now, provided that there is a future dual gauge Inland Railway. Local economic impacts from building the SFRC are likely to be limited, unless an intermodal freight terminal is also developed; however the investigation of the terminal is outside the scope of this SFRC study. There will be significant regional benefits from the rail line and state and national benefits if the rail line is integrated with the proposed Melbourne-Brisbane Inland Railway.

## 5.0 Summary of Issues Raised and Account Taken

### 5.1 Introduction

Under section 207 of the *Sustainable Planning Act 2009*, the Minister must be satisfied that adequate account has been taken of issues raised by stakeholders throughout the CID process. The community engagement for the SFRC study has been undertaken in accordance with the CID Guidelines (refer to section 2.2 and chapter 5 of the RAR). The submissions report (Appendix D of the RAR) provided a breakdown of all issues raised by submitters during stage 2 of the CID process, and contained responses to each of these issues. Appendix A of this report contains the issues raised by submitters during stage 4 of the CID process (during the submission period for the RAR), and provides responses to each of these specific issues. In accordance with the CID Guidelines, each submitter during stage 4 of the CID process will receive these categorised issues and responses. This information is contained within this Final Assessment Report for the Minister's consideration of the adequacy of community engagement for the SFRC study.

### 5.2 Major Themes

The community engagement process for the SFRC study revealed a number of key themes of concern for submitters and other stakeholders. Full details of issues and concerns raised by stakeholders can be found within Appendix D of the RAR, and Appendix B of this report. The key themes are listed below:

- **Direct property impacts** – Generally, landowners who have been informed that there is a land requirement on one or more of their properties for the SFRC have expressed concern about the imposition of the SFRC upon their property, and the resulting loss of land and property value. In addition to the direct land requirement on their property, many landowners are concerned about their ability to easily access all or part of their property once the SFRC is constructed and operational. This includes concerns about road access to their property, as well as access across the corridor for stock and/or machinery. Coupled with this, some landowners are concerned that the present use of their property will not be able to continue once the SFRC is constructed, as the railway line will bisect their property and make it difficult to continue farming operations.
- **Noise** – Many landowners in proximity to the SFRC alignment have expressed a deep concern about the potential noise emitted by the locomotives and rolling-stock during the operation of the railway line. These concerns are compounded by the intent to ensure the SFRC is operational 24 hours per day, and by the fact that, generally, the surrounding area is characterised by a very low existing noise level – owing to its largely rural nature. In some instances, landowners are concerned that their dwellings will become unliveable, or that the level of noise mitigation required to ensure their dwellings are liveable would be overly onerous on their lifestyle. Significant concerns were also raised by Ivory's Rock Conference Centre, relating to the potential consequences of intrusive noise from the SFRC on their present and future operations at the site.
- **Changes in other aspects of amenity and lifestyle** – Generally, the SFRC represents a land use that is relatively inconsistent with the rural and semi-rural nature of the wider area. Many submitters have pointed out that they chose to live in the area to enjoy the quiet, rural character. These landowners are concerned that the presence of the SFRC in the area will detract from these qualities that presently contribute to their peaceful lifestyles.
- **Development of the Scenic Rim** – some submitters believe that the wider Scenic Rim region should be protected from urbanisation in the future – of which the SFRC is one example.
- **Uncertainty associated with the project** – The uncertain nature of the SFRC project is a significant concern for many submitters. This uncertainty relates to the timeframes for construction and operation of the SFRC. Indications are that this will not occur prior to 2031, as construction will ultimately depend on a range of external influences. Further, the finer details of the design of the SFRC are not known at this planning phase (e.g. specific acoustic impacts, specific design details, cross-drainage features). These details will only be known once the detailed design of the SFRC is undertaken (likely to be approximately two years prior to construction). This uncertainty affects those people with land requirements on their property, and also those landowners living in proximity to the corridor.
- **Potential environmental impacts** – Many submitters have expressed concern about the potential environmental impacts of the SFRC, including those related to vegetation clearing (and removal of habitat), and the potential to bisect wildlife corridors. Technical paper 2 of the RAR identifies the potential impacts of

the SFRC upon nature conservation values, and recommends mitigation strategies to avoid or minimise these.

- **Flooding** – A number of submitters have informed the study team that achieving flood immunity for the SFRC will be very difficult, if not impossible. Due to the low-lying nature of much of the corridor, there are a number of locations where cross-drainage design is critical to ensure the SFRC is not prone to frequent flooding. Coupled with this, some submitters are concerned that the cross drainage (or lack of cross drainage) for the SFRC in some areas will create property-specific flooding impacts during rainfall events that do not presently exist.
- **Unexploded ordnance** – Some submitters in proximity to the eastern end of the SFRC corridor, and those associated with the Fair Go Committee, have stated that the risk of unexploded ordnance (UXO) has been underestimated in the RAR, and poses a significant risk to the future viability of the SFRC project. These submitters note that the previous use of the Woolooman/Undullah valley by American forces during World War II as a high explosive firing ranges poses unacceptable risk to the construction and use of the SFRC in this area.
- **Economic impacts** – Many submitters living within, or in close proximity to, the SFRC have noted that the location of the SFRC alignment has already had, and will continue to have, a significant economic impact on them. This is generally through decreases in property values in the surrounding area, due to the potential amenity impacts that may result from the construction and operation of the SFRC into the future. These landowners claim that the SFRC study has already had this effect of decreasing values, regardless of the fact that construction of the SFRC may not occur until after 2031. For landowners close to the SFRC, but without a land requirement, this presents a significant issue because these landowners have no recourse for seeking compensation for the loss in market value of their property. Other submitters have highlighted concerns about the downstream local and regional economic impacts resulting from potential effects on the Ivory's Rock Conference Centre, and from decreases in overall tourism within the Scenic Rim area.
- **Community engagement process** – A number of submitters have stated their dissatisfaction with the community engagement process that has accompanied the SFRC study. Some submitters claim that their issues and concerns are being misinterpreted or dismissed by the project team, while others believe that the community engagement for the study has not been comprehensive enough – with those in the wider area not being made aware of the potential impacts that the SFRC may have on their lifestyle. Further, many people living in and around Paynes Road and Mount Forbes Road have questioned why they were not consulted prior to the realignment of the SFRC corridor in this area. Some submitters also claim that they were careful not to purchase property within the corridor of interest for the SFRC, but now have land requirements on recently-purchased property, or are located very close to the SFRC alignment as a result of changes to the study area and final alignment since the inception of the SFRC study.
- **Background studies, study area determination and identification of an alignment** – Many submitters, including those associated with the Fair Go Committee, believe that the SFRC study is based on unsound decisions and prior investigations into a connection between the western and interstate railway lines. The Southern Infrastructure Corridor study (Maunsell, 2005) is referenced numerous times, as it proposed an alternative northern option for this connection as another feasible option. Some stakeholders believe that the decision by the then Minister for Transport to discount this northern (N1) option based on the potential impacts on present and future residential communities (namely Springfield and Ripley) was unjustified. Consequently, these stakeholders believe that the determination of the SFRC study area (based on the more southern "C3" option) and subsequent identification of a preferred alignment for the SFRC are inherently flawed. The Fair Go Committee proposed an alternative alignment, which has been assessed during the process of this study. The study found that on balance, the Fair Go Committee's alternative alignment did not pose advantages over the SFRC alignment.
- **Revised alignment in Ebenezer** – The revision to the SFRC alignment between the Draft Assessment Report and Revised Assessment Report has brought about mixed reaction from submitters. Koala groups, including the Ipswich Koala Protection Society, believe that the revision to the alignment (to avoid a core area of high value bushland koala habitat, recognised under the new DERM mapping) will reduce the impacts on the koala habitat and populations in the area. Other submitters, including landowners in close proximity to the revised portion of the alignment along Paynes Road believe that the revision to the alignment was unjustified and undertaken in a way that was not transparent, and did not include the views of the surrounding community. Thirdly, some submitters – mainly those associated with the Fair Go Committee – claim that the revision to the alignment in this area was not to minimise potential impacts on koalas, but to suit property developers in the nearby Ebenezer future industrial area.

## 6.0 Key Project Commitments

The SFRC study, through environmental assessment and community engagement, has identified a number of potential impacts associated with the construction and operation of the railway line in this location. The RAR identifies these potential impacts, and recommends mitigation measures at future stages to avoid or minimise these impacts. However, there are some specific recommendations that are of integral importance to the future viability of the SFRC. It is of the highest importance that these recommendations become commitments during future stages of the project, to ensure that these critical issues are addressed appropriately and do not affect the future viability of construction and operation of the SFRC. These commitments should be acknowledged by the proponent of the project, be considered in the future environmental investigations for the SFRC, and be central to the detailed design, construction and operation of the SFRC. Furthermore, as identified in Table 1, these commitments should be included in the designation of the SFRC for community infrastructure.

### 6.1 Noise Mitigation

The SFRC will potentially have significant noise impacts on a number of dwellings within the study area. It is expected that future stages of the project will include a thorough assessment of this potential impact, and will include strategies to mitigate these impacts in line with the relevant statutory obligations at the time. It should also be noted that there are two areas in particular where the SFRC is located in proximity to higher densities of sensitive land uses, as opposed to the largely rural environment for the balance of the corridor. Firstly, the SFRC alignment passes to the south of a substantial rural-residential community situated on Paynes Road and Mount Forbes Road. Secondly, there are a number of development types in close proximity to the alignment that are considered to be sensitive to environmental emissions generated by transport operations and infrastructure. These development types include accommodation activities (eg. dwellings, short term accommodation), educational establishments (eg. primary schools), early childhood facilities (eg. child care centres), and community uses (eg. community halls).

Where the construction, operation, maintenance or use of the SFRC creates or has the potential to create adverse environmental impacts, the proponent must comply with any obligations under legislation to mitigate those impacts.

### 6.2 UXO Investigation

The potential presence of UXO within and in close proximity to the SFRC around Woollooman and Undullah is a significant concern for landowners. Unmitigated, the presence of UXO in the area during construction presents a high safety risk to construction workers and nearby landowners. Therefore, it is recommended that the future proponent of the SFRC undertakes a thorough investigation into the presence of UXO in proximity to the SFRC alignment. This investigation will identify all UXO with the potential to be disturbed by the construction and operation of the SFRC, such that they can be excavated and removed in accordance with the Department of Defence guidelines. This will result in minimal residual UXO risk for the construction and operation of the SFRC.

### 6.3 Facilitation of Fauna Movement in Key Areas

The SFRC has the potential to sever fauna movement corridors across the landscape. It is recommended that the detailed design stage of the SFRC project includes detailed investigation into the incorporation of fauna movement structures across the SFRC at key locations (for example, in the Ebenezer and Mount Forbes area, and in the Woollooman and Undullah areas within the Mount Flinders range). In order to maximise the effectiveness of these fauna movement structures, the final determination of key locations for fauna connectivity should be based on the information contained within the RAR, and any further detailed investigations into the ecological characteristics of the study area. Fauna movement corridors implemented for the SFRC must also be complementary to any ecological corridor strategies within the study area, including those associated with the Ebenezer Regional Industrial Area.

Further, it is recommended that key groups are actively encouraged to participate in, and contribute to, the location and design of these structures. Groups that have previously expressed a high degree of interest in being involved in future design and location of fauna crossings include DERM, DIP, the Ipswich Koala Protection Society, and local government ecologists and conservation officers.

## 6.4 Project-Specific Environmental Offsets Strategy

Environmental offsets will be required for the SFRC, consistent with the statutory obligations at the time of detailed design and construction. Given the importance of remnant vegetation to the conservation of biodiversity within the landscape, it is recommended that the SFRC is accompanied by a project-specific environmental offsets strategy that complies with all relevant statutory obligations. Consistent with the Q2 and SEQRP green targets, the project-specific environmental offsets strategy should also seek to enhance the landscape ecological processes within the wider study area. It is also recommended that key groups such as DERM, the Ipswich Koala Protection Society, and local government ecologists and conservation officers are involved in the preparation of an environmental offsets strategy for the SFRC. The long lead time to construction provides an ideal opportunity for the offsets strategy to be developed well in advance of construction (such as when there is a firm commitment to construct the SFRC). This would allow offset areas to mature as far as practically possible prior to the construction of the SFRC, and would maximise the effectiveness of the offsets strategy.

The *Melaleuca irbyana* vegetation community is a Matter of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). *M. irbyana* regrowth within the SFRC alignment and Ebenezer Regional Industrial Area has the potential for substantial regeneration, establishment and maturation in the period between this planning study and the construction of the SFRC. The preparation and implementation of a *Melaleuca irbyana* Community Management Plan is required in the short term. This plan should include investigation into, and purchase of, potential offset sites in the region, in addition to strategies for early offset implementation. This plan will be critical to assist any future referral of the SFRC project to the Department of Environment, Water, Heritage and the Arts for assessment against the EPBC Act.

## 6.5 Project-Specific Koala Conservation Strategy

The SFRC is required to advance the outcomes of State Planning Policy 2/10: Koala Conservation in South East Queensland, as outlined in section 3.2.2 of this report. The future stages of the SFRC project must demonstrate how the project meets the requirements of sections 4.1 and 4.2 of SPP 2/10. Integral to achieving this will be the development of a project-specific koala conservation strategy demonstrating how these requirements will be met, including:

- Protection of significant areas of koala habitat value;
- Retainment and enhancement of habitat connectivity to maintain koala population viability;
- Maximisation of koala safety and movement through design of the SFRC;
- Achievement of a net gain in bushland habitat through the use of environmental offsets and other mechanisms; and
- Development of non-statutory management strategies on behalf of the proponent to advance SPP 2/10.

The *Memorandum of Agreement for Government supported transport infrastructure within South East Queensland Koala Protection Area between DTMR and DERM* (June, 2010) (MoA) clarifies how State-supported transport infrastructure projects practically interact with SPP 2/10 and supporting statutory policies. Reference to the MoA in the development of a project-specific koala conservation strategy will be necessary, particularly in relation to any non-statutory management strategies.

## 6.6 Referral of the Project to the Department of Environment, Water, Heritage and the Arts

The Department of Environment, Water, Heritage and the Arts (DEWHA) were consulted as part of the SFRC study, in accordance with obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). DEWHA stated that, given the long-term nature of the project and the lack of detailed design information at this stage, a referral under the EPBC Act would not be required until the detailed design stage. To avoid risks associated with potential significant impacts of the project on Matters of National Environmental Significance under the EPBC Act, it is recommended that the proponent of the SFRC establishes and maintains ongoing liaison with DEWHA throughout the later design stages of the SFRC, and prepares a referral under the EPBC Act in accordance with the requirements of DEWHA.

## **6.7 Landscape Integration Strategy, and Landscape, Revegetation and Urban Design Guidelines**

The SFRC study area is generally characterised by high levels of scenic amenity. A key concern of many stakeholders in the area is the potential impacts of the SFRC (with associated embankments, bridges and cuttings) upon the scenic amenity of the landscape. It is therefore integral that the proponent undertakes a thorough visual impact assessment at the time of detailed design. Further, based on the findings of the visual impact assessment within the RAR and during the detailed design process, it is recommended that a Landscape Integration Strategy and a set of Landscape, Revegetation and Urban Design Guidelines are prepared, to guide the design, construction and maintenance of the SFRC. These guidelines will aim to ensure that the SFRC is integrated into the surrounding landscape to the greatest possible extent. The Landscape, Revegetation and Urban Design Guidelines should also be complementary to the Landscape and Urban Design Guidelines that are prepared for the Ebenezer Regional Industrial Area.

## **6.8 Future Intermodal Freight Terminal – Ebenezer**

The preliminary design of the SFRC, provided in the SFRC study, includes passive allowance for a future intermodal freight terminal (IFT) at Ebenezer, west of the Cunningham Highway. It is recommended that any planning of the future use of the Ebenezer area (including the master planning of the wider area for industrial purposes) should not impede the potential for the future development of an IFT in this area. Similarly, any design of an IFT at this location must include the involvement of surrounding landowners (for example, Powerlink and their substation site). To this extent, it is recommended that TMR and/or DIP undertake a concept planning exercise for a future IFT at Ebenezer as a priority in order to inform the current structure planning exercise, such that:

- Land is identified for use by freight-intensive and commercial activities close to the IFT
- Land uses that are incompatible with freight operations, and may restrict the IFT from operating 24 hours per day, 7 days per week, are avoided
- There is sufficient buffering between IFT operations and residential areas
- The structure plan provides allowance for potential future capacity expansion of an IFT.

## **6.9 Cross-Drainage Design**

The detailed design stage of the SFRC will need to include cross-drainage solutions along the entire SFRC alignment. This cross-drainage design should seek to ensure that there is no net increase in flooding on properties or State-controlled roads as a result of the construction and operation of the SFRC. Some landowners along the alignment have a thorough knowledge of the flooding characteristics of their land at present. It is recommended that these landowners are given the opportunity to contribute to the information provided to the proponent when undertaking the cross-drainage design.

## **6.10 Assist Local Businesses with Land Requirements**

The contribution that local agricultural businesses throughout the study area have on the local and regional economy is considerable. It is important that the detailed design of the SFRC assists the operators of these businesses to continue operations to the greatest extent possible. It is recommended that the proponent consults with these local business owners, particularly those with land requirements on their properties, to ensure that the detailed design of the SFRC accommodates their specific needs and concerns wherever possible such that the businesses are given every opportunity of continuing during the construction and operation of the SFRC. Specific attention should be given to access, irrigation, water storage, stock movement, fencing and weed management.

## **6.11 Aboriginal Cultural Heritage Management Plan and Detailed Survey**

The SFRC study involved an assessment of potential impacts of the SFRC upon aspects of Aboriginal cultural heritage significance. The Traditional Owners of the area had significant input into this study. Key recommendations arising from the study included the need to prepare a Cultural Heritage Management Plan (CHMP) for the SFRC, as well as the commissioning of a detailed survey of the preferred alignment to further identify aspects of Aboriginal cultural heritage significance that may potentially be impacted by the SFRC. It is recommended that the future environmental investigations for the SFRC include the involvement of the Traditional

Owners and a detailed site survey. Based on the outcomes of this study, a CHMP should be developed between the proponent and Traditional Owners to ensure the ongoing management of Aboriginal cultural heritage values within the area, and to ensure that obligations under the *Aboriginal Cultural Heritage Act 2003* are met.

## **6.12 Conservation Management Plan for European Cultural Heritage**

An investigation into European cultural heritage values throughout the study area was undertaken as part of the SFRC study. A key recommendation of this investigation was that a Conservation Management Plan (CMP) is prepared during the detailed design stage of the SFRC project to ensure that all aspects of identified European cultural heritage are conserved in accordance with Commonwealth and State legislation, as well as local government provisions. This CMP should include a place-specific CMP for the Undullah Homestead, a site listed on the State heritage register.

## **6.13 Full and Comprehensive Costing of the SFRC**

This SFRC planning study has included a high-level indicative costing of the construction of the SFRC alignment. It is recommended that prior to the detailed design stage of the SFRC, a full and comprehensive costing of the SFRC (including costs for all aspects of the project, such as land acquisition, mitigation measures to manage environmental risks, materials, and construction method) is undertaken to inform a business case for the project. It will be at this stage that a clearer indication of the full and true cost of the SFRC is determined. Until final design is completed, costs should only be considered indicative.

## **6.14 Environmental Management Plans**

Environmental Management Plans (EMPs) for the construction and operation phases of the SFRC project must be developed, based on the detailed design information and accompanying future environmental investigations. The EMPs will be required to adhere to all relevant legislation at the time, and should aim to minimise the impacts of the SFRC upon the surrounding environment during construction and operation phases.

## **6.15 Ongoing Involvement of Stakeholders**

Throughout the future stages of the SFRC, it is imperative that all project stakeholders – particularly landowners and submitters to the DAR and RAR – are informed about future studies, approvals processes, and anticipated construction and operation timeframes. The input from these stakeholders should form an essential component of the detailed design stage of the project.

## **6.16 Community Improvement Projects**

Due to the nature of the SFRC, local benefits to the surrounding community as a result of the project are likely to be minimal. Therefore, it is reasonable to explore opportunities for community improvement projects, as an offset to the localised social impact of the project. It is recommended that the proponent explore the potential effectiveness of various community improvement projects during the detailed design phase of the SFRC.

## 7.0 Conclusion

The SFRC is an important project for the western corridor of SEQ, the wider SEQ region, Queensland and Australia. When coupled with the future inland railway, the project provides benefits within an economic, freight transportation, social and land use planning context. The SFRC will ensure that heavy freight rail does not congest the Brisbane metropolitan network, and will provide logistics operators a competitive alternative to road transportation for interstate freight movements.

At the national, state, regional and local government level, the SFRC is an important and practical development initiative of TMR.

The SFRC study has shown that the SFRC has the potential to cause a number of impacts upon the local environment. This report has outlined the most significant potential impacts, and the most significant concerns of stakeholders. Further information is provided in the Revised Assessment Report.

Through the use of appropriate mitigation strategies, and through the project commitments outlined in section 6.0 of this report, it is expected that the potential impacts of the SFRC can be effectively managed. Fundamental to the effective management of potential impacts will be the investigations undertaken at the business case and detailed design phases of the project.

The project commitments outlined in section 6.0 of this report represent the most crucial considerations for the proponent in future project stages. Coupled with the Revised Assessment Report, these project commitments will assist in the scoping of future environmental investigations, and in the detailed design, construction and operation phases of the project.

The information provided in this report and in the Revised Assessment Report has been compiled to meet the requirements of the community infrastructure designation process under the *Sustainable Planning Act 2009*. It is contended that this information provides the Minister with certainty that at this planning stage, a) adequate environmental assessment has been undertaken; and b) adequate account has been taken of issues raised by submitters, to enable designation of the SFRC alignment as community infrastructure to occur. To this end, the SFRC study has been undertaken in accordance with – and in many cases, beyond – the requirements for CID projects outlined in the *Guidelines About Environmental Assessment and Public Consultation Procedures for Designating Land for Community Infrastructure*.