

SURAT BASIN RAIL PROJECT

# EIS

Summary • February 2009



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# Function and Scope of Summary

This Summary document provides a description, the principal environmental impacts, the proposed environmental management strategies and commitments of the proposed Surat Basin Rail Project as set out in the Environmental Impact Statement (EIS).

The function of this Summary is to convey the most important aspects and options relating to the Project in a concise and readable form.

This Summary is a stand-alone document, focusing on the key issues and the Project's potential adverse and beneficial environmental, social and economic impacts and the management measures to be implemented to mitigate all residual impacts.

The scope of the Summary is determined by the provisions of the Terms of Reference as they relate to the Executive Summary.

To this end, it is intended that this Summary address the requirements of the Terms of Reference (contained in full in Appendix B of Appendices) required for the Executive Summary.

This Summary includes an overview of the Project, provides details of the Proponent and summaries of the technical sections as contained in the other documents that make up the EIS.



## Surat Basin Rail Project

Proposed as a major new 210 km railway, the Project, when constructed, will connect the Western Railway System, near Wandoan, with the Moura Railway System, near Banana.

The Project aims to provide a multi-user, open access rail link and facilitate the export of coal and freight through the Port of Gladstone.

While coal customers will form the bulk of the rail users, it is anticipated that freight traffic will increase over time.

The Surat Basin Rail Project is being funded by the Surat Basin Rail Joint Venture at a construction cost in the vicinity of \$1 billion.

Construction of the Project is scheduled to start in 2009 and is likely to take up to three years to complete.

# About the EIS

The objectives of the EIS are to:

- Provide public information on the need for and likely effects of the Project on the natural, social and economic environment;
- Set out acceptable standards and levels of impacts (both beneficial and adverse) on environmental values; and
- Demonstrate how potential environmental impacts are to be managed.

The Proponent for the Project, Surat Basin Rail Pty Ltd, engaged a technical consortium, consisting of Connell Hatch, Parsons Brinckerhoff and Maunsell AECOM, to conduct the technical environmental studies and to provide independent expertise in the areas of engineering and community engagement.

The EIS comprises 14 technical studies that describe the existing environmental conditions and values within the Project study area, assesses the potential impacts of the Project on these conditions and values and where necessary recommends appropriate mitigation measures to minimise adverse impacts.

A summary of the findings of these technical studies follows. These summaries provide broad descriptions only of the findings and recommendations for each technical area. Further information can be found in each of the chapters that comprise the EIS Main Text document.

All copies of this Summary, sent out by the Proponent, include a Compact

Disc containing the full text, maps and figures that comprise the EIS. These are contained in separate documents:

- Main Text
- Appendices
- Map Folio

## Legal Framework for the Project

The EIS has been prepared in accordance with the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The Project has proceeded through a number of steps in the legislative approvals process, resulting in the need for this EIS, specifically:

- On 19 November 2007, the Proponent lodged an Initial Advice Statement (IAS) for the Project with the Coordinator-General (CG). The IAS provided an outline of the proposed Project, including its rationale and potential impacts;
- On 30 November 2007, the CG declared the Project to be a 'significant project for which an EIS is required', under s.26(1)(a) of the SDPWO Act;
- On 3 January 2008, the Proponent referred the Project to the Commonwealth Minister for Environment, Heritage and the Arts for a determination as to whether the Project would constitute a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), Referral No 2008/3944;

- On 22 February 2008, the Commonwealth Minister determined that the Project is not a 'controlled action' and therefore does not require assessment under the EPBC Act; and
- On 12 April 2008, the CG advertised the draft Terms of Reference (ToR) for public comment with written submissions invited up until close of business on 16 May 2008. The ToR were finalised on 23 June 2008.

The EIS has now been prepared and submitted to the Queensland Department of Infrastructure and Planning (on behalf of the CG) and for the public and advisory agency review. Depending on the outcomes of the public and advisory agency review, the Proponent may be required to prepare a Supplementary Report to the EIS that addresses specific matters raised in submissions on the EIS.

At the completion of the EIS phase, the CG will prepare a report ("CG Report") evaluating the EIS and will decide whether the Project should be approved (containing conditions and recommendations if required) or refused.

If approved, the Project must be assessed against Schedule 8 of the *Integrated Planning Act 1997* which sets out approvals or licences required under the various State legislations for project activities, including the *Environmental Protection Act 1994*, the *Vegetation Management Act 1999* and the *Water Act 2000*.

# The Proponent

Surat Basin Rail is a key strategic development to be delivered through an innovative joint venture of resource companies, investors and QR, collaborating to deliver a new railway for Queensland.

The Project Proponent is Surat Basin Rail Pty Ltd (SBR) as agent for and on behalf of the Surat Basin Rail Joint Venture. SBR was established in December 2006 with the intention that the joint venture parties would work together to develop a multi-user coal and freight railway between the Western and Moura Railway Systems.

In July 2007, the Queensland Government awarded an unconditional Exclusive Mandate to the Joint Venture Partners, comprising ATEC, Anglo Coal, Xstrata and QR Ltd to investigate the development of this rail link. The Project is a joint private sector and State Government initiative and is investor-funded, rather than state-funded. The Project will provide open-access to customers while providing a level playing field on prices and access terms.

SBR is committed to the effective environmental management for the Project, before, during and after construction.

The Joint Venture partners are:



## **ATEC (Dawson Valley Railway) Pty Ltd**

Established in 1996 to promote the concept of an inland rail between Melbourne and Darwin, ATEC has emerged as a key player in the rail infrastructure industry. ATEC is developing regional rail freight networks and associated terminal infrastructure. At present it has three core business interests: A freight terminals trust, the Surat Basin Railway in Queensland and the Border Railway linking Moree (NSW) to Toowoomba (QLD).



## **Anglo Coal Australia Pty Ltd**

Anglo Coal is one of Australia's leading coal producers with extensive coal mining interests and prospects in Queensland, New South Wales and Victoria.

The group's coal mining interests in Queensland include a 100% interest in the Callide Mine, a 51% interest in the Dawson and Dawson South Mines (formerly the Moura Mine) and a 70% interest in the Capcoal Mining Project. Anglo Coal also controls major mine deposits close to the proposed Surat Basin Rail route.



## **Xstrata Coal Surat Basin Rail Pty Ltd**

Xstrata Coal is the world's largest exporter of thermal coal and the fifth largest producer of hard coking coal. Headquartered in Sydney, Xstrata Coal has interests in over 30 operating coal mines throughout Australia, South Africa and Columbia. Xstrata Coal Queensland has four large coal mining complexes located at Collinsville, Newlands, Oakey Creek and Rolleston and is actively pursuing development of the Wandoan Coal Project in the Surat Basin.



## **QR Surat Basin Pty Ltd**

QR Ltd is the dominant rail transport operator in Queensland and one of the largest transport companies in Australia. Provision of rail access and freight haulage services to the Queensland coal industry is a major element of QR's business.

## Background and Need



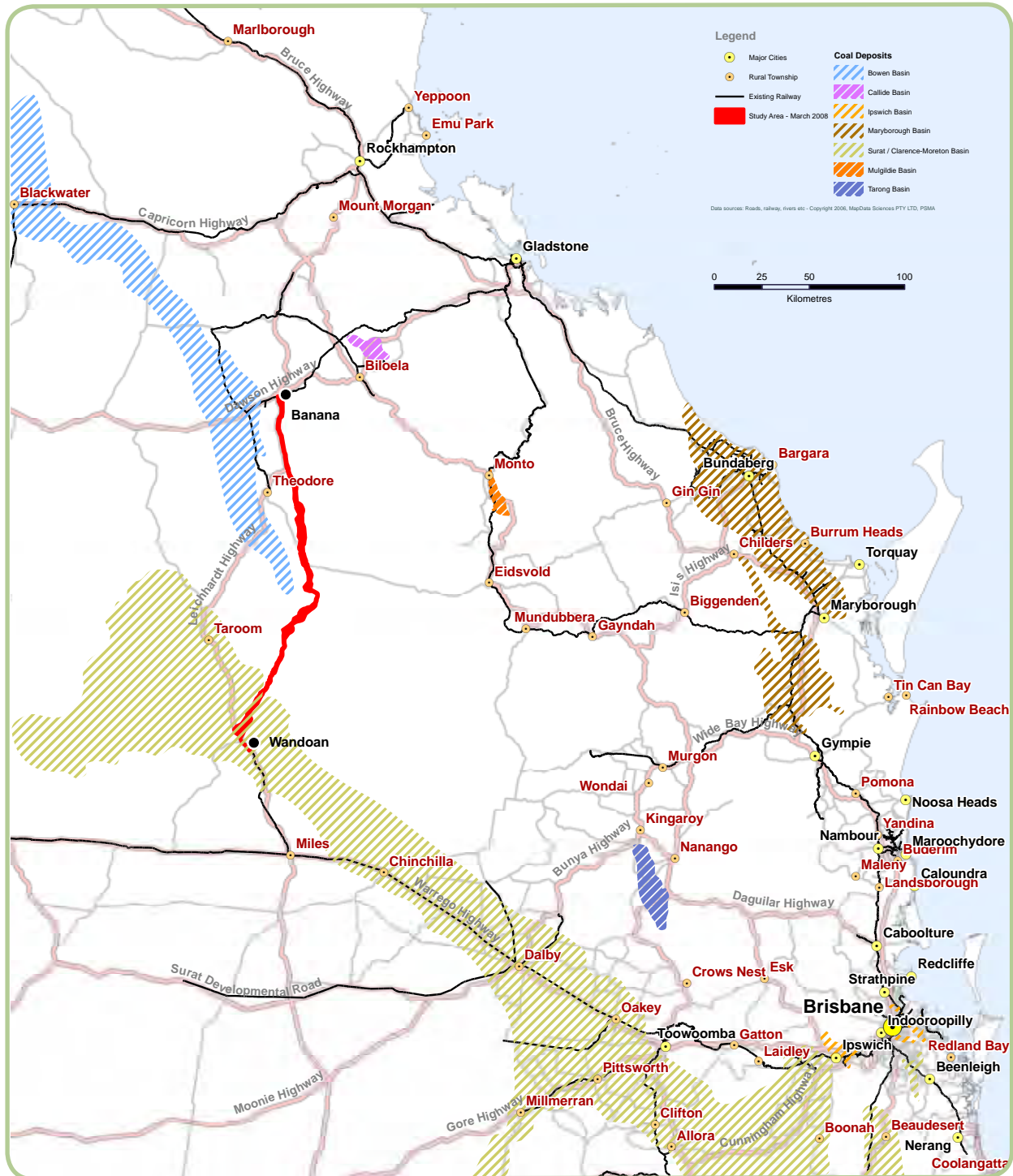
Australia is the world's largest coal exporter, and the coal-rich Surat Basin in regional Queensland contains up to four billion tonnes of coal reserves. These reserves have remained economically unviable as Queensland's existing coal rail network, consisting of 5 coal rail systems, does not adequately service the Surat Coal province. As such this Project will significantly enhance the existing network and improve the opportunities for coal reserves in the Surat Basin to be utilised.

This rail link to the Port of Gladstone also has significant advantages for the

transport of general freight. Regional freight services currently rely on the Western Rail Line and the Port of Brisbane. Current demands on this export route mean that, although it provides export opportunities for grain and livestock, the freight service is generally of a low standard. Completion of the Surat Basin Rail Project will provide a new rail freight link that can utilise the Port of Gladstone, alleviating capacity constraints on the Port of Brisbane and Western Rail line, and greatly enhance the export options for regional producers.

Adding to this enhanced freight service is the potential for the Project to provide wider, national benefits. The Surat Basin Rail has the potential to form part of the proposed Australian Inland Rail Expressway; a project of national significance that is intended to ultimately link Melbourne and Darwin via New South Wales and Queensland. This provides opportunities to other potential users, along the Eastern seaboard, including mineral, agricultural produce and general freight customers to gain access to an economically competitive freight service.

## Location Map and Regional Coal Deposits





# Assessment of Project Alternatives

Over the past 30 years, several rail alignments linking the Western Railway System and the Moura Railway System have been investigated. Each has been developed to varying levels of detail.

As part of the Proponent's early engineering and environmental assessments, the performance of these historic alignments were evaluated using environmental, social and economic parameters within the current Australian and state legislative framework.

Most of the alignments were found to contain significant constraints, including large sections of tunnelling, dissection of National Parks and sections through the proposed Nathan Dam inundation area.

Taking into account the unsuitability of the previous alternative rail alignments, the ATEC/Maunsell alignment (prepared in 2005) was selected as a basis for the study area of the Surat Basin Railway. This study area predominantly contains 'non-remnant' vegetation, does not cross major rivers and avoids the proposed Nathan Dam site.

In determining the preferred alignment within this study area, a total of 18 alignment options were considered from Wandoan to Cracow and a further 15 alignment options were considered from Cracow to Banana. A multi-criteria analysis (MCA) framework was used as the basis for assessing and evaluating these alignment options and included consideration of engineering, environmental, social and economic criteria.

The MCA technique is a standard planning tool in which criteria are identified, weighted and the performance of each option given a rating. Sensitivity testing of the weightings and ratings is then carried out to determine the relative performance of each option.

The results of the MCA process identified a preferred alignment as shown on Page 9. The overall length of the preferred alignment is similar to the previous alternative rail alignments; however with flatter grades and curves with larger radii providing lower operational costs and reduced emissions compared to the alternative alignments.

The preferred alignment also passes to the west of Wandoan town thereby allowing greater opportunity for future urban expansion.

As a part of the proposed Project a "Do Nothing" option was also assessed. To not proceed with the Project would inhibit the development of in excess of four billion tonnes of coal reserves within the Surat Basin. These reserves have the potential to maintain and enhance the economic and social conditions in regional, state, and national contexts and to ensure Australia's continued contribution to the world energy sector.

Additionally, the Project provides a substantial new export link that will reduce the capacity constraints currently experienced at the Port of Brisbane whilst simultaneously making the Port of Gladstone accessible to regional producers.

Should future demand warrant, this will have benefits for other sectors of the economy besides coal mining such as agricultural producers and general freight.

To not proceed with the Project under the "Do Nothing" option would detract from these significant economic and social benefits the Project will deliver to local and regional communities.

# Project Description



The proposed rail will consist of a single track with up to eight passing loops and will accommodate trains of up to 2.5 km in length – if future demand warrants. A number of structures are required to support the rail line at road, stock and creek crossings. Cross drainage will be provided with over 50 culverts.

To accommodate the rail, the proposed corridor will be approximately 60 metres in width, with wider sections as required for related earthworks, and will be fenced along the entire length.

Operation of the rail line will be supported by signalling and communication equipment that will require power supply. A maintenance track will run adjacent to the rail line and within the fenced boundary.

Although at first the railway will run diesel hauled trains, provision has been made for future electrification of the

railway, should it become economically viable. This step can be completed without requiring the footprint of the development to increase.

The Project has the capacity to transport up to 42 million tonnes per annum (Mtpa) of coal. This will ultimately require up to 24 train movements per day, 320-340 days a year. At first the Project will provide a rail link from the proposed Wandoan coal mine to the coal loading facility at the Port of Gladstone. Future demand for the Project is linked to the completion of a number of other developments in the area including potential new mines in the Taroom area and the possibility that other coal mines in South East Queensland will choose to bypass the Port of Brisbane in favour of the Port of Gladstone. Such other future developments are proposed independently of the Surat Basin Rail and will be required to satisfy separate assessment approvals processes.

Complementing the original intent of the Project to provide transport for coal, the preferred alignment has been optimised for the future transport of general freight traffic also. The Project's connection to the Port of Gladstone makes it suitable for non-coal freight haulage that currently relies on the Western Rail Line and the Port of Brisbane.

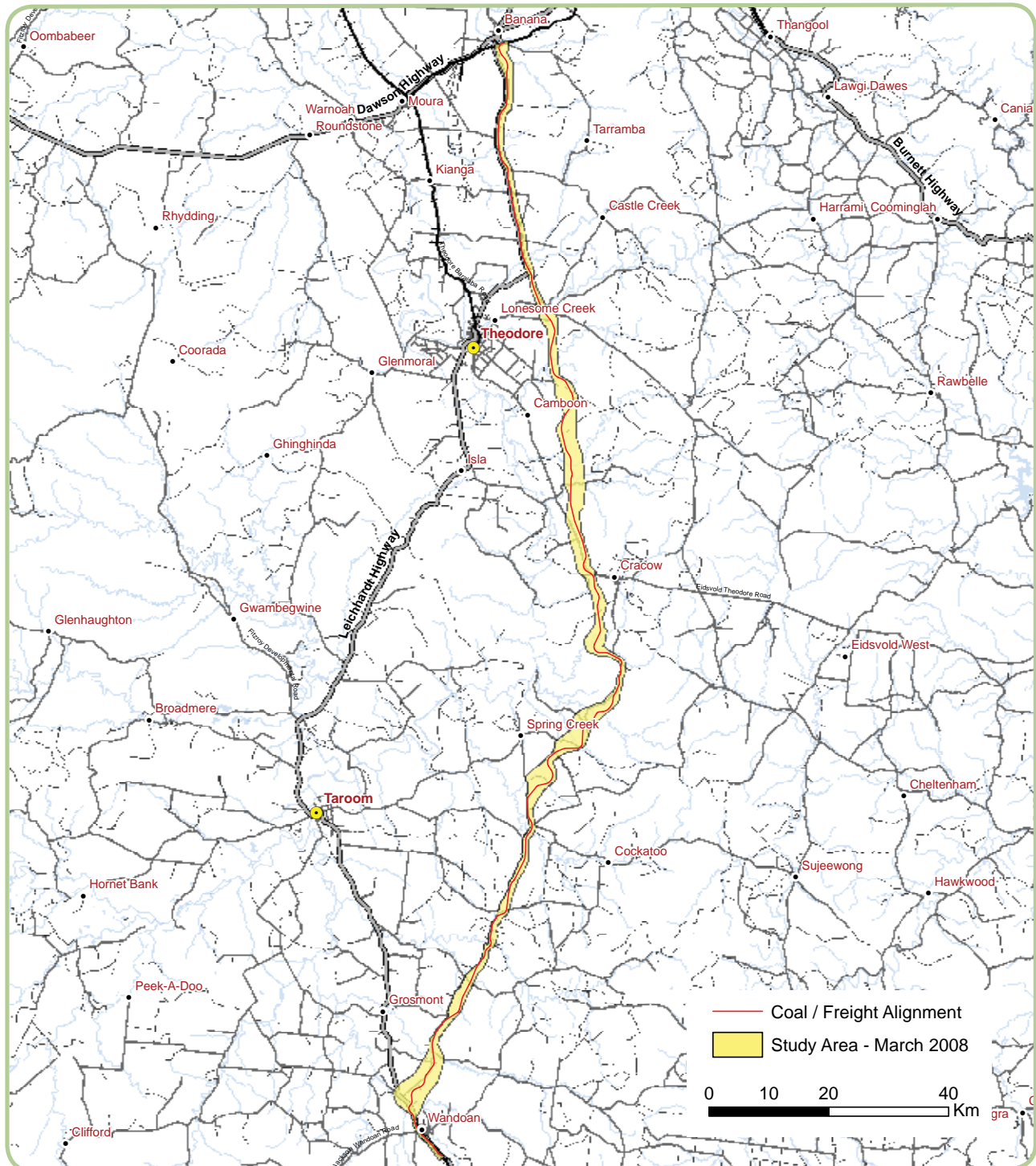
In light of this potential dual use for the Project and as specified in the Terms of Reference the proposed line can accommodate a number of operational scenarios. These are:

- Narrow gauge coal railway;
- Narrow gauge coal/freight railway; or
- Dual gauge coal/freight railway.

# Project Assumptions

<b>Key features</b>	<ul style="list-style-type: none"> <li>• 210 km in length</li> <li>• Single track with up to eight passing loops</li> <li>• Designed for up to 42 Mtpa of coal</li> <li>• Support 22 – 24 train movements per day</li> <li>• Continuously welded rail</li> <li>• Rail corridor approximately 60 m wide with wider sections as required to accommodate earthworks</li> </ul>
<b>Trains</b>	<ul style="list-style-type: none"> <li>• Diesel powered trains up to 2.5 km in length</li> <li>• Provision made for electrification in future</li> </ul>
<b>Construction</b>	<ul style="list-style-type: none"> <li>• Total cost – in the vicinity of \$1 billion</li> <li>• Expected construction timeframe approximately 30 to 36 months</li> <li>• Estimated 12 million m<sup>3</sup> of bulk earthworks required</li> </ul>
<b>Operation</b>	Annual operational running and maintenance costs - \$3 to \$4 million
<b>Labour requirements</b>	Required labour of 57,000 person weeks completed by up to 1000 workers
<b>Significant structure</b>	Downfall Creek bridge will be approximately 415 m long, up to 50 m high and will take nearly two years to construct
<b>Other structures</b>	Over 40 rail bridges, eight road bridges and over 50 major culverts
<b>Max design speed</b>	<ul style="list-style-type: none"> <li>• 100 km / hr (freight)</li> <li>• 80 km / hr (coal)</li> </ul>
<b>Max vertical grade</b>	1 in 100 and 1 in 200 for passing loops
<b>Flood immunity</b>	100 year Average Recurrence Interval flood immunity where feasible
<b>Crossings</b>	<ul style="list-style-type: none"> <li>• All Stock Route crossings grade separated</li> <li>• At-grade public and occupation crossings as per Queensland Department of Main Roads guidelines</li> </ul>

## Study Area and Preferred Alignment



# Construction

Construction work on the Project is scheduled to start in 2009 and is likely to take approximately three years to complete, subject to obtaining all necessary approvals. Early construction works will concentrate on establishing site access, workforce accommodation and offices as well as providing the necessary water, power and waste infrastructure to support the construction site over the length of the Project.

A workforce of approximately 1000 people will be required for construction with demand for the number and skill-sets of construction workers fluctuating in response to varying stages of construction.

Accommodation will be required for the construction workforce and for the purpose of the EIS it has been assumed that three temporary construction camps, each with the potential to house approximately 450 construction workers, will be provided to meet the housing needs. These temporary accommodation facilities are expected to be located close to the major work fronts.

Due to the distances that would be required to travel from the local towns, it has been assessed that it is not feasible to integrate the construction workforce with the existing urban communities.

Employment opportunities exist throughout the construction period for professional, skilled and semi-skilled labour.

Work on the first section of the rail is scheduled to start at the end of 2009. To maximise efficiency during construction, earthworks, drainage works, structures and pavement construction have been assumed to commence in at least four sections simultaneously (see table below).

Construction of the rail line will require bulk earthworks and significant volumes of suitable construction material for use in the railway embankment. Ballast will be primarily sourced from cuttings proposed around Cracow and supplemented, where necessary, with material sourced from existing quarries established in the immediate Project area.

Supplies and materials will be brought to the construction sites via the Leichhardt Highway and Warrego Highway (east of Miles) from Rockhampton, Gladstone and Brisbane and will likely use local routes such as Cracow Road, Eidsvold-Theodore Road, Defence Road and Nathan Road. Some materials, specifically the track, will arrive on site via rail. The construction of a permanent access track within the corridor will

facilitate the movement of construction and maintenance vehicles thereby reducing the need to use public roads.

Commissioning of the rail line will occur progressively across the entire Project as a single activity. Operation of the rail line is at this stage targeted for 2012. Once operational, the Proponent will maintain responsibility for ensuring the corridor is managed appropriately and the appointed Rail Manager will be responsible for safety. General maintenance will include clearing, drainage, repairing fencing, assisting in track and bridge inspection, maintaining earthworks, vegetation control and weed management.

The line has a minimum design life of 50 years. When decommissioning occurs, detailed strategies will be developed to ensure it occurs in accordance with standards applicable at the time. It is anticipated these standards will be no less stringent than current standards. Resource recovery and leaving the site in a permanently safe condition will be central goals of decommissioning of the rail.

Work Section	Description
0-18 km	Wandoan to a point north of Wandoan
18-75 km	North of Wandoan to a point south of the Auburn Range at about the location of the Taroom spur junction
75-120 km	Auburn Range crossing section
120-210 km	North of Auburn Range to the existing QR Moura Line near Banana

# Principal Environmental Impacts and Management Strategies

## Climate and Natural Disasters

Like all infrastructure projects planned with a long life span, the Project is exposed to the hazards associated with extreme climatic events including floods, storms, bushfire and drought. Specific controls within the EIS will manage the environmental and economic risks of climate and natural disasters during the construction phase.

Strategies are in place to respond to potential longer-term climate change patterns and the risks to infrastructure durability, safety, longevity and maintenance. Climate change strategies could include:

- The selection of materials based on the life expectancy of the infrastructure and maintenance regime;
- Definition of design standards of particular components allowing for expected extreme events and accelerated degradation;
- Maintenance regimes to accommodate accelerated degradation of materials and structures; and
- New technologies allowing improved standards of performance under extreme climatic conditions.

## Land

The proposed rail corridor can be broadly characterised into three major topographical settings; gently undulating in the south, steep sandstone ridges and incised gullies across the western fringe of the Auburn Range through the centre

of the Project, and relatively flat across the Dawson River floodplain north of Cracow.

The disturbance and exposure of soils, particularly those vulnerable to erosion and structural degradation has the potential to become a significant adverse impact of the Project. Unless appropriately managed, ground disturbance along the length of the Project has the potential to cause erosion of good quality agricultural soil and fertile topsoil material. Soils of particular concern will be those on steep slopes and/or exposed through deep cutting activities.

Where possible, route selection has focused on avoiding erosion prone areas, good quality agricultural land and minimising the disturbance of creeks and surface drainage lines. Specific ground improvement measures to control settlement and ground instability will be developed as part of the ongoing design process and will rely on further detailed geotechnical investigations. The residual impacts will be managed through the implementation of the construction Environmental Management Plan (EMP). This includes soil and water management provisions, erosion and sediment control measures and topsoil management.

Agriculture remains a fundamental land use in the study area and the maintenance of Good Quality Agricultural Land as defined by the *State Planning Policy 1/92* is a specific consideration for the EIS.

Although some loss of GQAL can be expected from the Project, steps to minimise this have been recommended as part of the findings of the EIS.

Potential land contamination appears to be limited with only eight properties along the alignment listed on the Environmental Protection Agency's Environmental Management Register. Further work will be undertaken to determine the extent of contamination on these sites, though it is commonly livestock dip or spray race facilities that trigger the listing. These activities are typically confined to relatively small areas on large rural lots.

All potentially contaminated land will be appropriately managed in accordance with the EPA Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland.

The process typically requires site management plans and/or remedial action plans. Such plans contain soil management measures for known contaminated sites and mitigation strategies to limit the potential for contamination from construction activities.

It will be necessary for the Proponent to acquire land in order to construct the rail line. With this land acquisition, there is a possibility for a decline in value of properties intersected by the rail line, a change to access of some areas and a potential for loss of community cohesion.

Having identified these issues, commitments have been made to work with local communities and landholders to address potential issues, ensure appropriate design measures are implemented to reduce potential fragmentation and the diminution of existing property values, and undertake appropriate property resumptions. These activities will take place during the planning and construction phases of the project.

Commensurate with land use considerations are Native Title issues. The *Native Title Act 1993* (Cth) provides for determinations of native title in Australia and acknowledges that Australian common law can recognise the rights and interests over land and water possessed by some Indigenous people in Australia under traditional laws and customs. This Act established the National Native Title Tribunal to govern how native title is dealt with across Australia. Three separate native title claims occur along the alignment.

Under section 24KA of the *Native Title Act* projects providing essential services and infrastructure can be carried out without affecting native title rights and interests over the land. To ensure that matters related to cultural heritage in these native title claims are not adversely affected Cultural Heritage surveys and negotiated management plans are being completed.

### Nature Conservation

The majority of the proposed corridor has been previously cleared for agriculture and is now dominated by

exotic grasses and pasture species. Route selection has focused on avoiding areas of environmental significance wherever possible with the preferred alignment successfully avoiding direct impacts on Precipice and Isla Gorge National Parks, Oxtrack Nature Refuge and areas of Boggomoss that provide specialised wetland habitat.

The current preferred alignment will result in the estimated loss of around 120 ha of remnant vegetation, predominantly along creek lines near the western fringe of the Auburn Range crossing south of Cracow. This equates to approximately 9% of the total land area (1,411ha) to be disturbed by the construction footprint.

Vegetation to be cleared consists of approximately 8 ha of Endangered Regional Ecosystem (RE), 14 ha of Of Concern RE and 100 ha of Not of Concern RE. Specifically, just over 1 ha of Brigalow and around 5 ha of Semi-evergreen vine thicket, both listed as Endangered Ecological Communities under the Commonwealth EPBC Act, are likely to be directly affected. Additional clearing is required for the Nathan Gorge Road realignment affecting a further 2 ha of Semi-evergreen vine thicket and 15 ha of Not of Concern RE.

Five threatened flora species have the potential to be directly and indirectly affected by the Project through clearing and ground disturbance activities. These include two Commonwealth listed species *Cadellia pentastylis* and *Dichanthium queenslandicum*, plus three State listed species *Acacia calantha*, *Homopholis belsonii* and *Livistona nitida*.

A number of significant fauna species, listed for protection under Commonwealth and Queensland laws, have been confirmed in the study area or are considered likely to occur along the route. Key habitat areas are located at the Nathan Gorge Range and Castle Creek wetland with other listed species likely to use isolated remnants of mixed eucalypt woodland and Brigalow scrub.

Where impacts cannot be avoided, a range of management measures can be implemented and include:

- Minimising clearing in all situations, but particularly when working in endangered communities, significant species' habitats or communities that are vulnerable to disturbance;
- Design of structures and environmental controls with consideration of fauna-sensitive design; and
- Rapid rehabilitation of impacted communities to minimise opportunity for the establishment and spread of weeds.

Any clearing of vegetation for the purpose of the Project will be conducted under the necessary approvals and in accordance with the requirements of Commonwealth and State legislation.

### Surface and Groundwater Resources

The Project is located in the Dawson River sub-catchment of the Fitzroy River drainage basin and intersects several small creeks and drainage lines that are tributaries of the Dawson River. Preliminary design indicates over 40



bridges and over 50 major culverts will be constructed or improved along the corridor. This work has the potential to increase the flooding height within the catchment.

The acceptability of any increase in peak water levels and potential changes to peak channel velocities will be developed in consultation with DNRW.

The potential impacts on water quality at the crossing points and downstream environments will be managed in accordance with industry accepted Soil and Erosion Sediment Control Guidelines which will include:

- Measures to minimise changes to channel morphology resulting in changes to flood levels and scour and erosion of waterway channels;
- Measures to minimise the release of sediment into waterways; and
- Measures to minimise contamination of surface and groundwater resources.

Water is recognised as a scarce resource and its effective management is important to local communities and the Project's success.

The total estimated demand for the construction of the Surat Basin Rail is in the order of 6,250 – 9,600ML. It has been determined that groundwater from the Great Artesian Basin has the potential to be a significant resource for the construction of the Project in order to supply the regular water points along the 210 km construction corridor.

Water options also exist for coal seam gas water or sub-artesian supply in addition to surface water from the Dawson River. As discussed with the DNRW, a more detailed description of the existing groundwater environment, potential impacts of the Project on the groundwater environment and proposed management/mitigation/monitoring options and requirements will be provided as part of the application process for water licenses and permits

to utilise existing allocated or unallocated water resources in the study area.

### Air Quality

Technical studies have examined potential impacts to air quality. These studies included the cumulative impact of diesel locomotives, coal dust lift-off from coal wagons and the existing background concentrations of pollutants associated with air pollution from these activities.

Dispersion modelling results show that nitrogen dioxide levels, particulate matter, as PM<sub>10</sub> and total suspended particles will not exceed the National Environmental Protection Measures (Air) or Environmental Protection Policy (Air) standards outside the corridor. Based on these studies, the impacts on air quality are considered manageable through accepted practices.

A common concern with the transport of coal is the potential for coal dust



dispersion during transportation of open wagons. Findings suggest that the impacts from dust deposition will be contained within the rail corridor as dust deposition rates are not predicted to exceed the EPA guidelines beyond the corridor.

To ensure minimal impact the control of coal dust emissions will require ongoing consultation between the rail operator and mining customers accompanied by the implementation of appropriate management strategies of coal dust during rail operation.

The Project's estimated contribution to greenhouse gas emissions is in the order of 160,000 tonnes equivalent carbon dioxide (eCO<sub>2</sub>) from construction and a nominal annual contribution around 155,000 eCO<sub>2</sub> from operation of the rail line. Queensland's total emissions in 2006 was estimated to be 170,900,000 tonnes. Consequently, this Project would contribute an additional 0.09% per annum to 2006 State-wide emissions. Ongoing consideration of fuel efficiency through the design process will ensure, as far as practicable, the Project continues to moderate greenhouse gas emissions.

### Noise and Vibration

Construction activities will be audible to the community living and working near the Project. Fifty-five sensitive receivers were identified within 2 km of the preferred alignment and temporary disturbance may be experienced by these residents during the construction phase of the Project.

Noise management strategies will be implemented with appropriate controls to minimise the potential impact on local residents including continued stakeholder consultation and a noise and vibration management plan as part of the construction EMP. This management plan will ensure:

- Construction hours minimise adverse impacts on sensitive receivers;
- Noise criteria recommended by the EPA (ranging from 45 to 60 dB(A) for different buildings and time of day) are achieved; and
- Implementation of specific Blast Management Plans to ensure potential vibration impacts are managed during blasting.

Operation of the rail line will introduce a new noise element into the landscape. Preliminary noise modelling results show this is not expected to exceed statutory limits (assuming the alignment and rail operation occur as described in this EIS). Noise management strategies have been identified and include:

- Limit horn use;
- Installation and maintenance of typical silencing equipment; and
- A complaints resolution procedure that implements an investigation and response on a case by case basis.

### Waste

The construction of the Project will generate waste including organics (mulch), artificial solids (steel, cement, concrete), hydrocarbons (oil, fuels, lubricants), municipal solid waste and waste water. Opportunities exist to

reduce, reuse or recycle waste materials generated. Implementing the waste management strategy recommended in the EIS will help ensure an efficient use of resources, limit the release of waste into the environment, and provide for the safe handling, transport and disposal of waste materials.

The treatment of specific waste streams will be managed through a Waste Management Plan, which will include:

- A hierarchy that prioritises waste avoidance, reuse or recycling over transport of waste to landfill operations for disposal;
- Key construction waste streams, temporary storage, treatment, transport and disposal; and
- Waste management responsibilities of personnel.

### Transport

The preferred alignment requires a total of 140 transport crossings including three state-controlled road crossings (Eidsvold-Theodore Road, the Leichhardt Highway and the Jackson-Wandoan Road at Wandoan), council road crossings and private occupation crossings. Minor public road crossings and private road crossings will be at rail level.

Other public road crossings and Stock Route crossings, as declared under regulation, and private stock crossing will be under or over the railway, where practicable. The location of occupation crossings within private properties is subject to on-going consultation with landowners.

Throughout the construction phase there will be changes to road use and conditions altering the current traffic patterns. Local road users are likely to notice:

- Increase in haulage vehicles transporting materials and other equipment via the regional highways and local road network;
- Temporary road closures;
- Discernible impacts on road durability; and
- Temporary changes to access for some land holders to their properties.

More permanent changes will include:

- New traffic crossings at rail lines;
- Some permanent road reconfigurations; and
- A reduction in traffic following the completion of the Project leading to a decrease in heavy vehicle traffic in the area.

During the construction phase of the Project these potential changes to traffic will be managed via Traffic Management Plans aimed at reducing traffic congestion, providing safe road conditions, and ensuring a safe work site.

Where possible, advantage will be taken of opportunities to transport materials and equipment by rail and via the dedicated access track within the corridor as an alternative to road haulage.

Once the Project is operational, the impact on road traffic as a result of project-related transport will be

negligible and the small number of inspection and service vehicles required for maintenance will mostly be confined to the access track located within the rail corridor.

### Indigenous Cultural Heritage

The study area for the Project has a shared history of use by both Aboriginal and Settler societies and as such a high potential for the existence of cultural heritage places, objects, and values. So as these values can be appropriately identified and managed, separate cultural heritage surveys were undertaken.

Native Title Claimants to the area were consulted and participated in cultural heritage surveys of the preferred alignment.

To protect the heritage values and places identified as part of these surveys the Proponent is committed to negotiating Cultural Heritage Management Plans (CHMP) that will protect archaeological and cultural sites of value and ensure that Aboriginal Cultural Heritage values are appropriately recognised and conserved where possible.

### Non-Indigenous Cultural Heritage

Searches of federal, state, and local registers were combined with consultation with local historical associations and some site work to identify places of non-indigenous heritage values.

There were no places of heritage value identified that have the potential to

be adversely impacted by the Project. Nonetheless, should there be places of as yet unidentified heritage significance identified during the construction or operation phases of the Project, there are provisions to ensure these places are assessed and where appropriate conserved.

### Social Environment

The Project is of a magnitude that it has the potential to result in significant social impacts on local communities in the host region. So as to build an understanding and appreciation of this region, extensive community engagement and desktop research has been undertaken. This research informed the completion of social analysis and identification of potential positive and negative social impacts including impacts on directly affected landowners, broader population impacts and housing and social infrastructure impacts.

Engagement with potentially affected communities enabled the identification of key values held by residents in the region. This process has informed key decisions and connected the Project team to the local community and landowners. The rural nature of the study area has clearly emerged with residents placing value on being able to own and manage agricultural operations and live in close knit rural communities. Primary concerns raised with respect to the Project included changes to access points and associated safety issues, disruption to property management and operation and uncertainty over how the region will be affected by the movement of a large workforce into the region.

Impacts on directly affected landowners will primarily be addressed through fair and equitable property acquisition and compensation processes, which will be complemented by ongoing consultation and implementation of a complaints register and response procedure. The Project will cause an increase in the population of the region, both temporarily, in the form of the construction workforce, and in the longer term as a result of the catalytic nature of the Project, with people moving to the region to take advantage of emerging economic opportunities.

Population impacts may be managed through measures such as the enforcement of behaviour protocols throughout the construction period. More permanent population increases will create demand for housing and social infrastructure.

The most effective means by which the Project can contribute to alleviating any potential regional housing issues is to supply the best possible information and analysis to the public and private entities driving local and regional planning and development.

The Proponent is committed to working in partnership with the public and other proponents in order to allow the necessary planning to occur so that optimum housing solutions may be realised.

### Economic Environment

The strategic value of the Project makes it one of the most economically valuable projects presently being advanced in

Queensland. The economic impacts of the Project have been analysed both from a regional perspective and in terms of the broader economic returns which flow on from construction.

By enabling access of the Surat Basin coal resources, the Project will generate considerable economic returns which will make a significant contribution to the sustained health of the Queensland economy.

It is recognised that the coal industry, the Surat Basin region and the state of Queensland will be the primary economic beneficiaries of the Project. For example, the Queensland Government will receive an estimated \$300 million in royalties per year as a result of an additional 42 Mtpa being exported out of Gladstone. The economic flow-on effects of employment and population generation, increased spending and wealth creation resulting from this large direct injection of funds into the Queensland Treasury is recognised as an overwhelming positive economic impact of state and national significance.

Whilst it is anticipated that a majority of positive economic impacts flowing from the Project are at the state wide and national level, there are also many regional and local economic impacts which flow from a project of this size which has an estimated construction cost in the order of \$1 billion. These potential economic impacts include:

- Directly affected landowners and property management;
- Materials and labour; and
- Population and housing.

The Project will significantly increased economic activity and employment opportunities in the host region.

The influx of wealth and the creation of employment opportunities in the region will on balance lead to beneficial regional impacts such as the generation of regional employment opportunities and the establishment of new businesses and services.

### Hazard and Risk

Due to the nature of the Project there are a variety of hazards and risks that are inherently a part of both the Construction and Operation phases. Such risks include:

- Fire;
- Structural collapse;
- Acts of sabotage;
- Electrocution;
- Bomb or arson threat;
- Level crossing emergency
- Derailment; and
- Track obstructions.

Aware of these issues, the Proponents has developed a number of measures aimed at mitigating these risks. These measures include:

- Development and implementation of emergency procedures for handling and transportation of hazardous goods;
- On-going risk assessment based on changing environment;
- Engineering of fire breaks along the alignment to reduce the movement of any bushfires;

- Provision of suitable security measures for site property and vehicles;
- Provision of suitable access points along the alignment for emergency vehicle access;
- Regular maintenance inspections of the track; and
- Erection of fences to minimise access to the alignment by animals to reduce rail accidents.

### Cumulative Impacts

The Project will be a key factor contributing to the development of the Surat Basin area as a large-scale energy and industrial province. The development of this area and the necessary related infrastructure, including links to essential port export facilities at Gladstone, has the potential for significant environmental impacts throughout Central Queensland.

Considering cumulative impacts recognises that various impacts can combine and interact to cause an aggregate effect that may be different in nature or extent to the individual impact. The EIS has considered:

- Interaction between the individual impacts of the Surat Basin Rail Project on the receiving ecosystems, resources and communities; and
- Environmental impacts caused by the Project in combination with other proposed development in the area including the Wandoan Coal Project, the Moura Railway System Upgrade and other gas, water and power infrastructure projects within the Central Queensland Region.

The Wandoan Coal Project and Moura Railway System Upgrade are of particular interest in terms of cumulative impacts because of their interdependence with the Project and proximity of potential impacts in time and location.

The majority of cumulative impacts between the Surat Basin Rail Project and Wandoan Coal Project are likely to be concentrated where the projects meet geographically near Wandoan. Environmental values such as water, flora and fauna, noise and the socio-economic environment of Wandoan are likely to be impacted by both projects but at a scale that can be adequately addressed through ongoing consultation between proponents, stakeholders and approval agencies.

The Project has considered the increase in rail traffic volumes downstream of the Surat Basin Rail and the potential impact on the capacity of the Moura Railway System. At an operational level, initial train modelling shows that the system can integrate and manage the predicted increase in volume with the planned infrastructure upgrades outlined in QR's Coal Rail Infrastructure Plan.

At a strategic level, negotiations are underway for the Proponent to enter into a commercial agreement with QR Ltd with regard to the potential upgrade of the Moura Railway System to cater for proposed future rail volumes.

Co-location opportunities of other proposed linear infrastructure parallel to the Project corridor have also been explored and the Proponent has worked

with government and other infrastructure providers to consider the feasibility of co-location with other utilities.

For cumulative impacts to be adequately evaluated they must be considered and addressed as individual projects as well as managed on a regional scale by the relevant authorities responsible for approving, monitoring and overseeing impacts on the region.

Overall, the effective management of cumulative impacts requires a cooperative approach between different industries and different levels of government. The Proponent has a responsibility to cooperate with different levels of government and relevant authorities to assist in the identification and management of cumulative impacts.

### Environmental Management

The EMP (Planning) was developed to provide advice on the environmental measures to be considered and included during the design, construction and operation of the Project.

The EMP(P) is based on information about the existing environment, potential impacts and proposed mitigation measures from each of the EIS chapters.

# Surat Basin Rail Pty Ltd Commitments

## Topography and Landform

1. Landform will be re-contoured to provide batters that are stable.
2. Works associated with the disturbance of creeks, surface drainage lines and wetland areas will be designed and managed to reduce the potential for erosion and instability.

## Geology and Soil Erosion

3. Bulk earthworks related construction activities will be planned where practicable to occur during dry periods to minimise the risk of erosion. Where required, erosion control measures will be implemented.
4. Effective erosion and sediment control measures will be developed and implemented in accordance with the Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites – June 1996, endorsed by the Queensland Division of the Institution of Engineers Australia.
5. A Vegetation Management Plan and schedule will be prepared and implemented progressively throughout construction in order to stabilise, where practicable, exposed erosion prone soils and subsoils.

## Land Use and Infrastructure

6. Functionality of affected farm operations will be maintained

ensuring, where practicable, continued operation of the local rural industry. Extended disruptions will be advised in advance and mitigating measures taken where appropriate.

7. Disruption to essential services during construction will be managed.
8. Land owners will be consulted in determining the most suitable fencing standard and fencing maintenance protocol.

## Contaminated Land

9. Existing contamination will be managed in accordance with the Environmental Protection Agency's most recent guidelines and standards.
10. Potential contamination to air, land and water during construction and operation will be managed and reported in accordance with the Environmental Protection Agency's requirements.
11. Any new significant environmental impacts will be reported to relevant government stakeholders to ensure environmental impacts are appropriately assessed and managed.

## Nature Conservation

12. Consideration will be given to fauna-sensitive design to manage potential fauna impacts associated with the Project.

13. Flora and Fauna Management Plans will be developed and implemented to manage potential harm.

14. Clearing of remnant vegetation will be restricted to allow safe construction, operation and maintenance of the Project.

15. An Environmental Offset Strategy will be developed and implemented in consultation with relevant stakeholders in accordance with the *Vegetation Management Act 1999*.

## Surface Water

16. Water quality will be managed in accordance with Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites – June 1996, endorsed by the Queensland Division of the Institution of Engineers Australia.
17. Risk of spills and pollution arising from the transport and storage of fuels and chemicals and vehicle / plant refuelling will be managed through the EMP. Appropriate practices for the storage, transport and use will be developed for all fuel and chemical contaminants.
18. Waterways will not be disturbed for construction activities unless approval has been granted by appropriate authorities.
19. The Project will result in acceptable increases in flood height and velocities with flooding impacts of

the Project contained to acceptable levels.

20. Sustainable use of surface water will be sought through consultation with relevant government agencies and members of the community.

### Ground Water

21. Sustainable use of groundwater will be sought through consultation with relevant government agencies and members of the community.

### Air Quality

22. Dust and other air emissions during construction will be managed in accordance with relevant environmental standards and legislative requirements and in accordance with the EMP.
23. Coal dust will be managed in accordance with environmental requirements. Resource companies and rail operators that use the line will be consulted on the management of coal dust emissions during operation as required.
24. Greenhouse gas emissions resulting from railway operations will be managed in accordance with industry standards and legislative requirements.

### Noise and Vibration

25. Construction noise and vibration will be managed in accordance with relevant environmental standards and in accordance with the EMP.

26. Blasting will be undertaken in accordance with the Environmental Protection Regulation (Part 2a s6l relating to noise and vibration from blasting) to manage the safety of workers and the community. Pre and post blasting surveys will be carried out on critical properties to monitor evidence of structural damage where appropriate.

27. Noise and vibration will be managed during operation through the provision of appropriate design measures, implementation of operational techniques to meet environmental requirements and by promptly responding to community complaints about noise issues, with each issue addressed on a case by case basis.

### Waste

28. Consultation will be held with local authorities to determine an appropriate waste disposal strategy.
29. A Waste Management Plan will be developed in accordance with relevant legislation and the Waste Management Hierarchy: avoid, reuse, recycle, recover energy and dispose.

### Transport

30. A Traffic Management Plan will be developed for the construction phase of the Project in consultation with potentially impacted stakeholders, including Department of Main Roads and local authorities,

to identify appropriate routes, alternative access arrangements and delivery times to manage interference and safety hazards to road users.

31. Road access will be monitored during construction to manage potential interruptions to the community.
32. Local authorities will be consulted regarding the standard of road condition that is to be maintained by the Proponent.
33. Adequate grade separation and level crossings will be provided and designed to industry standards to manage potential interruptions.

### Indigenous Cultural Heritage

34. Cultural Heritage Management Plans will be developed in consultation with native title claimants to identify and protect indigenous cultural heritage values where practicable.

### Non-Indigenous Cultural Heritage

35. Chance finding procedures will be implemented as part of the EMP to ensure that non-indigenous heritage sites are identified and protected where practicable.

### Social Environment

36. Local authorities will be consulted to determine desirable community-based initiatives.



37. Equal Employment Opportunity practices will be embraced to encourage local residents and local Aboriginal and Torres Strait Islander people to be presented with the employment opportunities that arise during construction and operation of the Project.
38. The ongoing community engagement program will continue to be developed and implemented to ensure community awareness and participation in the Projects progression and completion.
40. Contractors building, operating and maintaining the Project will be directed to consider the Queensland Government's Building and Construction Contracts – Structured Training Policy providing structured training for apprentices, trainees and cadets looking for work within the building and construction industry.
43. A Project Emergency Response Team will be established for events outlined in the risk assessment for the construction and operation phase.
44. Procedures and training will be implemented to comply with all legislation and codes relating to the correct storage, handling, transportation and emergency response for dangerous goods and hazardous substances.

#### Hazard and Risk

#### Economic Environment

39. Contractors building, operating and maintaining the Project will be directed to consider the Queensland Government's Local Industry Policy providing opportunities for local business and industries.
41. Safety Management Plans will be developed to include a detailed Project specific construction and operational risk assessment in accordance with AS/NZS Risk Management Standard 4360:1999.
42. Key stakeholders will be consulted to develop and implement appropriate Emergency Preparedness and Response Plans and Procedures for identified risks.
45. An auditing schedule for all management plans will be developed and implemented. This will include a quality assessment within the accreditation regime applicable to each company involved in the building, operating and maintenance of the Project.

# Community Engagement

Since Project inception, community engagement has formed an integral part of the Surat Basin Rail, helping inform key decisions and connecting the Project team to the local community and landowners. The community engagement approach is driven by a strong commitment to create community awareness and understanding of the Project and effectively engage affected landowners.

Throughout these activities, landowners and members of the community identified a number of key concerns important to them. The chart below illustrates a summary of the top ten issues discussed throughout the Project. In some instances these relate directly to technical issues addressed in the EIS, such as access, business operations and noise.

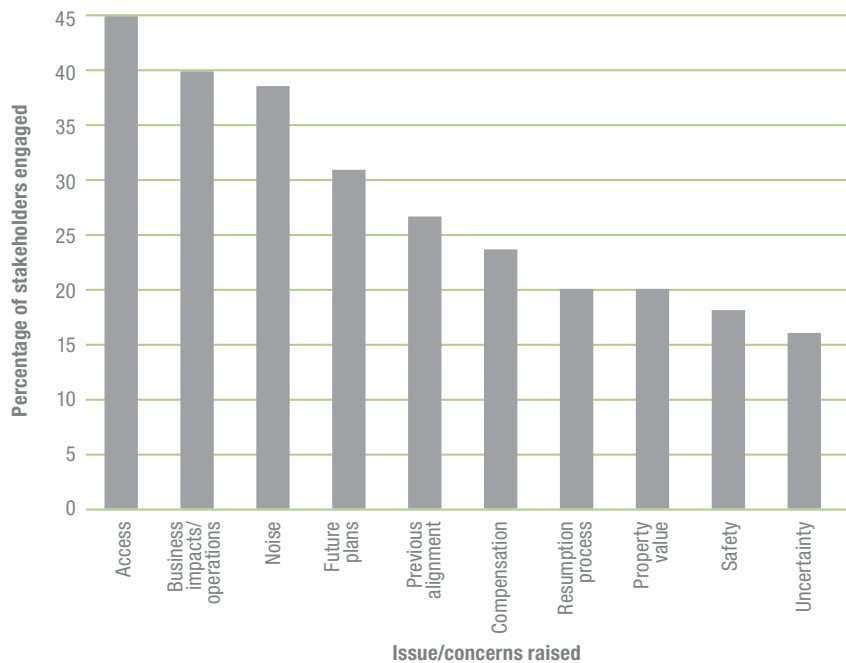
Many of the concerns stem from uncertainty and future compensation. These are common in the early stages of infrastructure projects whilst design work continues to shape the preferred alignment and where there is a potential impact on their financial position and the requirement for a fair and equitable process.

## Community engagement to continue

The Proponent is committed to ongoing engagement with the local community and key stakeholders, and values the relationship built to date. Active engagement will continue to be a key feature of this Project into the future.



Top ten issues (July 2007 - September 2008)





## Making a submission



During the public display of the EIS, the public and Government Agencies are encouraged to review all documents and are invited to make a submission.

It is important to note that submissions must be in writing and must be received by the EIS Project Manager – Surat Basin Rail by the closing date of the public display period.

All submissions need to be sent to:

EIS Project Manager – Surat Basin Rail  
Significant Projects Coordination

Department of Infrastructure and  
Planning

PO Box 15009  
City East QLD 4002

Tel +61 7 3224 2171  
Fax +61 7 3225 8282

suratbasinrail@dip.qld.gov.au

The Surat Basin Rail Joint Venture Partners welcome all submissions from interested stakeholders.

For more information on how to make a submission, please contact the Department of Infrastructure and Planning as detailed above.

This EIS Summary has touched on the key potential impacts of the construction and operation of the Project, as concluded in the EIS.

Reference has been made to the measures proposed to reduce potential impacts and to the commitments made by the Proponent to ensure compliance with the general environmental duty of care. However, the Proponent encourages a review of the full set of EIS documents and welcomes constructive comment.

### Public and agency feedback encouraged

A CD containing the full set of documents, comprising this EIS Summary, Main Text, Appendices and Map Folio is provided with this document.

The full EIS is also available, either:

- Via the website at [www.suratbasinrail.com.au](http://www.suratbasinrail.com.au);
- By phoning 1800 112 143; or
- By attending one of the displays set up at various locations within the region during the public display period.

Complementing the public display of the EIS, there will be a series of community engagement activities to promote awareness and discussion of the findings.

These activities will be advertised in local, state and national newspapers, on the website, and in writing to landowners within the Project's study area.

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# The EIS CD

To read this EIS on your computer you will need Adobe® Acrobat® Reader 7.0 or later.

Adobe® Acrobat® Reader 8.0 has been supplied on this CD.

This PDF supports the Adobe Read Out Loud feature.



