The Coordinator-General

Landsborough to Nambour Rail project

Coordinator-General's report on the environmental impact statement

November 2011

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Synopsis

This report has been prepared pursuant to section 35 of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) and provides an evaluation of the environmental effects of the Landsborough to Nambour Rail project (the project).

The proponent for the project is the Department of Transport and Main Roads (TMR). TMR proposes to construct a double-track railway, along a predominantly new route within a corridor that can provide for up to two additional tracks if required in the future. The proponent proposes to upgrade, realign and duplicate approximately 22 kilometres of the existing North Coast Line (NCL) between Landsborough and Nambour, on the Sunshine Coast in Queensland.

The project aims to upgrade regional transport systems in South East Queensland, and improve the service frequency, operating speeds and reliability of trains, allowing for modern, efficient rail infrastructure to cater for increasing demand for transport services due to population and freight transport growth.

The capital cost of the project is estimated at $1.7 billion and it is expected to create up to 659 jobs over a six-year construction period. This is a long-term planning project with the objective of securing the corridor in advance of future phases of its implementation. TMR proposes the project be operational by 2031, subject to whole-of-government priorities and funding availability. As such, the timeframes for detailed design and construction staging are currently undefined, and will depend on government's future infrastructure delivery priorities.

Section 5 of this report outlines the major environmental effects as identified in the environmental impact statement (EIS), supplementary project information, submissions on the EIS and comments from advisory agencies and other stakeholders. These effects are summarised in the following paragraphs. Refer to Appendix 1 of this report for a list of activities and actions the proponent has committed to undertake to manage impacts.

Route selection

TMR undertook the Landsborough to Nambour Route Identification Study and its related public consultation process in 2008. The study sought to meet railway efficiency objectives while minimising impacts on communities and areas of high conservation value.

The EIS found that the project is likely to result in some unavoidable adverse impacts and identified a number of Special Management Areas (SMAs) that require a concerted effort to manage impacts and maintain pre-defined special values into the future.

Nature conservation

The project traverses significant areas of remnant vegetation and areas supporting a diverse range of terrestrial fauna, including some species of conservation

significance. The highest potential impact would be within the southern section of the proposed route from Landsborough to Palmwoods.

Due to the linear nature of the rail infrastructure, it is not possible to avoid all areas identified as valuable habitat, nor avoid crossing waterways and riparian and in-stream habitat. The proponent has committed to a policy of no net loss for biodiversity in the region. This includes building fauna-friendly features where possible and providing offsets for native vegetation clearing and other biodiversity impacts. TMR also proposes to address key potential impacts within SMAs. In particular, these include waterway crossings in areas that support the endangered giant barred frog (*Mixophyes iterates*).

Property and land use

The proposed rail corridor passes through established townships and rural areas and involves significant changes of alignment in several locations. In considering the proposed corridor, the proponent has taken appropriate steps to lessen the impacts to the surrounding community where possible.

The project would cause some unavoidable impacts on communities associated with the resumption of property, construction impacts and potential changes to the demographics of the affected towns. The Coordinator-General considers that direct property impacts would be addressed appropriately and in a timely manner in accordance with government policies relating to land acquisition.

The proponent has committed to establishing a joint project planning working group with the Sunshine Coast Regional Council (SCRC). This group will consider land use planning matters affected by the project and would further refine specific management actions within town centres and other SMAs.

Landscape and visual amenity

The EIS indicated that large sections of the project area are considered to have a high scenic amenity profile and concluded that, overall, the visual impact would be moderately adverse. Outside urban areas, the corridor could have relatively high visual impacts in some sections, where extensive vegetation clearing and/or new bridge crossings are required.

TMR has assessed potential impacts to landscape values and visual amenity and committed to comprehensive mitigation measures, such as using landscaping to provide screening; designing structures to minimise visual impact; and developing visual design guidelines in conjunction with affected communities.

Roads and road network

Project construction would directly impact local communities due to the necessary changes to the road network, construction traffic and altered noise conditions. Further assessment would be required, as part of the detailed design of the project, to determine construction vehicle movements and their effects on the local road network over the various stages of the works.

Grade separated crossings at Landsborough and Mooloolah are proposed. The proponent is unable to commit to specific timings for these works; however, has committed to continue engaging with the SCRC and community representatives prior to detailed design, to determine timing and need.

Noise and vibration

The preferred corridor selection process for the proposed railway upgrade did not seek to avoid urban areas along the route; therefore, ongoing noise and vibration impacts would be unavoidable. The EIS predicted that the residual noise and vibration impacts are expected to be manageable, although moderate impacts are predicted in some cases.

While the project will bring about an increased number and frequency of trains, which would increase operational noise, other aspects of the project (such as the improved track grade and alignment) would help to reduce noise levels.

Conclusion

The Coordinator-General is satisfied that the EIS process meets the requirements for impact assessment, to the greatest extent practicable, in accordance with the SDPWO Act. The process provided sufficient information to allow an informed evaluation of the project's potential environmental impacts, as they are currently known. Due to the early stage of project formulation, certain matters investigated in the EIS will require further detailed review and/or investigation at a later date, prior to project development.

The Coordinator-General concludes that the project will deliver a range of direct benefits to the local and regional communities in the form of efficient and timely passenger services, as well as broader benefits to the state in the form of freight transportation improvements and improved productivity, therefore, his recommendation is that the Landsborough to Nambour Rail project should proceed.

This report will be provided to the proponent (TMR), SCRC, and relevant Members of Parliament. It will also be made available at **www.deedi.qld.gov.au**

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Keith Davies
Coordinator-General
9 November 2011

1 Introduction

This Coordinator-General's report evaluates the environmental impact statement (EIS) prepared by the Department of Transport and Main Roads (the proponent) for the Landsborough to Nambour Rail project (the project).

The report assesses the key issues associated with the project's potential impacts on the physical environment at the local, regional and state levels. It does not record all matters identified and subsequently settled during the EIS process. Instead, it concentrates on the substantive environmental effects and related matters identified during the EIS process.

It should be noted that, due to the early stage of project formulation, certain matters investigated in the EIS will require further detailed analysis and investigation at a later date, prior to project development.

This report represents the conclusion of the present stage of the Queensland Government's impact assessment process. For information on the EIS process, including a full list of the organisations and individuals who commented on the proponent's EIS, refer to Section 3 of this report (page 15).

Acronyms and other key terms used in this report are defined on pages 55–57 of this report.

2 About the project

2.1 The proponent

The proponent for the project is the Department of Transport and Main Roads (TMR) (previously Queensland Transport), a lead agency within the Queensland Government responsible for the development and management of land, air and sea transport environments in Queensland.

QR Limited is proposed to be the constructing authority and rail manager for the realigned and upgraded section of the North Coast Line between Landsborough and Nambour. QR Limited is a government-owned corporation and operates passenger rail services under contract to the TransLink Transit Authority and TMR, as well as commercial freight services.

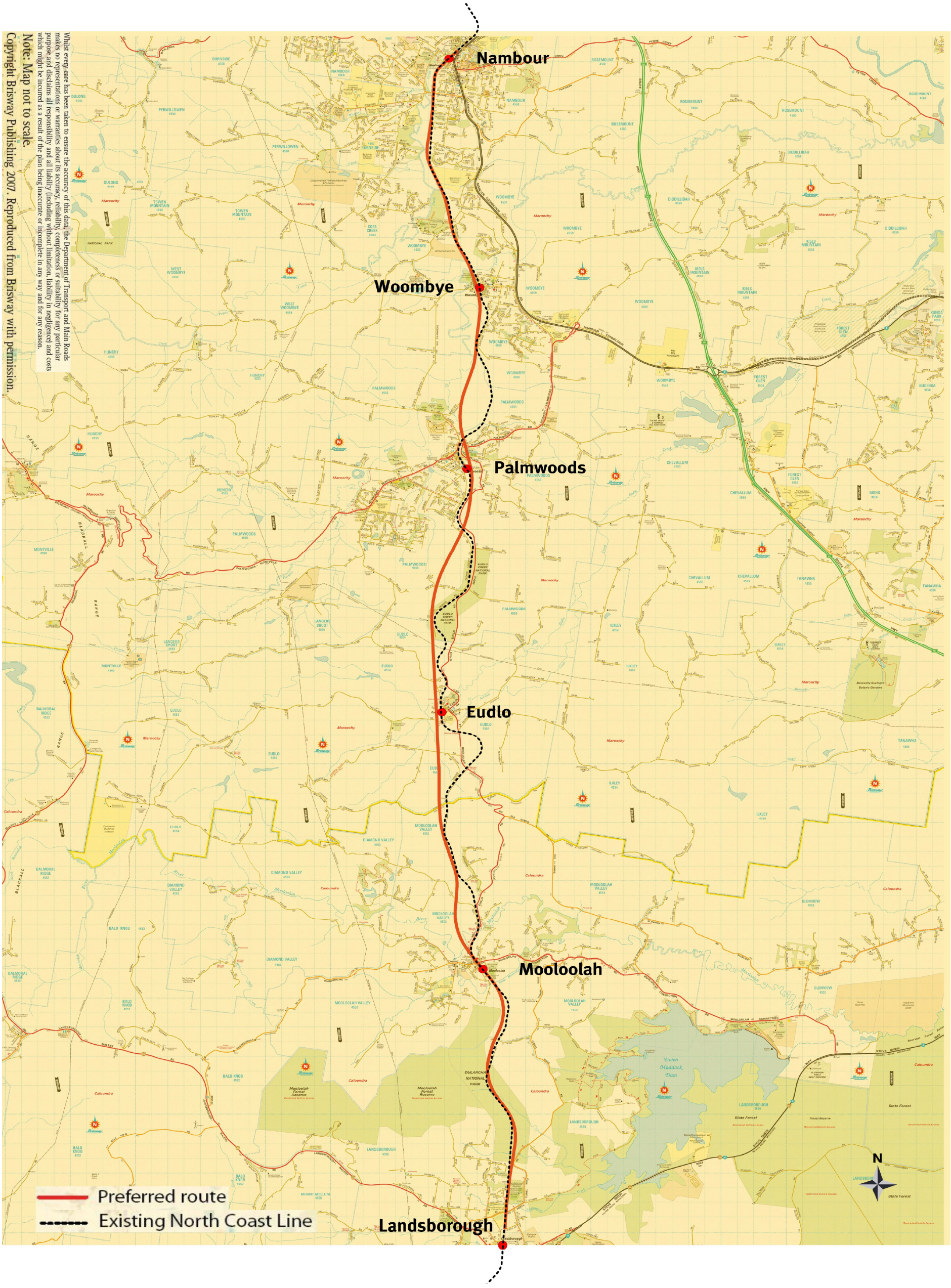
2.2 Project description

TMR is proposing the project to upgrade, realign and duplicate approximately 22 kilometres (km) of the existing North Coast Line (NCL) between Landsborough and Nambour, on the Sunshine Coast hinterland in Queensland. The project begins directly north from the Landsborough railway station, passing through the towns of Mooloolah, Eudlo, Palmwoods, Woombye and ending at Nambour railway station. A locality map of the project is shown below in 0.

The project involves constructing a double-track railway, along a predominantly new route within a corridor that can provide for up to two additional tracks if required in the future. The identified corridor will provide long-term land use certainty and flexibility, to cater for very long-term demand without further disruption to local communities.

The aim of the upgrade is to improve the service frequency, operating speeds and reliability of passenger and freight trains, allowing for modern, efficient rail infrastructure to cater for increasing demand for transport services in the corridor resulting from population and freight transport growth.

Figure 2.1 Locality map



The project is a long-term planning project as identified in the *South East Queensland Regional Plan 2009–2031*[1] (SEQ Regional Plan) and the *South East Queensland Infrastructure Plan and Program 2010–2031*[2] (SEQIPP), to improve the NCL and integrate regional transport systems in SEQ. On 12 July 2011, the SEQIPP was replaced by the Queensland Infrastructure Plan (QIP), which was released for public consultation until 9 September 2011. The project is further identified in the *draft Connecting SEQ 2031: An Integrated Regional Transport Plan for South East Queensland (Connecting SEQ 2031)*, as part of the strategic transport network[3].

2.2.1 Location

The NCL originates in Brisbane and traverses along the Queensland coast through the towns and cities of Gympie, Bundaberg, Rockhampton, and Townsville to Cairns.

The proposed 22 km route between Landsborough and Nambour on the Sunshine Coast passes through two tunnels—one to the south of Mooloolah Station (at Rose Road) and one to the south of Eudlo Station (at The Pinch Lane). The route includes six local townships, beginning directly north of Landsborough station passing through Mooloolah, Eudlo, Palmwoods, Woombye, and ending at Nambour station. The project lies within the local government area of the Sunshine Coast Regional Council area.

2.2.2 Components

The project involves constructing a double-track railway, within a corridor that will have capacity for an ultimate four-track configuration to allow for future upgrades. The project is designed to allow trains to have a minimum speed of 80 km/hr, with a desirable 160 km/hr design standard, together with access roads for maintenance and emergency services. The average design speed of the project is 120–140 km/hr.

The project also consists of the following:

- maintenance and emergency service access within the corridor
- reprovision of roads impacted by the project
- grade separation options for the provision of grade separated road/rail crossings
- construction of new stations at Mooloolah, Eudlo, Palmwoods and Woombye
- upgrade of Nambour station facilities, including additional platforms and the upgrade of the disabled access to current standards
- provision of pedestrian access, public transport interchange, car parking and station access

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[1] Department of Infrastructure and Planning, *South East Queensland Regional Plan 2009–2031*, Department of Infrastructure and Planning, Brisbane, 2009, viewed 16 June 2011, www.dlgp.qld.gov.au/regional-planning/regional-plan-2009-2031.html

[2] Department of Infrastructure and Planning, *South East Queensland Infrastructure Plan and Program 2010–2031*, Department of Infrastructure and Planning, Brisbane, 2010, viewed 16 June 2011, www.dlgp.qld.gov.au/seqipp

[3] Department of Transport and Main Roads, draft Connecting SEQ 2031, Department of Transport and Main Roads, Brisbane, 2010, viewed 5 September 2011, www.connectingseq.qld.gov.au/Libraries/Publications/Draft_Connecting_SEQ_2031.pdf

- reprovision of private access to properties whose current access arrangements are affected by the railway corridor
- relocation of public utilities impacted by the project
- tunnels south of Mooloolah and south of Eudlo
- decommissioning of unused sections of the existing railway corridor.

2.2.3 Development stages

Due to the long-term nature of the project, the proponent proposes to deliver the project in stages for detailed design, construction and commissioning of the double-track railway, though timeframes for each stage are not yet determined.

Construction of the project is expected to be staged over approximately six years. Major work programs are expected to include site preparation, worksites and storage, earthworks and tunnel construction, construction of bridges and structures, tracklaying, transport logistics, storage and handling, progressive revegetation and landscaping, construction of new stations and road realignment and temporary sidetracking.

Decommissioning of the existing railway will occur once the new rail has been constructed and is operational. Decommissioning will involve removing the existing railway and dedicating land to alternative uses. In some cases, the land may be remediated and revegetated to provide valuable natural habitat.

The capital cost of the project is currently estimated at $1.7 billion and is expected to create up to 659 jobs over the six-year construction period. Up to 60 jobs will be created over the operational life of the project for train drivers, plus a small number of support and maintenance workers.

2.3 Project rationale

The NCL extends approximately 1661 km, passing through towns and cities to connect Brisbane and Cairns. It serves the needs of commuting trips, longer distance recreational and tourist trips and industry. The NCL is unique in Queensland because of the particular mix of traffic it carries and the wide variation in operating characteristics of the rolling stock involved.

The NCL between Landsborough and Nambour is a multi-use corridor, servicing the needs of local, commuter and long-distance passengers, as well as freight. It provides public transport options for residents along the corridor, and the wider Sunshine Coast region.

The rail alignment along the NCL between Landsborough and Nambour has operational pressures due to the track being a single track, with passing loops only at stations, single platforms at four townships (Mooloolah, Eudlo, Palmwoods and Woombye) and the track being of a winding and undulating nature. The current configuration causes delays to the running time of some passenger services, due to the need for trains to wait in passing loops for express services or services passing

in the opposite direction, and then to turn back to access platforms. There are also numerous open level crossings, occupational crossing and pedestrian crossings along the existing corridor, which can cause delays and safety and road traffic concerns.

The track capacity and horizontal and vertical alignment issues significantly impact upon achievable operating speeds between Landsborough and Nambour, with some services travelling at less than 50 km/hr on many sections of the track.

Sunshine Coast population growth is expected to increase the demand for passenger and tourism rail travel. Increase in demand for rail freight is also likely as a result of growth in container movements through the Port of Brisbane. These factors will challenge the capacity of the existing Sunshine Coast rail infrastructure to support an acceptable level of rail service in the future.

The project is one of several proposed public transport infrastructure projects for the Sunshine Coast region. Once completed, these projects will improve the regional public transport network, and demonstrate flow-on benefits to the local hinterland townships by encouraging new businesses and tourists, and reducing private vehicle trips from the coastal strip to railway towns to access rail services.

The major planning document providing the framework for transport projects in the region is the SEQ Regional Plan, which forms the basis for SEQIPP and draft *Connecting SEQ 2031*. The SEQ Regional Plan is a statutory instrument which operates under the *Sustainable Planning Act 2009* (SPA), which aims to support and manage the region's growth.

These plans and programs, along with the *Translink Network Plan 2010*[4] all identify the long-term strategic objective to improve public transport services across the wider Sunshine Coast Region.

Improving the level of public transport will benefit and contribute to social connectivity by connecting centres and people together, through greater ease of movement. There is also the potential to enhance social connectivity by providing affordable housing in close proximity to the rail stations.

Local benefits to the townships include employment, training and local sourcing of inputs. TMR has committed to focusing the capacity building and benefits on local townships to help sustain these areas beyond the construction phase—for example, by ensuring the project adheres to industry involvement and employment policies.

Within SEQ, 659 direct and 1269 indirect (flow-on) jobs are expected to be created. The supplementary EIS (SEIS section 4.7.5), prepared by the proponent, provides further detail on the number of jobs expected to be created. Although, as the details of the design and construction of the project are still to be undertaken, these figures may change.

[4] The Translink Transit Authority, *Translink Network Plan 2010*, The Translink Transit Authority, Brisbane, 2010, viewed 16 June 2011 http://translink.com.au/about-translink/reporting-and-publications/translink-network-plan

2.4 Project timing

The project is a long-term planning project with the objective of securing the corridor in advance of future phases of the project. TMR proposes the project be operational by 2031 subject to whole-of-government priorities and funding availability. As such, the timeframes for detailed design and construction staging are currently unknown, and will depend on the government's future infrastructure delivery priorities.

It is proposed that the project be undertaken via a phased program of early corridor planning, acquisition of transport corridor, detailed design and construction. Noting the preliminary nature of the information contained in the EIS and SEIS, the environmental effects and mitigation measures will need to be further assessed and defined in the detailed design phase of the project. The EIS documents prepared will feed into this stage.

TMR has acknowledged that several future investigations and studies will need to be completed prior to developing a comprehensive approach to environmental management for this project. It has further acknowledged that additional detailed investigations will be undertaken during the detailed design phase of the project, to support the various development approvals required.

3 Impact assessment process

3.1 Overview

This section of the report details the steps involved in the project's EIS assessment process. For a detailed explanation of the EIS process, refer to www.deedi.qld.gov.au

In undertaking this evaluation, the Coordinator-General has considered the following:

- initial advice statement (IAS)
- EIS
- issues raised in submissions relating to the EIS
- SEIS
- agency advice from:
  - Department of Communities (DOC) (EIS and SEIS)
  - Department of Community Safety (DCS) (EIS and SEIS)
  - Department of Education and Training (SEIS)
  - Department of Employment, Economic Development and Innovation (DEEDI) (EIS and SEIS)
  - Department of Environment and Resource Management (DERM) (EIS and SEIS)
  - the former Department of Infrastructure and Planning (DIP) (EIS)
  - Department of Transport and Main Roads (TMR) (EIS and SEIS)
  - Queensland Health (EIS and SEIS)
  - Queensland Police Service (QPS) (EIS and SEIS)
  - Queensland Treasury (QT) (SEIS)
  - QR National (EIS)
  - Sunshine Coast Regional Council (SCRC) (EIS and SEIS)
- comments and properly made submissions[5] from members of the public.

Table 3.1 shows the steps taken in the project's EIS process.

[5] For a definition of a 'properly made submission', refer to the Glossary on page 57 of this report.

Table 3.1 Overview of EIS process

Date	Process	Report section no.
23 February 2007	Final IAS and request for project declaration received	3.2
6 July 2007	Project declared 'significant project' by Coordinator-General	3.2
10 June 2008	Australian Government determined project is not a 'controlled action'	3.3
5 July 2008	Submission period on draft terms of reference (TOR) commenced	3.4
4 August 2008	Submission period on draft TOR closed	3.4
3 October 2008	TOR finalised and sent to proponent	3.4
15 May 2009	EIS provided to Coordinator-General for evaluation	3.5
13 July 2009	EIS released for public and agency comment (four-week period)	3.5
24 August 2009	Submission period on EIS closed	3.5
9 June 2010	Supplementary information provided to Coordinator-General for evaluation	3.6
30 August 2010	Supplementary project information available for agency comment (six-week period)	3.6
11 October 2010	Submission period on supplementary project information closed	3.6

3.2 Significant project declaration

The Coordinator-General has declared this project to be a 'significant project' under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act). This declaration initiated the statutory environmental impact evaluation procedure of Part 4 of the Act, which requires the proponent to prepare an EIS for the project.

3.3 Controlled action

The Australian Government Minister for Sustainability, Environment, Water, Population and Communities (Australian Government Environment Minister) has determined that the project is not a 'controlled action'[6] under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) (Decision notice EPBC 2008/4151). Therefore, the project will not be assessed under the EPBC Act.

[6] For a definition of 'controlled action', refer to the Glossary on page 57 of this report.

3.4 Terms of reference

Thirty-four submissions were received on the draft TOR for the EIS. Fourteen submissions came from agencies and 20 came from private submitters and organisations.

The TOR were finalised on 6 October 2008 and given to TMR. In finalising the TOR, regard was given to the comments received on the draft document from advisory agencies, members of the public and organisations. Most of the changes to the TOR were a direct or indirect consequence of comments received.

Table 3.2 Summary of submissions received on draft TOR

Submitter	No. submissions	Summary of issues
Advisory agencies[7] • Dept of Communities • Dept of Emergency Services • Dept of Employment and Industrial Relations • Dept of Housing • Dept of Main Roads • Dept of Mines and Energy • Dept of Natural Resources and Water • Dept of Primary Industries and Fisheries • Environmental Protection Agency • Queensland Health • Queensland Police Service (QPS) • Queensland Transport • Queensland Treasury • Sunshine Coast Regional Council	**14**	• Transport network impacts, including impacts on existing road and rail operations • impacts on sensitive environmental areas and habitat • construction timeframes and methods • noise and air quality for nearby residents • economic impacts associated with the amended rail alignment impacting on local towns.
Private submitters and organisations	**20**	• Need to identify the land acquisition process • noise and vibration • property access during construction • cultural heritage values and character in local towns • future land use • impact on existing businesses • consultation processes.
TOTAL	**34**	

[7] Due to machinery of government changes from 26 March 2009 (see *Public Service Department Arrangements Notice (No. 2) 2009*), changes were made to Queensland Government departments referred to in this report. Refer to the list of acronyms on page 55 for more information.

3.5 Review of the EIS

Appendix A of the SEIS and Table 3.3 below summarise the number of public and agency submissions on the EIS.

Table 3.3 Summary of submissions received on the EIS

Submitter	No. submissions	Summary of issues
Advisory agencies	**10**	• Impact to agricultural businesses • construction impacts • rehabilitation of decommissioned corridor to improve connectivity.
Private submitters and organisations	**47**	• Project timing and commitment • long-term planning project with no committed date to commence • impacts on community and housing issues • road changes • construction access and transport impacts • noise, vibration and dust pollution • social impacts and changes in visual amenity of local townships • disturbance to the Federation Walk reserve area, Eudlo • cultural heritage values in new railway stations • further flooding and geotechnical investigations.
TOTAL	**57**	

3.6 Supplementary information on the EIS

The Coordinator-General requested that TMR submit supplementary information to address relevant matters raised in the EIS submissions, to provide corrections and clarifications to the EIS. The Coordinator-General specifically requested the following:

- further detail on results of additional studies
- include a table of all matters raised in the EIS submissions, and provide specific response to each submission and/or a cross reference to where the issue has been addressed in the SEIS
- clarify the timing of project commitment, project construction and/or staging, and timing and relevant entity for assessment and detailed investigation of construction impacts

- clarify the proposed process for appropriate integration of the project, and resultant land use and transport changes to the surrounding region as part of the SCRC planning scheme review process.

TMR prepared a SEIS in response to the request for additional information. The SEIS was forwarded to advisory agencies on 30 August 2010.

Due to the long-term planning nature of the project, advisory agencies were not requested to provide specific advice for inclusion as conditions or recommendations. Instead, they were asked to comment on the adequacy of the SEIS in addressing matters raised by advisory agencies in the EIS and any other advice or comment for the Coordinator-General's consideration in evaluating the project. Comments from advisory agencies closed on 11 October 2010. The SEIS was available for public viewing over this period on both the TMR and Coordinator-General's websites.

4 Project approvals

4.1 Corridor protection

Part 2A of the *Transport Planning and Coordination Act 1994* (Qld) (TPC Act) includes provisions to enable TMR to protect existing and future public passenger transport infrastructure. Section 8E of the TPC Act enables TMR to make a guideline that identifies a future rail corridor, typically by a map. A copy of the guideline is given to the relevant local government(s) and the identified area becomes a 'future public transport corridor' for the purposes of the various schedules in the Sustainable Planning Regulation 2009. This triggers TMR's concurrence agency role in the Integrated Development Assessment System (IDAS) to examine proposed development in the vicinity of the corridor for the purposes of land use and transport integration.

Section 242 of the *Transport Infrastructure Act 1994* (Qld) (TI Act) enables TMR to identify land as 'future railway land' by written notice to the Local Government and by gazette notice. Once gazetted, the identified area becomes 'future railway land' for the purposes of the various schedules in the Sustainable Planning Regulation 2009. This triggers TMR's concurrence agency role in IDAS to examine proposed development adjacent to the corridor for the purposes of protecting the safety and operational integrity of the railway.

TMR has prepared a guideline under section 8E of the TPC Act showing the proposed Landsborough to Nambour rail corridor and has given a copy to SCRC. To date, TMR has not identified the future rail corridor by gazette notice.

Making the guideline under the TPC Act or designating the future rail corridor by gazette notice under the TI Act does not constitute an approval under any legislative or legal framework. To construct the railway within the proposed corridor, TMR must obtain all the necessary approvals under the SPA and/or other relevant legislation.

4.2 Local approvals

SCRC is a recent amalgamation of Caloundra City Council, Maroochy Shire Council and Noosa Shire Council. A new planning scheme is currently being developed.

The SCRC has advised the proposed rail corridor would be incorporated into the new planning scheme. TMR is likely to request that the planning scheme designates the construction and operation of the rail corridor to be exempt from Local Government development approvals.

It is noted that Schedule 4 of the Sustainable Planning Regulation currently makes the maintenance, repair, upgrading, augmentation or duplication of rail transport infrastructure to be exempt from Local Government development approvals. This applies to proposed works in the existing rail corridor.

4.3 State approvals

4.3.1 Development approvals and permits

Whether the rail corridor is designated as exempt development in the SCRC planning scheme or not, a number of approvals and permits would be needed to construct the proposed railway. Given the long-term nature of project, it is not possible to accurately anticipate the likely state approvals required. The Coordinator-General is not expected to be involved in future phases of the project. In accordance with section 35A of the SDPWO Act, this report will lapse four years after its completion. Given the scheduled timing of the project, the requisite approvals to construct and operate the railway are anticipated to be sought by the proponent well after the four-year currency period of this report. Accordingly, no conditions are stated for the project in this report.

4.3.2 Environmental management plans

Overview

This section details the environmental management plans (EMPs) required for the construction, operation and decommissioning phases of the project.

Chapter 22 of the EIS and Appendix C of the SEIS provide draft EMPs for all components of the project. The EMPs become the key reference documents that convert the undertakings and recommendations of the environmental studies into actions and commitments to be followed by the designers, construction operators and subcontractors of the proposed project.

The EMPs specify:

- proposed environmental management strategies, actions and procedures to be implemented to mitigate adverse and enhance beneficial environmental and social impacts
- monitoring, reporting and auditing requirements
- the entity responsible for implementing proposed actions
- proposed timing
- corrective actions if monitoring indicates that performance requirements have not been met.

The EMPs will be further refined and expanded after this report is finalised, during the detailed design phase of the project and through ongoing consultation with the relevant advisory agencies.

Effective implementation of the EMPs will satisfy the commitments made by the proponent in the EIS, supplementary project information, and in correspondence with members of the public and advisory agencies; and will ensure environmental impacts of the project are managed.

The project commitments, made by the proponent during the EIS process and updated during the Coordinator-General's evaluation, are included in Appendix 1 of this report.

5 Environmental impacts

5.1 Introduction

This section outlines and discusses the major environmental effects[8] identified in the EIS, supplementary project information, submissions on the EIS and comments from advisory agencies and other stakeholders. The discussion includes comment on proposals to mitigate adverse impacts.

5.2 Route selection

5.2.1 Overview

In December 2006, TMR completed a scoping study into the potential upgrade of the Landsborough to Nambour rail section along the NCL. Starting from an initial study area (22 km long and 3 km wide), a study focus area was identified within the broad vicinity of the existing rail corridor. This focus area was developed from the project objectives (i.e. a more efficient rail alignment) and a review of baseline constraint information.

This scoping study included an investigation into the potential upgrade and improvement to the existing rail corridor and as a minimum looked to at least maximising its re-use. This identified the following constraints to achieving the project objectives, if the existing corridor was to be upgraded:

- the existing corridor has too many bends to achieve desired speeds without substantial curve easings
- many sections of the existing corridor are too steep to achieve the desired speeds
- the existing corridor could accommodate two tracks in some but not all sections, and is too narrow to accommodate additional tracks in future.

The curve easings and corridor widening work required to meet current design standards would mean that the land requirements of the upgrade alternative are comparable to those of an 'offline' upgrade. A number of construction constraints were also identified, associated with working in the proximity of existing railway operations—such as service interruptions and safety issues.

The scoping study identified several route options within the focus area. These options were configured to meet technical design objectives and to respond to constraints identified through community feedback and technical investigations. In most cases, route options were chosen to make it possible to use new sections of track mixed with old sections of track.

[8] For a definition of 'environmental effects', refer to the Glossary on page 57 of this report.

The Landsborough to Nambour Route Identification Study (March 2008) was commissioned to identify a preferred route from the various options. The study had the following aims:

- meet essential engineering factors (e.g. grade, bend curvature, geotechnical requirements and flood immunity)
- minimise environmental effects (e.g. avoid significant vegetation or fauna habitat, protected areas, wetlands)
- minimise property and social impacts, including noise and cultural heritage considerations
- identify opportunities where the rail upgrade could bring land use or transport network benefits
- identify a realistic upgrade solution that is affordable and able to be constructed while maintaining an operational rail line.

Government agency and community input was considered in the decision-making process. Stakeholder feedback was sought through:

- community information sessions held in November and December 2007
- community values and transportation survey—1006 responses
- written submissions—453 submissions
- consultation with Local Government officers and the (former) Environmental Protection Agency.

Key issues and themes from submissions included:

- concerns about social and property impacts of a new corridor
- significance of the local environment, national parks and habitat areas
- preferences for particular route alignments (particularly through Mooloolah and Eudlo)
- flooding concerns
- existing road network issues (i.e. level crossing at Mooloolah, low height rail bridges and concerns about road overpasses).

In April 2008, TMR announced the preferred route for the Landsborough to Nambour rail upgrade project. The detailed rationale for the preferred route option has been documented in the route identification study report. The project objectives have been generally achieved and the corridor enables significant straightening and re-grading with sufficient width for four tracks. Design speeds of 120–140 km/h are predicted. Station locations are generally maintained close to the existing locations in the communities of Landsborough, Mooloolah, Eudlo, Palmwoods, Woombye and Nambour.

Community feedback obtained during the route identification study was considered in preparing the preferred route. Further minor refinements of the route were made

following the EIS consultation, as reported in the SEIS. In many cases, the route was chosen to avoid and minimise direct property impacts and impacts on areas of high conservation value such as Dularcha National Park and the Eudlo Creek National Park. Issues associated with wetlands, waterways and floodplain areas were broadly addressed; however, the EIS acknowledged that further refinement at a local scale would be needed during detailed design stages.

5.2.2 Stakeholder comments and proponent response

Overall, the corridor study methodology was well accepted by submitters and relatively little comment was received on the choice of the preferred route.

Two private submissions suggested that the upgrade project should be abandoned in favour of a high speed corridor in the vicinity of the Bruce Highway. The submissions noted the problems associated with finding a route through difficult terrain and floodplain areas and proposed that the existing railway be maintained for local and/or tourism uses only.

In response, the EIS noted that the Landsborough to Nambour rail corridor provides a strategically important function—not only for its role as a link in the NCL—but as an important service for communities within the corridor and adjacent areas. The EIS showed that the identified route can satisfactorily meet speed and efficiency objectives without the expense and disturbance associated with another corridor.

A submission from SCRC indicated that the route selection process could have been improved by updating baseline information on flooding and geotechnical constraints. In particular, the information relating to a 100-year average recurrence interval flood did not include an estimate of potential climate change factors. The proponent has committed to updating flood hydrology and geotechnical investigations during the detailed design stage. A clearer understanding of the potential climate change effects on flooding would be known at that time.

Several submissions discuss the social impact of the rail corridor passing through the middle of townships, causing segregation and traffic issues. The route selection process sought to maintain the existing connection through, or close to, town centres and was not able to fundamentally address segregation issues. The rail corridor through towns is generally maintained close to its existing locations in order to reduce the direct property impacts that would be associated with a new urban corridor. The corridor alignment also allows station locations to be retained close to the existing sites, thereby keeping their relationship with commercial centres. Township segregation impacts are discussed further in section 5.4.

The DERM submission suggested that the section immediately north of Woombye should be kept within the existing corridor to avoid the need to clear endangered native vegetation. A realignment here could also reduce the westerly extent of the relocated Woombye station and therefore the associated impact on community facilities including soccer fields and a club house. The EIS noted the opportunity of using the decommissioned railway land at Woombye for community space, relocated soccer fields and a park and ride facility.

5.2.3 Coordinator-General's conclusion

The methodology developed for the Landsborough to Nambour route identification study is considered appropriate and sufficiently comprehensive to decide on a preferred route for the proposed upgrade project. Accordingly, the study findings are endorsed.

The proponent's commitment to update baseline constraint data prior to detailed design is supported. This will ensure any changes to key environmental factors can be considered as part of the project's implementation.

Although the study methodology sought to minimise impacts on communities and areas of high conservation value, the project is likely to result in some unavoidable adverse impacts. The EIS identified a number of SMAs. These are areas where a concerted effort is needed to manage impacts and maintain pre-defined special values into the future. Further discussion of specific issues and SMAs are included in the following sections of this report.

The proponent has committed to establishing a joint project planning working group with the SCRC. This group will consider land use planning matters affected by the project and would further refine specific management actions within SMAs.

5.3 Nature conservation

5.3.1 Clearing native vegetation

Overview

Much of the project area is characterised by land cleared for agriculture/horticulture and small rural townships. Within the southern section, a significant proportion of the proposed rail corridor includes remnant native vegetation classified as 'regional ecosystem', as defined by the *Vegetation Management Act 1999*. These vegetated areas are typically concentrated along creeks, ridge lines and within protected areas (two national parks). The project also affects areas classified as 'high value regrowth' vegetation, as defined by the VMA Regrowth Vegetation Code[9].

The proposed rail corridor would require clearing of an estimated 22 hectares (ha) of remnant vegetation affecting 20 Regional Ecosystems (REs). This would comprise two endangered REs and nine 'of concern' REs. Clearing of approximately 30 ha of 'high value regrowth' vegetation would also be required.

The EIS noted that two locations within the project area stand out as having particularly high biodiversity value. These are the Dularcha National Park and the higher country between Mooloolah and Eudlo, known as the Pinch Lane area. These and other areas may contain plants protected under the *Nature Conservation Act*

[9] Department of Environment and Resource Management, *Regrowth Vegetation Code—On freehold and Indigenous land and leasehold land for agriculture and grazing—version 1*, Brisbane, 2009, viewed 16 June 2011, www.derm.qld.gov.au/publications/docs/p203735.pdf

1992 (an estimated 20 plant species potentially occur in the study area) and/or comprise important habitat for native fauna.

Notable protected flora species occurring within the project area include:

- large-leaf chain fruit (*Alyxia magnifolia*)—listed as rare under the NCA
- lesser swamp orchid (*Phaius australis*)—listed as endangered under the EPBC Act.

Mapping associated with the State Planning Policy 2/10: Koala Conservation in South East Queensland,[10] shows much of the vegetated areas in the vicinity of the southern section of the rail corridor to be classified as 'medium value bushland'.

The proponent has committed to a policy of 'no net loss of biodiversity' in the region. This policy requires that appropriate compensatory measures would be undertaken to address the impacts of the project on the project area.

The EIS noted a number of potential benefits for flora and fauna biodiversity of the region associated with the rehabilitation of decommissioned railway land. In particular, the proposed tunnel through the Pinch Lane area provides for enhanced habitat connectivity in an area that is currently dissected by the railway. This area is one of the key bioregional wildlife corridors in the region. Wildlife overpasses, underpasses and bridging structures would be incorporated into the final design of the rail corridor in key habitat areas to reduce the impacts that would be created by fragmentation of habitat and reduced corridor functionality.

Stakeholder comments and proponent response

A number of submitters commented on the project's likely requirements for vegetation clearing and the need to avoid and minimise impacts. Specific comments included:

- the project should avoid all clearing within Federation Walk—a Landcare-funded tree planting project alongside the existing rail line at Eudlo
- the project should avoid impacts to a remnant stand of piccabeen palms at Kolora Park, Palmwoods (the palms are of local heritage and cultural significance)
- given the significance of wildlife corridors in the Pinch Lane area, preference should be given to tunnelling instead of cut and cover construction where possible
- the construction methodology should ensure every effort to minimise the clearance of non-listed habitat such as old growth habitat trees, trees with nesting hollows etc.

The proponent has committed to consider all the above matters during the detailed design stage of the project. Key areas have been included as SMAs to better develop strategies to ensure impacts are avoided or minimised.

[10] Department of Environment and Resource Management, State Planning Policy 2/10: Koala Conservation in South East Queensland, Department of Environment and Resource Management, Brisbane, 2010, viewed 16 June 2011, www.derm.qld.gov.au/wildlife-ecosystems/wildlife/koalas/koala_crisis_response_strategy/state_planning_policy.html

A preliminary assessment of vegetation offset requirements was provided in the EIS. The proponent has estimated that 27.5 ha of offsets would be needed for the proposed clearing of remnant vegetation and 61.5 ha of 'exchange area' for the high value regrowth. Additional offsets may be required for clearing koala habitat, protected areas and other areas of high biodiversity value. Detailed assessment of actual impacts associated with vegetation clearing and habitat disturbance will be determined as part of the design stage of the project. This will include review of updated mapping and regulatory/offset policies that apply at the time.

The EIS acknowledged that it is not possible to ensure the safe local migration of fauna species at the same rate that occurs at present, because the wider rail corridor would represent a more significant barrier to movement. Accordingly, to meet the no net loss policy, habitat compensation measures may be required.

5.3.2 Waterways and wetlands

Overview

The project is located within the three catchments of Pumicestone, Mooloolah River and Maroochy River. The proposed rail corridor crosses more than 50 waterways including several major waterways that support remnant riparian rainforest, namely: Addlington Creek, South Mooloolah River, Mooloolah River, Eudlo Creek, Paynter Creek and Petrie Creek. An estimated total of 5.32 hectares of riparian habitat would be cleared or disturbed by the project.

Four affected waterways have been identified as supporting the giant barred frog (*Mixophyes iterates*), listed as endangered in Queensland under the NCA and nationally under the EPBC Act. In addition, the tusked frog (*Adelotus brevis*) and the wallum froglet (*Crinia tinnula*) were recorded during field investigations. Both are listed as vulnerable under the NCA.

The EIS discussed a range of measures to avoid and minimise impacts on riparian habitat and water quality and the proponent has committed to the following mitigation actions:

- where possible, waterway crossings to keep existing alignments and existing structures to be widened, rather than establishing a new structure
- using bridges, rather than culverts, at major waterway crossings to minimise the need for in-stream works. In turn, bridge works to be designed to minimise impacts on riparian and in-stream environments
- undertaking in-channel works during winter and early spring (the 'dry' season)
- construction methods to avoid removing sediment or other bed material from a waterway
- implementing erosion and sediment control and weed control measures before commencing construction
- restoring worksites after completing works, and replanting riparian vegetation in areas not required for railway operations.

Stakeholder comments and proponent response

Overall, the proponent's approach to managing impacts on aquatic ecosystems was generally well accepted by submitters and very little comment was received on specific matters. Several submissions emphasised the need to carefully manage construction works to avoid key riparian habitat areas, particularly those associated with the giant barred frog. Additionally, it was noted that increased scrutiny should be given to monitoring and compliance of environmental management commitments through the construction phase.

One submitter suggested that the wetland area north of Palmwoods (the Spackman Lane area) is a significant habitat area and wildlife corridor and the proposed route should be realigned to avoid impacts. The proponent noted that this area was investigated during preparation of the preferred route. The SEIS reported that the alignment was chosen in recognition of both environmental and property impacts and also noted that the railway would be elevated on a structure through this area.

5.3.3 Coordinator-General's conclusion

As discussed in section 5.2, environmental factors were considered when selecting the preferred route. As an example, the proposed crossing of the Mooloolah River was specifically chosen to avoid areas of remnant riparian vegetation to minimise potential impacts on aquatic species including the giant barred frog. In some cases, factors such as engineering constraints and avoiding direct property impacts were primary considerations.

The project traverses a significant area of remnant vegetation and areas supporting a diverse range of terrestrial fauna, including some species of conservation significance. The highest potential impact would be within the southern section of the proposed route from Landsborough to Palmwoods. Due to the linear nature of the rail infrastructure, it is not possible to avoid all areas identified as valuable habitat. Similarly, it is not possible to avoid crossing waterways and avoid impacts on riparian and in-stream habitat.

It is noted that the proposed clearing/thinning of the revegetated area, known as Federation Walk at Eudlo, is a contentious issue that attracted a number of EIS submissions. As described in the EIS, limited disturbance is likely to be necessary for safety reasons. A compensating factor is the opportunity for revegetating decommissioned railway land contiguous with Federation Walk.

The proponent's commitment to adopt a policy of no net loss for biodiversity in the region is acknowledged. This includes building fauna-friendly features where possible and providing offsets for native vegetation clearing and other biodiversity impacts.

The proposed approach of addressing key potential impacts within SMAs is supported. SMAs include:

- national parks:
  - Dularcha National Park

  - Eudlo Creek National Park
- tunnels:
  - The Pinch Lane
  - Rose Road
- waterways:
  - Addlington Creek (north)
  - South Mooloolah River
  - Mooloolah River
  - Eudlo Creek
  - Paynter Creek
  - Petrie Creek.

5.4 Property and land use

5.4.1 Overview

As discussed in section 5.2, implementing the project in accordance with its primary objectives (i.e. a straighter, more efficient railway) can not avoid direct property impacts. The proposed corridor broadly follows the existing route within urban areas; however, to accommodate up to four tracks, it would be wider and realigned in some sections (notably Eudlo and Palmwoods). Outside urban areas, the proposed corridor departs significantly from its existing alignment over a large proportion of the route, resulting in direct impacts on properties that are currently not located in its vicinity. Direct property impacts would include the loss or partial loss of some properties, possible land fragmentation and disruption to some commercial and agricultural businesses.

A total of 162 properties (excluding land already leased for railway purposes) are affected by a land requirement for the corridor and associated road realignments. This covers an estimated 147 ha in total with approximately 64 ha located within urban areas. The land requirement has been calculated based on a five-metre offset from the edge of the earthworks required for project construction. The proposed rail corridor would be approximately 60 metres wide.

The current land tenure potentially affected by the project includes:

- 145 freehold properties and two leasehold properties
- 34 sections of the existing NCL
- two national park properties (Dularcha National Park and Eudlo Creek National Park)
- three State land properties
- seven reserve land properties

- two properties identified as rail use, but not part of the existing rail corridor.

The privately owned land includes the following (categorised by general land use planning designations):

- 37 residential properties
- 14 rural residential properties
- 27 commercial/industry/business properties
- 68 rural properties
- three community purpose properties
- four properties identified as open space, conservation or waterways.

Approximately 50 of the rural zoned properties affected by a land requirement for the project have been identified as being actively used for grazing, crops or horticultural purposes. The EIS found that agricultural uses with a relatively high economic return for a given area (such as orchards or cropping) would be largely avoided by the proposed corridor. The large majority of impacts on agricultural areas would be confined to land currently used for grazing. The effects of the rail corridor on rural properties potentially include:

- the direct loss of productive land or good quality agricultural land (GQAL)
- the loss of improvements such as established trees, buildings and infrastructure
- interruption to operations or loss of access to parts of the property if the rail corridor dissects the property.

The EIS noted that minimising the impacts to GQAL was one of the considerations when selecting the preferred route.

The project would impact on a number of community and recreational facilities requiring relocations and/or other mitigation actions. The EIS discussed proposed measures to replace and enhance community lands and recreation areas lost during construction, in particular in Mooloolah, Eudlo, Palmwoods and Woombye. Table 4.3.4 of the SEIS outlined the proponent's proposed mitigation actions to be undertaken as part of the detailed design of the project. In some cases, decommissioned railway land could be used for relocated facilities—approximately 6 ha of surplus land is to be made available for re-use.

The project would cause the loss and/or relocation of several existing businesses affected by the proposed rail corridor. The most affected towns would be Nambour (mainly industrial uses) and Mooloolah (town centre businesses).

The EIS nominated the most significantly affected properties to be more closely managed within SMAs. Preliminary mitigation proposals for SMAs were discussed in the EIS and further refined in the SEIS. These would form the basis of agreed mitigation actions to be finalised in the detailed design stage of the project.

5.4.2 Stakeholder comments and proponent's response

A key issue, raised by private EIS submitters and the SCRC, was the potential localised community impacts to the railway townships, resulting from the displacement of residential properties, commercial, recreational and community facilities.

The EIS noted that the proponent is obliged to follow Queensland Government legislation and guidelines for the acquisition of properties affected by a land requirement for the project. The current requirements for the acquisition process are prescribed by the TPC Act and the *Acquisition of Land Act 1967*. The acquisition process includes compensation for owners of properties affected by a land requirement.

In addition the proponent has committed to:

- ensuring regular communication with land owners and relevant stakeholders and timely notification of planned construction activities
- making arrangements to maintain access between severed portions of properties wherever possible, determining the most appropriate solution in consultation with the landowner during the detailed design stage.

Several submitters indicated that the uncertain timing of the project may affect individual residents and business operators. The project's schedule indicates that land acquisition would commence around one to two years prior to construction. This affects residential and housing decisions, property market and business planning in the region. The EIS noted that affected property owners may be eligible to apply for a 'hardship' acquisition prior to formal resumptions being commenced. These acquisitions would be conducted following the framework set out by the State's Hardship Acquisition Policy.[11] It is understood that the proponent is currently liaising directly with affected property owners on this matter.

Several EIS submitters raised concerns associated with the rail corridor passing through the middle of townships causing ongoing segregation and traffic issues. Although the proposed corridor generally follows the existing route within urban areas, submitters were concerned that the project does not address existing problems and could potentially increase the level of segregation. This appears to be most strongly felt in the township of Mooloolah, where a number of submitters believe the railway line significantly divides the town activities and its environment.

The EIS found that the project would provide a number of benefits through route realignments and by constructing new grade-separated crossings in several locations. In addition, the EIS noted that the project offers opportunities to offset social impacts of the railway in the townships, by redeveloping surplus land and other actions. In particular, SCRC's comments on the project indicate that realigning

[11] Department of Environment and Resource Management, Acquisition Hardship Policy, Department of Environment and Resource Management, Brisbane, 2010, viewed 16 June 2011, www.derm.qld.gov.au/services_resources/item_details.php?item_id=100289

the rail corridor through Palmwoods has significant potential to revitalise the town centre.

Through the lead up to detailed design and construction, there is an opportunity to consider land use decisions around the future rail corridor to address current concerns. The SCRC has stated that town segregation issues are to be considered when developing local plans, as part of preparing a new planning scheme. The proponent has committed to collaborate with the SCRC to undertake local planning for affected town centres.

In responding to stakeholder concerns, the EIS acknowledged that the economic impact on the township of Mooloolah, potentially caused by the project, could be relatively significant. Although the proposed rail corridor passes through the centre of the town near its current location, it would be wider and require several existing businesses to be relocated. The EIS acknowledged that this issue needs to be carefully managed to minimise impacts to businesses and to improve access in the town centre for pedestrians, cyclists and cars. The EIS noted the possibility that surplus railway land to the west of the current station may be available to accommodate future commercial uses.

In Nambour, the proposed rail corridor affects residential, commercial and industrial land in several locations, including Colless Lane and Price Street. The existing businesses in these areas are understood to be service industries and light industrial uses, each with a relatively small floor area. SCRC advise that approximately 8000 square metres of land would be lost and that suitable alternative sites may be difficult to locate. The EIS found that, although the directly affected businesses should have potential to relocate to existing industrial land within Nambour, a review of the availability of industrial zoned land should be undertaken.

The proponent has committed to work toward planning outcomes that minimise the potential economic impacts on the affected town centres.

Although acknowledging stakeholders' concerns about local social and economic impacts, the EIS highlighted a range of potential economic benefits of the project to the region including:

- improvements to the overall public transport network in the region
- savings in time taken to travel for commuters, local passengers, long distance tourist trips and freight
- savings in private vehicle operation costs and a reduction in road accidents
- enhancement of local business opportunities, and employment clusters—in particular, encouraging the economic development and the economic function of Nambour as a major activity centre
- a total of $4.57 billion of output generation into the Queensland economy (including SEQ) over the entire construction period (seven years) and a total of 2786 jobs on average at any point in time.

5.4.3 Coordinator-General's conclusions

The proposed Landsborough to Nambour rail corridor passes through established townships and rural areas and involves significant changes of alignment in a number of locations. In considering the proposed corridor, the proponent has taken appropriate steps to lessen the impacts to the surrounding community where possible.

It is clear that the project would result in some unavoidable impacts on communities associated with the resumption of property, construction impacts and potential changes to the demographics of the affected towns. Similarly, it is clear that the project would provide a range of social and economic benefits to the region including improved public transport and opportunities to redevelop surplus railway land in town centres.

It is considered that the direct property impacts would be addressed appropriately and in a timely manner in accordance with government policies relating to land acquisition. In addition, the proponent has committed to continued engagement with affected property owners and to work with SCRC in identifying suitable locations for relocating community facilities where required.

A lengthy time delay (likely to be in excess of 15 years) is likely to create a sense of uncertainty for some sections of the affected communities. The potential social and economic impacts of the upgraded rail corridor passing through urban areas were discussed at a relatively high level in the EIS and require further attention. The EIS identified the affected sections of town centres as SMAs and proposed a number of mitigation actions, although these can only be considered to be preliminary due to the long-term planning nature of the project.

It is clear that the proponent has a significant role to play in developing local plans that maximise opportunities for the project to promote enhanced social cohesion and economic activity. A joint planning collaboration with SCRC is considered to be highly desirable and it is noted that the proponent has committed to establish a working group and meet regularly to consider local planning matters in the lead up to the project's implementation. It is further noted that the proponent has committed to ensure all potentially affected communities receive timely advance notice of construction activities.

5.5 Landscape and visual amenity

5.5.1 Overview

As background, the EIS considered the broad landscape values that were developed for the SEQ Regional Plan. In that study, survey data of scenic preference and visual exposure were used to predict the scenic value of sites in SEQ. The data indicates that large sections of the project area between the railway townships and along the existing rail corridor are considered to have a high scenic amenity profile.

The visual amenity assessment, undertaken for the EIS, evaluated the impacts of the proposed four-track corridor and discussed the difference between the two- and four-track configuration. The EIS identified 25 representative viewpoints in locations that represent aspects from a range of viewers (such as vehicle users, recreational users and residents) where potentially perceivable changes in view may occur. The overall assessment concluded that the visual impact was considered to be moderately adverse from the viewpoints assessed.

The new rail corridor is assessed to have relatively high visual impacts in some sections outside urban areas, where extensive vegetation clearing and/or new bridge crossings are required. Three locations were identified as high adverse residual impacts (after mitigation), as follows:

(1) Rose Road, Landsborough, looking south-west

(2) Rose Road, Landsborough, looking north-east

(3) Woombye Pony Club.

The EIS acknowledged that assessment of visual amenity is a subjective issue and, for that purpose, two landscape planners were consulted to build consensus and limit subjectivity.

5.5.2 Stakeholder comments and proponent's response

Several EIS submitters were concerned with the potential impact of the project on private properties—some whose existing views of rural scenery would be affected by railway infrastructure. Visual amenity was also raised as a concern by a number of submitters where screening vegetation between the current railway and properties would be lost as a result of the new route alignment.

The EIS acknowledged that the project would permanently alter the visual amenity of some areas. Several mitigation measures are proposed, primarily using landscaping to provide screening and designing structures to minimise visual impact. The proponent has committed to engage directly with the community and the SCRC to define visual design guidelines for the detailed design phase of the project. Specific mitigation could include:

- landscape planting both within the railway reserve and outside the reserve
- integrating landscaping with noise barriers to reduce their visual impact
- vegetation and other measures to provide screening to individual properties.

5.5.3 Coordinator-General's conclusions

It is clear that the project would have significant impacts to visual amenity in some locations, from some viewpoints. Most notable would be locations where the proposed route departs substantially from the existing alignment.

It is considered that an appropriate level of assessment has been undertaken to assess potential impacts to landscape values and visual amenity. The proponent's

commitment to comprehensive mitigation measures, including developing visual design guidelines in conjunction with affected communities, is supported.

Overall, it is considered that the proposed mitigation measures would lessen the impacts of the new railway infrastructure on local residents. However, it is noted that the full effect of landscape mitigation may take some years to be achieved due to the time taken for planting to reach a semi-mature stage. It is also noted that, in some cases, screening measures have the potential to greatly influence the residual impact, while in others there may be only limited potential.

5.6 Roads and road network

5.6.1 Overview

The proposed rail corridor alignment would necessarily require alterations to components of the road network. A number of new bridge structures would be built as part of the project, replacing existing substandard crossing points. The project also includes provision for new grade-separated crossings to replace existing level crossings in Landsborough and Mooloolah, although the timing of their construction has not been decided.

During construction, the project will cause additional traffic loads, temporary road closures and/or detours. The EIS noted that the condition of the roads connecting the railway townships to each other and the Bruce Highway are of varying quality and often traversing areas of steep terrain and/or floodplain. The EIS did not estimate the full extent of impacts as the detailed construction methods, predicted volume of construction traffic and staging have not been determined.

The EIS anticipates that some properties may lose access to roads that they use for primary access. Temporary roads or alternative routes would need to be provided.

5.6.2 Stakeholder comments and proponent's response

A key concern raised by a number of submitters was the timing of the proposed grade-separated crossing in the Mooloolah town centre. Several submissions describe the effect of the existing open level crossing in terms of safety concerns and its contribution to town segregation. Given the long-term planning nature of the project, the proponent is unable commit to specific timing, although the necessary land will be preserved for road alignments. SCRC recommended that specific triggers should be decided for the timing of the overpass works. The proponent has committed to continue discussions with SCRC on this matter as part of the joint local planning activities for the project.

SCRC raised concerns of the implications of construction traffic on the local road network, with particular concerns relating to haul routes and traffic impacts. SCRC also requested involvement in developing traffic management plans. A preliminary traffic and transport management plan has been prepared in the draft EMP for the project. The proponent has committed to:

- developing a road use management plan for construction vehicles, which will include traffic management measures for local roads. This would be developed in consultation with SCRC.
- liaise with SCRC and DCS so that emergency access and response times are not jeopardised during temporary road closures or diversions.

5.6.3 Coordinator-General's conclusions

The construction of the proposed railway upgrade would directly impact local communities due to the necessary changes to the road network, construction traffic and altered noise conditions.

Further assessment would be required, as part of the detailed design of the project, to determine construction vehicle movements and their effects on the local road network over the various stages of the works. This would include an understanding of the sources of fill and spoil re-use. It is also important to ensure the capacity and suitability of the road network is assessed to identify deficiencies for construction purposes.

It is noted that the proponent is unable to commit to specific timings for the proposed grade separations at Landsborough and Mooloolah. However the proponent's commitment to continue engaging with the SCRC and community representatives, to determine timing and need for grade separation, is encouraged.

5.7 Noise and vibration

5.7.1 Overview

Overall, the project area is assessed to be a generally low-level noise environment. Noise monitoring within urban areas indicates that acoustic objectives are currently being met in most residential locations. This is based on planning levels derived from the *QR Code of Practice for Railway Noise Management*.[12]

The EIS included a noise assessment to predict the impact of the project on future operational noise levels compared to the current environment. These predictions have been based on projections of future train service levels and have assumed the use of new generation locomotives which are anticipated to have lower noise levels than current trains.

Overall, the EIS predicted that the residential impact related to noise and vibration is expected to be manageable, although moderate impacts are predicted in some cases. The realignment of the proposed rail corridor is likely to reduce existing operational noise through less braking and 'wheel squeal' on tight bends. The

[12] Queensland Rail, *QR Code of Practice for Railway Noise Management*, viewed 16 June 2011, QR National, Brisbane, 2007, www.qrnational.com.au/Corporate/OurCommitment/Environment/Documents/Noise_Code_Practice_2007.pdf

proposed use of continuous welded tracks would also reduce operational noise levels.

The EIS identified where noise barriers are likely to be required in order to comply with planning criteria. Further assessment and mitigation proposals would be prepared as part of the detailed design stage of the project.

Detailed construction noise and vibration predictions were not included in the EIS and would be undertaken once a construction methodology has been determined. The proponent has committed to implementing measures in an EMP to ensure that noise and vibration are maintained within acceptable limits during construction.

5.7.2 Stakeholder comments and proponent's response

Some private EIS submitters had concerns about the impact of vibration and noise levels on local residences and businesses during the construction and operational phases of the project. Queensland Health's submission recommended that if evening or night-time activities occur, noise levels should be managed so that the sleep disturbance criteria can be achieved. SCRC noted that noise barriers should be only used as a last resort as they potentially add to the segregation of townships.

In response, the SEIS found that solid barriers would be the only practical mitigation measure in some cases. The proponent has committed to further noise assessment and investigation work during the future design phase of the project, including consideration of other treatments such as resilient rail systems. Additionally, the design of noise barriers (including methods for noise mitigation on bridge structures) would consider the aesthetics of future urban design within the townships.

The SEIS made the point that the anticipated levels of operational and construction vibration from railways rarely causes building damage in structurally sound buildings, especially on elevated sections of railway. The proponent has committed to undertake pre-construction building surveys on properties potentially susceptible to vibration damage from construction of the railway. Vibration monitoring would be employed during construction to ensure that works do not cause sustained vibration levels to cause unacceptable loadings.

5.7.3 Coordinator-General's conclusions

The preferred corridor selection process for the proposed railway upgrade did not seek to avoid urban areas along the route; therefore, ongoing noise and vibration impacts would be unavoidable. While the project will bring about an increased number and frequency of trains, which would increase operational noise, other aspects of the project (such as the improved track grade and alignment) would help to reduce noise levels.

The noise assessment undertaken in the EIS, and the proposed approach to mitigation, is considered appropriate given the long-term planning nature of the project. It is noted that the proponent has committed to implementing noise and vibration control measures in an EMP to ensure that levels are maintained within acceptable limits.

6 Conclusions and recommendations

The Coordinator-General is satisfied that the EIS process for the Landsborough to Nambour Rail project meets the requirements for impact assessment in accordance with the SDPWO Act, to the greatest extent practicable for a long-term planning project of this nature.

The EIS process provided sufficient information to allow an informed evaluation of the project's potential environmental impacts, as they are currently known. Certain matters investigated in the EIS and SEIS will require further investigation and/or review at a later date prior to the project's detailed design stage to support the various development approvals required. The EIS documents prepared will feed into this stage.

Based on the information considered, the Coordinator-General is satisfied that the methodology and findings of the route identification study are appropriate. It is noted that TMR has commenced the process to protect the proposed corridor in accordance with provisions of the TPC and TI Acts.

The project would provide significant social and economic benefits for the region and the state by improving the service and efficiency of public transport and freight transport on the NCL.

This report identifies that some potential local adverse impacts on the natural, social and economic environment would be unavoidable as a consequence of the project's construction. The Coordinator-General is satisfied that the proponent's commitments to address project related impacts (set out in Appendix 1) are appropriate.

The proposal is relatively unusual (in terms of a declared significant project) in that the construction is not intended to follow shortly after the EIS is completed. The Coordinator-General acknowledges that the consultation undertaken for the planning phase of the project would have little relevance for affected communities in the future when construction commences. It is therefore critical that the proponent continues its ongoing role to work with communities and owners/occupants of affected properties as specified by the proponent's commitments.

The Coordinator-General is not expected to be involved in future phases of the project. In accordance with section 35A of the SDPWO Act, this report will lapse four years after its completion. Given the scheduled timing of the project, the requisite approvals to construct and operate the railway are anticipated to be sought by the proponent well after the four-year currency period of this report. Accordingly, no conditions are stated for the project in this report.

The Coordinator-General recommends that the Landsborough to Nambour Rail project should proceed.

Copies of this report will be issued to:

- the proponent, TMR
- the local government authority, SCRC

- relevant Members of Parliament

A copy of this report will also be available on the Department of Employment, Economic Development and Innovation's website at www.deedi.qld.gov.au

Appendix 1. Proponent's commitments

The following proponent commitments are based on those outlined in the EIS and the SEIS and have been updated in conjunction with the Coordinator-General's evaluation of the project. The proponent for the purpose of this document is the Department of Transport and Main Roads (TMR).

1.1 General

As the project progresses, TMR will update information gathered for the EIS, and any key changes will be identified. This may result in a need for further investigations into specific matters in the future. In addition, all relevant design standards at the time of detailed design will be used.

Should there be a substantial change to the project's current design, TMR will notify the Coordinator-General and an evaluation of the proposed change will be undertaken under Section 35C of the *State Development and Public Works Organisation Act 1971*. If required, further community consultation would be sought.

A similar change process would apply if the project's timing is brought forward to within four years of the Coordinator-General's evaluation report.

TMR will establish a regular review process, and communicate outcomes to the Coordinator-General.

Should any changes to the design or surrounding environmental conditions affect the nature of the environmental impacts and proposed management regime, TMR will consult with the Australian Government to determine where there is a need to re-evaluate the referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Project staging

TMR will continue to refine construction timing and staging details and this is expected to be iteratively defined in future State Government planning documents and updates such as the draft *Connecting SEQ 2031.*

TMR will continue to work collaboratively with the Sunshine Coast Regional Council (SCRC) to identify potential benefits from bringing forward elements of the project (such as road upgrades). This will be further defined through discussions between the proponent and SCRC.

Construction may be undertaken in stages, based on funding and land use decisions which may be made in future. These will require application of the environmental, social, and cultural heritage management and protection measures outlined in the EIS and the SEIS, and subsequent management documentation.

TMR will work with relevant agencies to identify any opportunities for early works packages that could minimise disruption to the road network.

1.3 Legislation, policy, plans and design standards

TMR will comply with all relevant legislation (including future acts that may come into force prior to future project phases) and has controls in place to ensure all legislation is adhered to. Further legislative approvals will be required beyond the EIS approval, as documented in section 3.1.5 of the SEIS.

TMR will design for flood immunity and vehicle clearance, consistent with road design standards current at the time of detailed design.

1.4 Stakeholder engagement

TMR will establish a joint project planning working group with SCRC. The group will meet regularly (minimum twice yearly) to discuss issues related to the project including, but not limited to:

- timing of, and potential collaboration on, additional design studies
- land use planning and re-use of surplus/decommissioned rail land
- a review of the availability of industrial zoned land in Nambour
- traffic management and changes to local road networks (temporary and permanent)
- station design, end of trip facilities and integration with active transport and other transport modes
- impact to the Landsborough Sports Ground and Recreational Reserve
- reprovision of impacted community and sports facilities and open space
- future operation and maintenance of infrastructure elements (such as drainage, fencing etc.)
- securing and rehabilitating offset areas
- relocating council infrastructure, including integration with capital works programs and plans.

TMR will continue to work with other relevant stakeholders (current and emerging) during future planning and detailed design phases of the project. These stakeholders, and their issues of interest, include:

- QR Limited—current and future rail operations, design standards
- Translink—end of trip facilities, park and ride, and integration with other transport modes
- Department of Environment and Resource Management (DERM)—rehabilitation of sections of surplus rail land for incorporation into adjoining areas of National Park

- Department of Communities—re-using surplus rail land for recreational purposes and relocating community facilities
- Landsborough Primary School—impact and reinstatement of access to sports fields and car parking
- Mooloolah Pony Club—impacts to Pony Club operations
- Palmwoods Bowls Club—maintaining access to car parks during construction, dust, noise and amenity issues during construction and operation
- sports and community groups throughout the project area, where facilities or access to facilities is impacted by the project
- utility providers (i.e. water, power, gas)—relocating services that will be impacted by the project
- landowners (private and government)—full or part property acquisition (through hardship applications or the eventual formal resumption process), severance issues, plans for minimising visual and noise impacts, surveys including noise and vibration assessments
- adjacent/adjoining landowners—issues including landscaping, fencing, access, noise treatments and other design measures.

1.4.1 Ongoing community engagement

TMR will:

- prepare future plans and materials to communicate with the broader community regarding project progress
- continue to consult with landowners from whose property there is a potential land requirement, adjacent landowners and the broader community regarding designs for stations, relevant bridges (i.e. Palmwoods) and relevant noise barriers
- when construction timing/staging is known, provide information to the community, including updates to individual landowners once the resumption timing and process details are determined.

1.5 Environmental management

TMR will review, update and finalise an environmental management plan (EMP) in consultation with DERM and SCRC, and generally in accordance with the document provided in Section 22.0 of the EIS and updated in Appendix C of the SEIS. The EMP will identify potential environmental impacts of the project and their mitigation measures together with corrective actions if an undesirable impact or unforeseen level of impact occurs. The project's design and construction will comply with the EMP and will be conducted under appropriate contractual conditions, other agreements and statutory obligations.

It is acknowledged that several future investigations and studies will need to be completed prior to developing a comprehensive approach to environmental

management for this project. TMR is committed to the ongoing implementation of these activities in the lead-up to the design and construction of the project.

TMR is committed to the appropriate treatment of contaminated land to prevent impacts to the environment or public as a result of using the decommissioned rail corridor.

1.5.1 Aboriginal cultural heritage

A Cultural Heritage Management Plan (CHMP) will be prepared by the proponent in accordance with the *Aboriginal Cultural Heritage Act 2003* (Qld) prior to commencing construction.

1.5.2 Historical cultural heritage

TMR will prepare detailed conservation management plans for sites of historical cultural heritage significance, where impacts cannot be avoided (as listed in the EIS), and where identified through additional investigations.

TMR will consult with DERM regarding management plans for sites of state significance and SCRC for sites of local significance.

TMR will consider suitable design, re-use and interpretation of heritage elements in the design of the new stations (especially Mooloolah and Palmwoods), bridge structures (especially in Palmwoods) and related areas.

Detailed heritage survey of the Old Mellum Cemetery will be undertaken to confirm the exact location of this memorial site, and to ascertain whether the project will have a direct impact on any heritage aspect associated with this site.

Other key locations requiring further investigation to determine detailed management measures include:

- Buderim to Palmwoods tramway
- Murphys House
- heritage features in Kolora Park.

Procedures for future consideration of these sites were identified in the EIS. This includes specialist assessments, site specific conservation management plans, and appointing archaeologists for the construction period. The specialist assessments and site-specific management plans will require consultation with the Council, local community and any other stakeholders regarding mitigating and managing impacts.

There is also the potential for incorporating heritage features and places into interpretive signage within and between the townships, particularly if rail trails are developed along part or all of the decommissioned rail line.

1.6 Environmental offsets

TMR will implement a policy of no net loss of biodiversity in the region.

The requirement for offsets is discussed in Section 11.6 of the EIS. Offsets are currently governed by the policy for Vegetation Management Offsets[13] and operate on the basis of ecological equivalence. This means that they are required to be the same broad vegetation type and within the same bioregion. DERM (Queensland Parks and Wildlife Service) has requested compensatory land of equal or greater conservation value in lieu of cleared areas. During the detailed design phase of the project, there will be an opportunity for consultation between DERM, TMR and SCRC to achieve the best outcomes for the project. This would include consideration of compensatory habitat provisions.

TMR will investigate the suitability of land already owned by them as part of the offsets package provided for the project. During detailed design, the amount of remnant vegetation to be cleared will be refined to the exact areas required for the construction of the rail. Clearing will be minimised where possible by minimising the construction zone, using retaining walls and steepening batters and cuttings where possible. The extent of offsets, required under the VMA, will be further refined and identified during this stage. The methodology for locating and securing these offset areas will be subject to consultation with DERM. Several submissions suggest particular sites or properties which could be secured for offsets purposes; this information will be considered during preparation of the offset proposal.

The cumulative impacts of the project, and other projects and development across the region will be considered in identifying and securing offsets.

TMR will comply with the relevant offset and mitigation requirements policies relevant at the time of design and construction, including requirements for native vegetation, biodiversity protection and koala habitat protection.

1.7 Relocating affected community and recreational facilities

The joint TMR and SCRC working group will work closely with the relevant community groups and affected organisations to identify suitable solutions where facility relocation or impact mitigation is required. This will be an ongoing process that can run independently of the project, but would be resolved prior to construction or any relevant preliminary works associated with the project. Flood immunity and access will need to be considered when identifying suitable alternative sites for these community facilities.

TMR will contribute to developing strategies for relocation or re-establishment of impacted facilities which are to be developed prior to design finalisation or construction at that place.

These strategies will include:

[13] Department of Environment and Resource Management, Policy for Vegetation Management Offsets, version 2.4, Department of Environment and Resource Management, Brisbane, 2009, viewed 20 December 2010, www.derm.qld.gov.au/about/policy/documents/3450/veg_2006_2888.pdf

- defining the impact to the facility, and extent of mitigation required
- assessing re-use/redevelopment potential at the existing location
- identifying potential future sites
- assessing impacts to local businesses/community resulting from the loss of a facility from its present location
- assessing impacts/benefits to local community resulting from the relocation of the facilities economic analysis
- funding options
- timeframe for re-establishment
- guidance for engaging with the affected community groups/users
- process and protocols for liaison between TMR and the SCRC.

1.8 Further investigations

1.8.1 General

TMR will review and respond to the detailed comments on the EIS design provided by SCRC and DERM during the detailed design phase.

Stakeholder and community feedback will be constructively sought and taken into consideration during the detailed design phase.

1.8.2 Acid sulfate soils

TMR will prepare a detailed acid sulfate soils sampling and management plan prior to commencing detailed design.

1.8.3 Geotechnical investigation

TMR will conduct geotechnical testing (bore holes and test pits) prior to commencing detailed design, at an appropriate level of investigation to inform the detailed design process.

1.8.4 Hydraulic modelling

TMR will undertake additional hydraulic (flood and drainage) modelling at the detailed design stage to ensure the project does not exacerbate pre-existing flooding conditions for the 100-year average recurrence interval scenario. This modelling will include an allowance for climate change, based on the latest available projections (currently provided by the State Government in *ClimateQ: Toward a Greener*

Queensland)[14] at the time of design. This will also inform any further remediation or reprovisioning of local dams and catchments in the project area as well as:

- confirm sizing of bridge spans and conveyance areas
- confirm that no property will be adversely affected by flooding as a result of the project
- confirm the implications of decommissioning the existing rail corridor (e.g. removal or replacement of bridges, restoration of natural terrain where embankments are currently located
- determine location of any additional flood mitigation/ storage requirements resulting from changes to the design
- determine spatial requirements for stormwater treatment and spill containment.

1.8.5 Noise assessments

During future stages of design, the noise modelling undertaken at the EIS phase will be reviewed against standards current at that time, to determine appropriate noise treatments, which could typically include measures such as resilient rail systems and low-level noise barriers. Detailed construction noise predictions will be undertaken once contractors have been appointed and a detailed construction methodology determined to ensure that construction is undertaken appropriately.

1.8.6 Environmental studies

TMR will conduct additional environmental studies as identified in the EIS and SEIS.

During future phases of the design process, TMR will review the Addlington Creek crossing, and consult with the Australian Government should there be a significant departure from the management measures outlined in the EPBC Act referral documentation (2008) and EIS.

1.8.7 Source of hard rock

TMR will review the sources and supply of hard rock resources suitable for the project's construction. This will also include evaluation of in-situ resources, subject to the outcome of future geotechnical investigations.

1.8.8 Construction movements

TMR will prepare a road use management plan for construction vehicles in consultation with SCRC to minimise the disruption to road users and to ensure no adverse impacts on road safety.

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[14] Department of Environment and Resource Management, *ClimateQ: Toward a greener Queensland*, Department of Environment and Resource Management, Brisbane, 2009, viewed 16 June 2011, www.climatechange.qld.gov.au/whatsbeingdone/climatechangestrategy

TMR will assess the capacity and suitability of the local road network, to identify deficiencies, for construction purposes, in the existing road network. Any works required to enable use of the local road network for construction purposes will be considered as part of the project.

As each stage of the project is designed, and construction planning commences, vehicle movements, sources of fill and spoil re-use will be determined and the impacts to local traffic managed. Movement of spoil/fill to and from the site will comply with the environmental standards applicable at the time of construction, which will be included in the construction EMPs.

1.8.9 Re-use of existing infrastructure

TMR will review the potential for re-using existing infrastructure elements; however, this will be in the context of:

- structural integrity and suitability of materials
- visual appearance of materials
- timing of the decommissioning, as existing railway components cannot be re-used while the corridor is in use, and the replacement infrastructure must be in place before it is decommissioned.

1.9 Design principles

1.9.1 Noise treatments

The design of noise barrier structures and other treatments (including methods for noise mitigation on structures such as the Palmwoods bridge) will take into consideration the aesthetics of future urban design within the townships.

1.9.2 Station design

Station design will be completed in accordance with state and council guidelines, policy and requirements at the time of design including environmentally sensitive design, water sensitive urban design and crime prevention through environmental design (CPTED). Climate resilience principles will also be considered in future stages of design.

Station design guidelines will be developed for the project, to provide a clear and consistent framework for station design. The guidelines should take their cues from the surrounding townscape, and ultimately deliver outcomes like the recently refurbished Landsborough station, which reflects its railway and timber heritage and uses heritage colours. Community input into both the guidelines and the station designs will be sought.

The joint TMR and SCRC working group will further develop re-use plans for surplus rail land, in line with Council's intended planning processes for the area surrounding stations.

1.9.3 Pedestrian and non-vehicular access in towns

TMR will consider pedestrian access and community severance issues in the future development of station designs and land use for surplus rail land areas.

TMR will consider including the existing pedestrian underpass at Nambour Station in future stages of design; however, these will be governed by CPTED principles.

TMR will review pedestrian access requirements in Mooloolah, examining the longer term viability of maintaining an at-grade pedestrian crossing. At the time of grade separation, appropriate pedestrian access will be provided, it is envisaged that this would be provided via the station facilities (i.e. lifts, ramps or stairs).

1.9.4 Other rail infrastructure elements

Bridges and other major structures will be designed taking into consideration the scale, form, material, colour and compatibility with nearby architectural and townscape character, taking into account feedback from the community. Future design would respond to the local architectural fabric, giving consideration to materials and form that are compatible with the existing historical buildings.

The joint TMR and SCRC working group will coordinate engagement with the community to prepare visual design guidelines for the project.

1.9.5 Vegetation clearance

Future stages of design will need to clearly define the limits of the project, and review these against the vegetation clearance areas identified in the EIS. It is important to note that, while clearing areas and offset requirements identified in the EIS are for the four-track corridor, the construction of the two-track project should result in a lesser net requirement.

Future stages of the design process should be based on the two-track drawings, that is, only those areas required for the safe construction and operation of the two-track corridor should be cleared. This decision will have to weigh up the requirements in terms of maintenance and emergency access, as well as bushfire management.

1.9.6 Landscaping

Future stages of the design will incorporate appropriate visual impact mitigation measures, such as those described in the EIS, including:

- landscape planting within the railway reserve to screen the project from views, where feasible. This may also assist with slope stabilisation, erosion control and habitat connectivity
- landscape planting in strategic locations outside the railway reserve to provide additional screening, where possible
- opportunities exist to integrate landscaping with noise barriers to reduce the visual impact of noise mitigation barriers

- mitigation measures developed in the detailed design phase may include opportunities to provide screening to individual properties.

1.10 Tunnels

1.10.1 Tunnel design

Tunnel design parameters will be reviewed during future stages of design, in the event that future design standards for rail in Queensland are revised to accommodate double stack containers. This would also have a flow-on effect on the design height of any bridges over the railway in the project area.

Tunnel ventilation plant will be required for safe operation of the tunnels. The requirements for this will be determined in future stages of the project's design, and will need to comply with the appropriate noise and emissions standards at the time. Avoidance of areas of fauna and habitat significance will be important factors in selecting appropriate locations and methods for tunnel ventilation.

1.10.2 Existing disused tunnel

TMR will undertake a condition survey of the existing disused tunnel, 400 metres to the west of the project, which is listed on the National Trust Register. The condition survey will determine if it would be susceptible to vibration damage from construction of the future tunnel.

Vibration monitoring will also be undertaken during construction to ensure that site construction activities do not cause sustained vibration levels that are likely to cause damage. The project will be responsible for damage attributable to construction vibration and for returning the property to pre-construction condition.

1.10.3 Decommissioned tunnels

TMR will assess the current tunnels, which are not required when the proposed scheme is built, to see if they are structurally sound to continue and the appropriate use/purpose will be assessed. The heritage significance of these tunnels should also be considered in any future use.

The vibration caused by the drilling of the new tunnels will be monitored, to limit disturbance to the existing bat colony in the operational tunnel.

1.10.4 New tunnels

Geotechnical investigations will inform the detailed design process, so that construction footprints and lengths of cut and cover/bored tunnel can be accurately determined.

1.11 Other infrastructure

1.11.1 Powerlines

TMR will consult with Powerlink, or the appropriate asset owner at the time of design and construction, to confirm design suitability and other arrangements for the area near Culgoa Road. TMR will confirm, through detailed design, the feasibility and practicality of extending the tunnel in this location to manage the area under the powerlines.

1.11.2 Gas pipeline corridor

TMR will consult with the relevant authority in the lead-up to, and during, design to confirm design suitability and other arrangements for the area where the corridor crosses the gas pipeline route. The design process will need to take into account whether the pipeline has been constructed or is still in planning at the time of railway construction.

1.11.3 Asset relocation

Where infrastructure or public assets require relocation as a result of the project, i.e. roads, bikeways, trails, drainage or water supply, the design of these elements should be undertaken in such a way that the asset life can be maximised. Determining appropriate infrastructure requirements to service future community needs will be considered by the joint TMR and SCRC working group. TMR will liaise with all stakeholders in the lead-up to, and during, the design process to incorporate reasonable and appropriate requirements into the design.

1.12 Grade separation and road network issues

1.12.1 Grade separation of Gympie Street North

The timing of this grade separation will be determined through the development of the project staging. The joint TMR and SCRC working group will continue to engage with the community and community representatives to determining timing and need for grade separation.

1.12.2 Mooloolah

The timing of this grade separation will be determined through the development of the project staging, taking into consideration safety and access requirements. The joint TMR and SCRC working group will coordinate engagement with the community and community representatives when determining timing and need for grade separation.

1.12.3 Road network

Future design stages will further refine the interface between the rail and realigned Paskins Road, in response to detailed geotechnical investigations.

The project will need to be consistent with the outcome of current safety investigations in the Woombye area, namely the Nambour Connection Road/Blackall Street intersection. The proposed overpass at Keil Street, and other road relocations, will be considered in the context of current and future state-controlled and local road network upgrade proposals.

1.13 Construction

1.13.1 General

TMR will develop a construction management strategy that considers the various activities that will occur across the entire project area, and how these can be managed. This will be developed once relevant implementation processes are determined, but should include penalties/compensatory triggers for activities occurring outside agreed and scheduled timeframes.

1.13.2 Condition surveys

The proponent will undertake condition surveys of properties susceptible to vibration damage prior to constructing the railway. Vibration monitoring will also be undertaken during construction to ensure that site construction activities do not exceed vibration levels likely to cause damage. The proponent will be responsible for damage attributable to construction vibration and for returning the property to pre-construction condition.

1.13.3 Traffic management

TMR will liaise with SCRC, and the Department of Community Safety so that emergency access and response times are not jeopardised during temporary road closures or diversions.

1.13.4 Construction worker parking and access

While the details of parking arrangements for the construction workforce will be developed in later stages of the project, the principles for parking arrangements will be to:

- encourage the construction workforce to car pool or use alternative transport to the site
- identify parking areas suitable for the construction workforce that do not reduce the amount of parking available for businesses or residences
- provide temporary car parking where necessary

- strictly enforce parking protocols for the project, to ensure that parking does not occur outside of designated areas.

1.13.5 Recycled water

Prior to construction, TMR will confirm supply and availability of recycled water for non-potable purposes, and undertake a health assessment to determine whether the use of recycled water is suitable on site. Should it be determined that it is safe to use recycled water for construction (non-potable) purposes, a recycled water management plan will be prepared.

1.14 Decommissioning of the old railway

1.14.1 Contaminated land

TMR is committed to the appropriate treatment of contaminated land to prevent impacts to the environment or public as a result of the using the decommissioned rail corridor.

1.14.2 Future use determination

The future use of the decommissioned corridor will need to fully consider the potential for environmental impact to adjoining areas (national parks, wildlife corridors, habitats), and how these can be effectively mitigated. User safety will also need to be considered.

1.14.3 Active trails strategy

The Department of Communities has recommended TMR work with SCRC to develop an active trails strategy, and master plan for outdoor recreation. This will depend on future decisions as to how the decommissioned corridor will be used.

1.14.4 Rehabilitation

Rehabilitation plans will be produced once the existing rail ceases to operate. The rehabilitation plans will deal with different portions of the decommissioned rail and will be generally in accordance with the process of rehabilitation described in the EIS. It will involve removal of ballast and restoration of topography to suit the existing landscape.

Upon decommissioning of the old railway, the electricity supply over the ridge at The Pinch Lane will be removed. There may be some clearing within the existing electricity easement to remove the poles and wires; however, once the old electricity infrastructure is removed, the easement can be revegetated.

1.15 Issues external to the project

1.15.1 Grade separation, Caloundra Street and Maleny Street, Landsborough

TMR has identified that grade separation of the railway at Caloundra Street and Maleny Street in Landsborough is outside the scope of this project. Therefore, it will be examined through a separate process, for which the timing and extent of investigation is yet to be determined by TMR.

1.15.2 Road network improvements, Palmwoods–Woombye Road/Jubilee Road intersection, Palmwoods

While the project will not directly result in the upgrade of this intersection, it will deliver the opportunity to consider reconfiguring the local road network. The timing of the road upgrade can only follow the decommissioning of this section of the track; therefore, this will be subject to the overall staging of the design and construction of the project. TMR will work with SCRC to resolve this issue.

Acronyms and abbreviations

Acronym	Definition
CPTED	crime prevention through environmental design
CHMP	cultural heritage management plan
Connecting SEQ 2031	Draft Connecting SEQ 2031: An Integrated Regional Transport Plan for South East Queensland
DCS	Department of Community Safety (Qld)
DEEDI	Department of Employment, Economic Development and Innovation (Qld)
DERM	Department of Environment and Resource Management (formerly the Environmental Protection Agency) (Qld)
DIP	The former Department of Infrastructure and Planning (Qld) (now the Department of Local Government and Planning)
DOC	Department of Communities (Qld)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (Cwlth)
EIS	environmental impact statement
EMP	environmental management plan
EP Act	*Environmental Protection Act 1994* (Qld)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
ESD	environmentally sensitive design
GQAL	good quality agricultural land
ha	hectares
IAS	initial advice statement
IDAS	Integrated Development Assessment System
km	kilometres
MCU	material change of use
NCA	*Nature Conservation Act 1992*
NCL	North Coast Line
QR	Queensland Rail
REs	Regional Ecosystems
SCRC	Sunshine Coast Regional Council
SDPWO Act	*State Development and Public Works Organisation Act 1971* (Qld)
SEIS	supplementary environmental impact statement
SEQ	South East Queensland
SEQIPP	*South East Queensland Infrastructure Plan and Program 2010–2031*

SEQ Regional Plan	*South East Queensland Regional Plan 2009–2031*
SMAs	Special Management Areas
SPA	*Sustainable Planning Act 2009*
TI Act	*Transport Infrastructure Act 1994* (Qld)
TMR	Department of Transport and Main Roads (Qld) (the proponent)
TOR	terms of reference
TPC Act	*Transport Planning and Coordination Act 1994* (Qld)
VMA	*Vegetation Management Act 1999*

Glossary

Term	Definition
controlled action	A proposed action that is likely to have a significant impact on a matter of national environmental significance; the environment of Commonwealth land (even if taken outside Commonwealth land); or the environment anywhere in the world (if the action is undertaken by the Commonwealth). Controlled actions must be approved under the controlling provisions of the EPBC Act.
Coordinator-General	The corporation sole constituted under section 8A of the *State Development and Public Works Organisation Act 1938* and preserved, continued in existence and constituted under section 8 of the SDPWO Act.
environment	As defined in Schedule 2 of the SDPWO Act, includes: (a) ecosystems and their constituent parts, including people and communities (b) all natural and physical resources (c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community (d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).
environmental effects	Defined in Schedule 2 of the SDPWO Act as the effects of development on the environment, whether beneficial or detrimental.

initial advice statement (IAS)	A scoping document, prepared by a proponent, that the Coordinator-General considers in declaring a significant project under Part 4 of the SDPWO Act. An IAS provides information about: • the proposed development • the current environment in the vicinity of the proposed project location • the anticipated effects of the proposed development on the existing environment • possible measures to mitigate adverse effects.
properly made submission (for an EIS or a proposed change to a project)	Defined under section 24 of the SDPWO Act as a submission that: (a) is made to the Coordinator-General in writing (b) is received on or before the last day of the submission period (c) is signed by each person who made the submission (d) states the name and address of each person who made the submission (e) states the grounds of the submission and the facts and circumstances relied on in support of the grounds.
proponent	The entity or person who proposes a significant project. It includes a person who, under an agreement or other arrangement with the person who is the existing proponent of the project, later proposes the project.

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