RETURN TO CONTENTS PAGE

# Executive summary

# Executive summary

## Title of the Project

The title of the project is the Jilalan Rail Yard Upgrade Project.

## The Proponent

QR Limited (QR) is the project proponent for the Project. Formed in 1865, QR is a government owned organisation and is subject to the provisions of the *Transport Infrastructure Act 1994* and the *Government Owned Corporations Act 1993.*

The contact details of the proponent are:

QR Limited
ACN 124 649 967
Level 20, 288 Edward Street
GPO Box 1429
BRISBANE QLD 4001

Telephone: + 61 7 3235 5033
Facsimile: + 61 7 3235 2361

QR is currently upgrading its urban rail network (eg TrackStar projects and Salisbury to Kuraby Third Rail Line) and coal rail network (eg Northern Missing Link, Surat Basin Rail Project, Dalrymple Bay Coal Terminal Rail Loop Triplication, rail infrastructure associated with the Wiggins Island Coal Terminal). These projects have commenced construction or are in the planning and/or design stage.

QR has an Environmental Policy under their Environmental Management System which commits the organisation to:

- Applying sound environmental management practices based on the principles of Ecologically Sustainable Development.
- Protecting the environment and the prevention of pollution through all phases of our operations.
- Providing strategic direction to employees in managing environmental impacts with a focus on continual improvement.
- Creating an environmentally aware culture where responsibility is assigned and understood.
- Reporting to and communicating with government, industry and community stakeholders.
- Providing an appropriate Environmental Management System that reflects our major risks
- Providing an audit and review framework to ensure that the system is operational, effective and is meeting these requirements.

In an effort to develop a more sustainable rail transport system, a Sustainability Alliance was formed by QR and the Environmental Protection Agency in May 2006. The Sustainability Alliance will develop key environmental strategies that encourage a progressive, sustainable transport sector from which the broader industry, communities and customers benefit.

## Aims and objectives

The primary aims of the Jilalan Rail Yard Upgrade Project are to provide:

- A new bidirectional locomotive provisioning facility
- A new wagon maintenance facility
- Refurbishment of an existing wagon maintenance building into a new locomotive maintenance facility
- New bypass tracks to eliminate conflicts between through rail traffic and the new yard facilities

The objective of the Project is to meet the current coal export demands at Hay Point and Dalrymple Bay and to ensure efficiency of Queensland's coal rail transport system, specifically the Goonyella Rail System.

The principal objective of the Environmental Impact Statement (EIS) is to identify and assess the environmental impacts that may occur as a result of the Project.

## Legal framework

In April 2007, a delegate for the Commonwealth Minister for the Environment and Heritage determined that the Jilalan Rail Yard Upgrade Project did not constitute a "controlled action" under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*

In May 2007, the Jilalan Rail Yard project was declared a "significant project" under Section 26 of the *State Development and Public Works Organisation Act 1971* by the Queensland Coordinator-General.

As a result of the declaration, an EIS is required to assess the potential construction and operational impacts of the Project. The EIS is to be placed on public display for four weeks and public and agency submissions are invited.

The Coordinator-General will evaluate the EIS and any submissions received during the submission period, prepare a report evaluating the EIS and decide whether the project should be approved (containing conditions and recommendations if required) or refused. The Coordinator-General report will be given to the proponent and the assessment manager as defined under the *Integrated Planning Act 1997*.

The methodology, timing and decisions for various stages in the EIS process are illustrated in Figure 1.

Prior to construction commencing on the proposed rail infrastructure other development approvals will be obtained as required under State legislation.

## Project background and need

### Project background

QR is proposing to upgrade the existing facilities at the Jilalan Rail Yard.

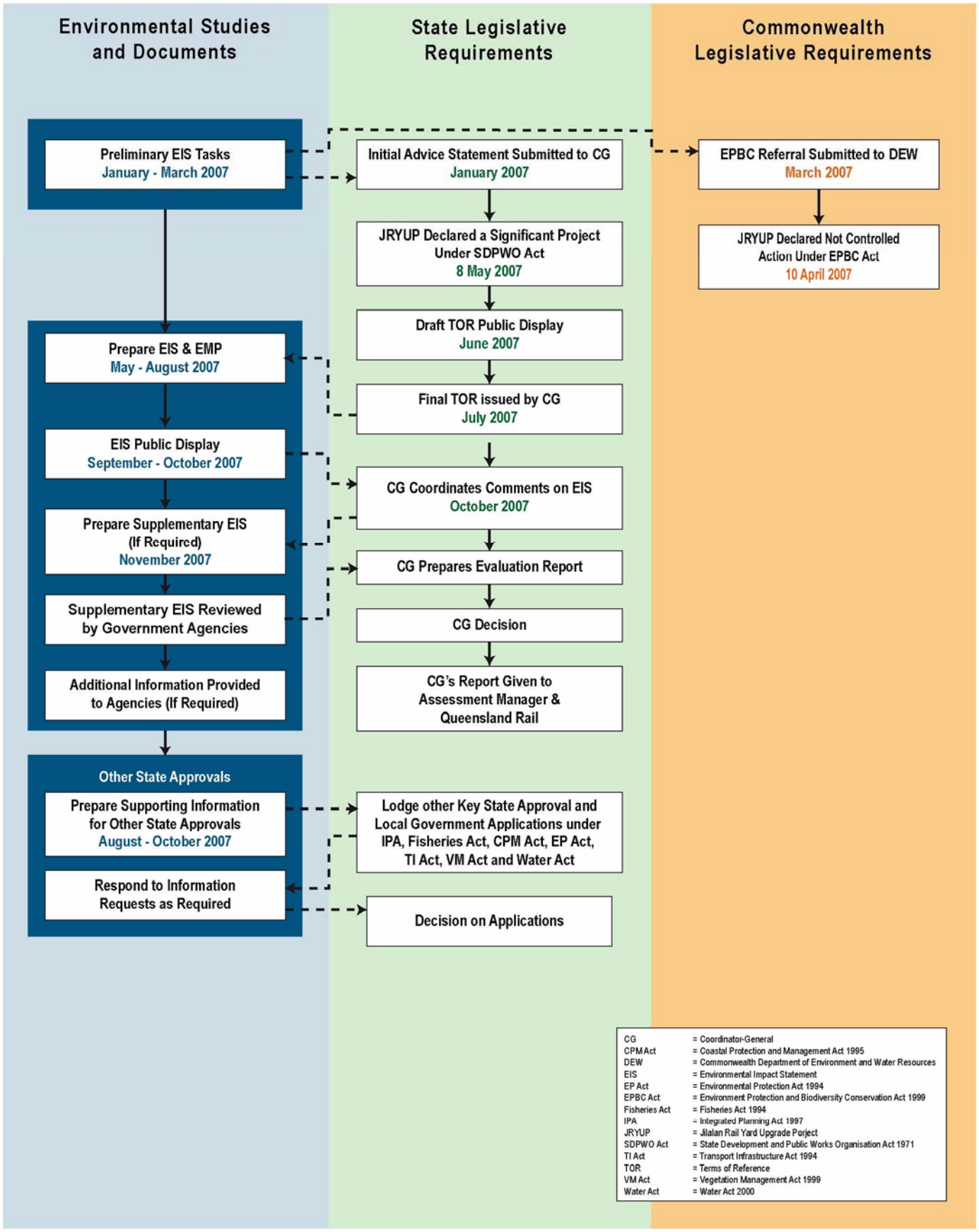
The existing Jilalan Yard is located 3 km south of Sarina, which is approximately 35 km south of Mackay on the central Queensland coast. The yard is approximately 20 km south of the Port of Hay Point (refer Figure 2).

The Jilalan Rail Yards were commissioned in 1971 for smaller head end power trains and have progressively been expanded to meet the increasing demands of coal exports. It is utilised by QR for maintaining and servicing coal trains operating on the Goonyella Rail System which facilitates the transportation of coal to export terminal facilities at the Port of Hay Point.

The Jilalan Rail Yard is a critical node in the Goonyella System supply chain. The yard is currently used for the following functions:

- Queuing loaded trains pending acceptance at coal terminal unloaders
- Staging of trains
- Very limited train sequencing
- Examining trains to identify maintenance requirements
- Removing locomotives and wagons from traffic for maintenance and repairs
- Reforming train sets after servicing, maintenance and repairs
- Provisioning locomotives

# Jilalan Rail Yard Upgrade Project

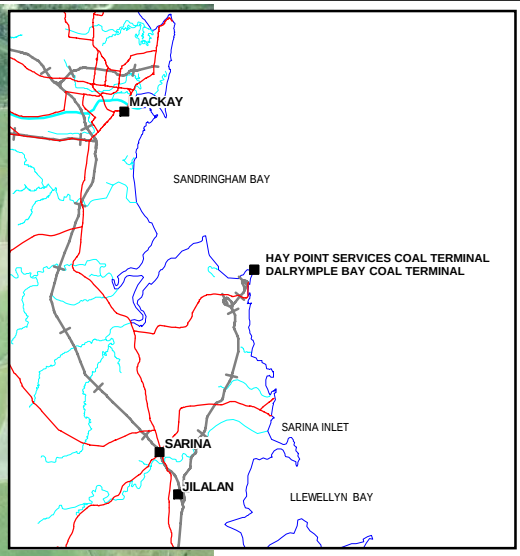



V:\Projects\Qld_Rail\HR5001\GIS\Workspaces\Jilalan_68.wor By: SLG Date: 13/09/07 Version 3

EIS PREPARATION AND APPROVAL PROCESS CHART

FIGURE 1

# Jilalan Rail Yard Upgrade Project


V:\Projects\Qld_Rail\HR5001\GIS\Workspaces\Jilalan_69.wor By: SLG Date: 07/09/07 Version 3

N

0 1000 (m)

Scale 1:20 000 (m) (@ A3 size)

LEGEND

Rail

Project Area

LOCALITY PLAN

FIGURE 2

- Limited stowing of empty trains when not required for service
- Scheduling empty trains back onto the mainline towards mines for loading

## Project need

To facilitate the increase in world demand for Bowen Basin coal, each element of the Goonyella system supply chain is in the process of upgrading their throughput capacities. The QR Network Access 2006 Coal Rail Infrastructure Master Plan proposes a number of rail expansion projects to allow QR to match the port's combined estimated throughput of 130 Mtpa by 2009 and the potential to go to 140 Mtpa in the future.

This escalated demand will require a significant increase in the train fleet servicing the system from Jilalan and will therefore increase the traffic through the yard. Currently there is a disparity between the present design of the operating plan and the design of the yard which is required to meet the operating plan to service the expanded coal terminals and QR's customers.

## Project constraints

The Jilalan Rail Yard is a critical node in the Goonyella system supply chain, however a number of operational and infrastructure inefficiencies require improvement to cater for forecast growth, including:

- Current yard configuration does not allow for flexible sequencing of trains prior to arrival at port.
- Inability to provision loaded trains queuing for the port and restricted bypass ability.
- Minimum track centres not allowing efficient access to trains for examinations and minor repairs.
- Insufficient train examination tracks leading to trains having to be split, increasing the time taken for examinations.
- Outdated locomotive provisioning, rollingstock maintenance, turntable and inefficient overhead wiring isolation issues, limiting network capacity and throughput.
- Insufficient capacity of current workshop facilities to service the planned rollingstock fleet expansion required to meet future contractual obligations.
- Restrictions on main line speed due to rollingstock roll by requirements in the yard.

If the upgrade does not proceed, the existing Jilalan Rail Yard would not meet the forecast system demand and as a result would fail to address industry standards.

The expected Project benefits include:

- Greater rail system robustness with capacity to withstand variations in supply chain and cargo assembly operations under a high throughput Goonyella system.
- Re-sequencing of trains in the yard and not the mainline resulting in an unimpeded passage of mainline trains and reduced occupation of the mainline.
- The ability to stow trains in periods of low demand or during maintenance closures with four tracks holding four full length trains in addition to the provisioning tracks.
- No occupation of the main line during shunting due to the proposed relocation of signals for the shunt neck.
- Removal of delays due to trains waiting to enter the yard.
- The ability to provision trains loaded or empty, thus increasing flexibility in the system.
- Reduced train time in the yard for reliability examinations and provisioning – reduction in partially mitigating overall Goonyella system cycle time increase arising from a fleet increase of 50%.
- Land available for future yard expansion and formation provided to construct a third bypass track or similar if required in the future to service even greater throughput levels.

The proposed upgrade is designed to cater for imminent growth in coal exports through the Dalrymple Bay and Hay Point Coal Terminals. A corresponding increase in the capacity of QR's rail infrastructure is required to accommodate this growth. The upgrade will significantly improve the efficiency at Jilalan as well as directly contribute to an increase in overall capacity.

The Project is consistent with QR's requirement to expand capacity in order to create sufficient available capacity in line with QR's Access Undertaking (2005). This Project has been included in the QR Network Access 2006 Coal Rail Infrastructure Master Plan.

## Alternative options

Alternative locations for the proposed provisioning and maintenance facilities are discussed below.

### Do nothing

This option involves maintaining the yard as it currently is and relying on other projects along the network to meet capacity demands. This option however, ignores the system constraints posed closer to the ports as the lines and trains converge, leading to a constraint situation. A policy of persistence with existing infrastructure in the area near the ports will negate any other improvements along the remainder of the network and fail to address the demand or network inefficiencies. Computer modelling of the rail system demonstrates that without improvements at Jilalan the rail system would not meet the forecast system demand and therefore would fail to address the industry requirements.

### Complete brownfield construction within the yard

This alternative requires building over existing facilities and land that is already within the Jilalan Yard enabling the ability to develop according to a 'blank slate' but on existing land. This will reduce the cost of land acquisitions. However, this option was rejected due to the number of closures required and the considerable impact to the supply chain during the years of construction. Additionally, there could be long-term ramifications of attempting to fit too large a planned project into too small an area. The total cost of this option including new capital and business interruption costs would be much higher than other options being considered.

### Greenfield construction elsewhere

The development of a greenfield site either downstream of Jilalan or upstream of Yukan and leaving the existing facilities as is, was considered. This would reduce the impact on existing facilities until near completion and allow for better long-term planning or the site free from existing infrastructure constraints. Nevertheless, it is considered that there is insufficient space for a greenfield project for new yard facilities such as those predicted in the Jilalan Yard proposal. Moreover the cost of constructing a new facility and integrating it into the network would likely be considerably more than upgrading existing infrastructure.

### Upgrade of Yukan Yard

The Yukan Yard could be considered as an alternative location and was deemed close enough to the port to respond to day of operation issues. However, it is not considered long enough for the works envisaged, which is a key consideration in resolving some of the operational and infrastructure inefficiencies discussed. Also it would require the relocation of key strategic QR assets in order to facilitate the nature of yard facilities predicted in the Jilalan Yard proposal. In addition, QR Network Access would still need the by-pass tracks at Jilalan to improve the capacity of the system to the required level.

## Upgrade of Coppabella Yard

The Coppabella Yard was another potential site for upgrade of the existing facilities. However, the further away from the coal terminals the less ability to "fine tune" the sequencing and the on time operation to these terminals required under a high throughput future scenario. The greater the distance from the terminals brings a reduced ability to react to changes. Coppabella Yard also does not capture the three mines to the east of it, which would affect its ability to effectively manage the entire throughput to the ports. The length of the existing yard can not accommodate the nature of the facilities predicted in the Jilalan Yard proposal with out substantial modifications which would have a substantial capital and business disruption costs. As well as this, there would be significant staffing challenges in relocating the main Goonyella system yard facility to this location.

## Upgrade of Jilalan Yard

The Jilalan Yard upgrade is considered to provide the best opportunity to directly improve the system capacity of the network following an upgrade. It is located close enough to the ports to be able to respond quickly to variations in demand, while also occupying enough space and having enough suitable land around to make the necessary expansions feasible. This location would employ both greenfield construction for the new lines and brownfield construction on some of the existing infrastructure and will allow for capacity to be achieved whilst not unduly affecting ongoing throughput. Finally, the Jilalan Project is the preferred option to address the limitations identified and achieve the necessary system capacity required.

Jilalan Yard is an established rail operations depot and therefore duplicating such a facility in another location for the same operator would induce additional inefficiencies into the system thus increasing the haulage cost per tonne of coal. As well, the current operational inefficiencies that occur at Jilalan would still need to be addressed if part of the planned investment was constructed at an alternative location (eg bypass tracks).

Thus the construction of the full planned development on a predominately Jilalan greenfield site will result in the best overall economic solution for the participants in the supply chain.

## Jilalan Yard options

The preferred project delivery strategy for the JRYUP was by way of an Alliance between QR, a designer (Connell Wagner, Hatch and Parsons Brinkerhoff) and constructor (Macmahon and MVM Rail).

The identification of alternative layout options with the potential to improve operational capacity, constructability, time and cost outcomes for the Project started during the selection process for the Alliance. At the same time, the Alliance sought to define the operational requirements for the Project. A total of three layout options (two with two variants) had the potential to meet all of these requirements and were subjected to a more detailed evaluation. It must be noted that further refinement and value engineering of the preferred option will be carried out in the project definition phase of the Alliance works.

Figures 3 and 4 illustrate the various options considered.

The criteria used to evaluate each of the options included:

- Operational requirements
- Construction schedule
- Environmental impact
- Future expansion requirements
- Health and safety
- Life cycle cost
- Operational disruption
- Land procurement
- Inter-disciplinary issues

For the comparative purposes of this analysis the costs for Option 1 have been set to $0 and all other options considered as a net difference. Only the areas where the scope differs have been compared.

# Jilalan Rail Yard Upgrade Project

OPTION 1

OPTION 2

V:\Projects\Qld_Rail\HR5011\GIS\Workspaces\Jilalan_70.wor By: RAG Date: 07/09/07 Version 2

LEGEND

Proposed Rail Alignment

RAIL ALIGNMENT
OPTION 1 AND OPTION 2

FIGURE 3

# Jilalan Rail Yard Upgrade Project

OPTION 3A

OPTION 3B

V:\Projects\Qld_Rail\HR5011\GIS\Workspaces\Jilalan_71.wor By: RAG Date: 07/09/07 Version 2

LEGEND

Proposed Rail Alignment

RAIL ALIGNMENT
OPTION 3a AND OPTION 3b

FIGURE 4

The table below summarises the evaluation results by option against each of the criteria. Results are presented relative to Option 1. **Bold** font indicates preferred option for that particular criterion.

Summary of Jilalan Rail Yard Upgrade option analysis

| Evaluation criteria | Option 1* | Option 2 | Option 3a | Option 3b | Option 4 |
|---|---|---|---|---|---|
| Operational Requirements | Complies | Complies | Complies | Complies | **Complies** |
| Whole of Life Cost Differential | $ 0 | Higher cost than option 1 | Higher cost than option 1 | **Lower cost than option 1** | **Comparably Lower cost than option 1** |
| Construction Schedule | | | | | |
| Practical Completion | 5 May 2010 | 4 May 2010 | Not Assessed | 30 Dec 2009 | 31 May 2009 |
| Bypass/Prov Open | 17 Nov 2009 | 13 Mar 2010 | Not Assessed | Oct 2009 | Oct 2009 |
| Wagon Open | 24 Feb 2010 | 12 Nov 2009 | Not Assessed | 30 Dec 2009 | 30 Dec 2009 |
| Operational Disruption | Very High | **Medium** | High | High | High |
| Environmental Impact | Impact on Elizabeth and Willy Creeks<br>Landowner Impacts N and S | Significant impact on Elizabeth and Willy Creeks | High impact on Plane Creek<br>Landowner Impacts N | **Impact on Elizabeth and Willy Creeks**<br>**Landowner Impacts N** | **Impact on Elizabeth and Willy Creeks**<br>**Landowner Impacts N** |
| Future Expansion Requirements | Complies | Complies | Complies | Complies | **Complies** |
| Inter-Disciplinary Issues | Complex OLE tie-ins N and S | Significant additional scope | Complex OLE tie-in N | Complex OLE tie-in N | **Complex OLE tie-in N** |
| Health and Safety (ranked in order of preference) | 5 | 4 | 3 | 2 | 1 |

Table Notes:
* Base case option
N North
S South
OLE Overhead line equipment
Shading Preferred option

**Option 4** is the preferred option. The comparison is similar to Option 3b, however an additional three tracks were added to the scope for Option 4, resulting in a longer construction schedule and additional impact on Willy and Elizabeth Creeks.

Option 4 is preferred in terms of health and safety, removing a number of construction and operational related hazards present in the other options. The use of the existing level crossing to construct the embankment at the northern end of the yard is a significant residual construction hazard that will have to be carefully controlled during implementation.

Figure 5 illustrates Option 4 which is the concept design adopted for the purposes of the EIS.

## Project description

The land surrounding the yard is predominantly used for the cultivation of sugar cane, with associated residential dwellings sparsely scattered throughout. It is understood that cattle are also farmed on the property to the west of the rail yard, south of Oonooie Road.

# Jilalan Rail Yard Upgrade Project

Connell HATCH
Infrastructure for Industry

OPTION 4 - NORTHERN SECTION

OPTION 4 - SOUTHERN SECTION

V:\Projects\Qld_Rail\HR5001GIS\Workspaces\Jilalan_72.wor By: RAG Date: 07/09/07 Version 2

LEGEND

- Above Rail - QR National
- Below Rail - QR Network Access
- Future Track

CONCEPT DESIGN
OPTION 4

FIGURE 5

An existing industrial facility is located adjacent to and east of the rail yard at the southern end of the project area. This facility is owned and operated by CSR and produces fertiliser from sugar mill waste and other biological matter. It is understood that an expansion of this operation to approximately double the current capacity is currently being considered.

## Pre-construction activities

Pre-construction activities on site are likely to include:

- Survey
- Geotechnical drilling and investigations
- Establishment of site project offices
- Construction access roads, haul roads and hardstand areas
- Foundation works
- Utility services relocations
- Construction of accommodation village

The location of site office and worker compounds is not yet confirmed, however it will be located within the project area so as to be close to the major construction centres and yet avoiding conflicts with construction activities.

## Rail infrastructure works

The construction of the rail infrastructure will involve:

- Site setout and pegging.
- Clearing – utilising dozers, chainsaws, excavators, trucks and similar equipment. Much of the site will be situated over existing cane fields. While these will not be farmed after the 2007 harvest, it is expected that cane regrowth will need to be cleared prior to construction. Where practical to do so, the remaining felled material will be stockpiled and mulched for later reuse on batters and within landscaping. If weed infestations are encountered, the cleared vegetation will be disposed in an appropriate manner to minimise the spread of infestation.
- Ground improvement measures – this may include wick drains, preload, geofabrics, surcharge and lime treatment. In some localised areas ground replacement may be undertaken. These operations will use trucks, excavators, piling machines, rollers, water carts and other sundry equipment.
- Bulk earthworks – major cut to fill operations include the winning of suitable construction material from sections of cut along the railway alignment or from borrow areas external to the site.
  - It is expected that all cut and borrow activities will be achieved by mechanical means (dozers, scrapers, excavators), however there may be a need for blasting if less fractured rock is encountered.
  - Equipment used in the bulk earthworks construction will include scrapers, excavators, haul trucks, water carts, compactors and graders as well as other sundry equipment.
- Construction of concrete railway bridges and culverts. This will include piling and construction of concrete piers and headstocks. Precast concrete units or girders will be used to form the bridge superstructure and may be incrementally launched over the crossings. It is envisaged that all materials for bridge structures will be delivered by road.
- Track laying, including the placement of ballast and steel rail which will be delivered by rail. The remaining materials, including sleepers and turnouts may be delivered by road.
- Overhead electrical equipment. Materials for this will be delivered by road.
- Installation of railway signalling and communications equipment.

- Construction of railway maintenance facilities, administration and amenities buildings, car and truck parking and fuel storage areas. Materials for the buildings will be delivered by road.

The construction of the bulk earthworks for the Project will involve the movement of approximately 1.2 million $m^3$ of rock and soil material.

The railway infrastructure will include approximately 50,300 m of trackwork and 74 turnouts.

The origin of materials delivered to site is not confirmed as it will be subject to Contractor and Supplier availability, however access will be via the Bruce Highway.

### Operational activities

QR National will undertake the following activities in the upgraded Jilalan Rail Yard:

- Maintenance of wagons and locomotives.
- Provisioning including sanding and decanting of locomotives.
- Rollingstock examinations including attaching and detaching of wagons and locomotives.
- Fuelling of diesel shunt locomotives with provision to diesel main line locomotives in future.
- Washing of wagons and vehicles.
- Fuelling of road and maintenance vehicles.
- Lighting of yard (upgraded yard lighting to be provided).

Additional or upgraded pollution control facilities will be provided to support the upgraded facilities.

### Indicative construction timetable

The principal construction activities are proposed to commence immediately following the wet season in February/March 2008. Construction is likely to be required in shifts over 24 hours per day. While it is intended to undertake construction six days per week, it is possible that construction may be required seven days per week to meet the tight scheduled programme.

The bulk of the construction activities will need to be completed before November 2009 in order to allow for commissioning to be completed by the end of 2009. Some construction work may take place during this time, particularly if it is independent of the commissioning process.

## EIS findings

The key findings of the EIS are:

- The Project will allow delivery of coal to the Port of Hay Point at a significantly increased rate to match demand for rail transport capacity.
- Landholders whose land is required for the Project will be financially compensated in accordance with Government policy.
- The potential land use benefits of the Project will outweigh the direct property impacts and other potential land use impacts.
- The Project complies with the planning intentions of the Sarina Shire Council Planning Scheme and will comply with the applicable Commonwealth and State legislation.
- The Project requires a Material Change of Use development approval under the Sarina Shire Council Planning Scheme. Other environmental approvals are also required.
- Soils within the project area range from medium to very high potential risk of dispersion. Erosion and sediment control measures will be implemented to protect soils from potential erosion.

- Potential Acid Sulfate Soils occur within the area. Potential impacts from disturbance of these soils will be mitigated by minimising exposure in high risk areas and by implementing an Acid Sulfate Soil Management Plan during construction.
- Land use changes, extension of engineered landforms and construction activities will impact on the formation, structure and potential stability of topographical features within the project area. Mitigation of these impacts will be achieved through design for landscaping, revegetation and engineering ground improvements.
- Areas of exposed sandy/silty clays, sandy silts, clayey gravels, clayey/silty sands may experience trafficking problems during construction, particularly after periods of rainfall. Ground improvement and preparation measures will be implemented prior to construction to mitigate the potential impacts to construction programmes.
- The potential impacts from settlement will be mitigated through design of appropriate ground treatment and improvement measures as an outcome of further geotechnical investigations.
- A number of areas of concern were identified in relation to the potential for existing contamination within the project area and land directly adjoining. Further investigations will be required to assess the potential risk of these areas prior to construction and site disturbance.
- Drainage lines and areas of vegetation to be retained are vulnerable to potential contamination resulting from material storage and construction site activities. Mitigation of these impacts will be achieved through appropriate siting of construction sites and material storage areas away from vulnerable or sensitive locations.
- The construction of the rail infrastructure and associated road works will result in the removal of approximately 10.1 ha of terrestrial vegetation and 0.2 ha of marine plants. While 10.3 ha of native vegetation will be cleared for the Project, this is mitigated by:
  - Supplementary planing which may be possible along the remaining riparian vegetation along Elizabeth and Willy Creeks.
  - Avoiding areas which may contain rare and threatened flora.
- The impacts to native fauna are the severing of two corridors, removal of habitat and increased edge effects. Some fauna species will be forced to relocated and compete for resources in the surrounding areas. The implementation of mitigation and management measures during the construction and operation of the rail infrastructure will ensure that potential impacts to terrestrial and aquatic flora and fauna within the area is minimised.
- Analysis along Elizabeth Creek showed that the velocity and peak discharge of the flow as it leaves the project area is similar to existing levels and it is unlikely to be necessary to undertake further works to lessen the impact of flooding on Gurnetts Road.
- Scour protection will be required at all bridge abutments, culvert inlets and outlets and the base of the Elizabeth Creek channel to mitigate erosion from high velocity flows.
- Downstream of Elizabeth Creek, highly elevated levels of nutrients were recorded.
- Water used during construction will be monitored to ensure compliance with relevant standards and guidelines and protect against adverse impacts to the surrounding environment, particularly relating to soil salinity levels and associated impacts.
- Diversion of Elizabeth Creek will be mitigated through the maintenance of base flow conditions within the stream channel to reduce the potential impact on aquatic ecology downstream of the project area.
- Construction will only have a relatively minor impact on the existing groundwater regime. The extent of impact will be confined to within a few hundred metres of each excavation.
- Project design will need to account for the presence of groundwater within the project area, which has the potential to impact on embankment stability, floor heave and issues associated with the management of corrosive water.

- Results from the air quality assessment indicate that air quality will remain below the relevant air quality standards and goals at sensitive receptors within the Jilalan area.
- Existing conflict points between road and rail will be removed by grade separation, improving safety and traffic flow around the site and its access points. Impact to the road network will be further mitigated through the construction of internal haul roads. Access will be regulated with signage, gates and fencing where practicable.
- Construction noise and vibration can be adequately mitigated by implementing a Construction Noise and Vibration Control Sub Plan and associated mitigation measures.
- Operational activities will comply with relevant approved conditions, policies and QR's Code of Practice for Railway Noise Management to minimise noise and vibration impacts on sensitive receptors within the Jilalan area.
- Waste minimisation, reuse and recycling policies and procedures will be implemented during construction and operation to minimise the impact of the Project on the waste stream.
- While the Project will change the existing visual landscape of the area, the proposed rail upgrade is consistent with the adjoining Jilalan Rail Yard and proposed mitigation measures will assist in minimising the visual impact.
- The estimated peak construction workforce is approximately 300 employees. Temporary accommodation for the majority of those employees will be within the Project Accommodation Village located at the Sarina Golf Course.
- There is sufficient land available in Sarina Shire to accommodate the anticipated operational workforce.
- The Project will result in the loss of approximately 100 ha of Good Quality Agricultural Land which is currently under sugar cane production.
- Cane land to be acquired as a result of this Project will result in a small reduction in the total contract area supplying CSR Plane Creek Mill, however the overall economic benefit associated with the Project to increase the capacity to transport coal from the mines to the Port is significant to both the local, regional and State economy. Additionally, CSR are likely to develop approximately 120 ha of cane land within the Jilalan area in the future.

## List of Proponent commitments

The key commitments for implementation during construction and operational phases of the Project are summarised in the table below.

## Proponent commitments

| Environmental area | QR's commitment |
|---|---|
| General | • The proponent will take all reasonable and practicable measures to minimise the likelihood of environmental harm being caused<br>• The proponent will ensure the design minimises the environmental footprint<br>• The proponent will prepare and implement a Construction EMP for this project that includes:<br>– Erosion and Sediment Control Plan<br>– Acid Sulfate Soil mitigation measures<br>– Flora and Fauna Sub Plan<br>– Revegetation Sub Plan<br>– Weed Management Sub Plan<br>– Water Quality Monitoring Programme<br>– Dust Management Sub Plan<br>– Noise and Vibration Management Sub Plan<br>– Waste Management Sub Plan<br>– Cultural Heritage Management Plan<br>– Other measures contained in the EIS EMP<br>• The proponent will prepare and implement an Operational EMP<br>• The proponent will continue to provide project updates and progress to the community and stakeholders |
| Land use, planning and approvals | • The proponent will obtain all required planning and environment approvals for the construction and operation, and implement the management measures and conditions<br>• The proponent will ensure the protection of adjoining existing sensitive land uses in terms of amenity (noise, visual, lighting), specifically during the planning phase of the project |
| Topography, geology and soils | • Erosion and sediment control plans will be developed and implemented as part of the Construction EMP<br>• The Engineering Guidelines for Queensland for Soil Erosion and Sediment Control (IEAust 1996) will be implemented |
| Nature conservation | • To offset the removal of vegetation and marine plants, the proponent will develop a Revegetation Management Sub Plan in consultation with relevant authorities (eg DNRW, EPA and DPIF)<br>• Safe fish passages will be constructed through Elizabeth and Willy Creeks in accordance with DPIF guidelines<br>• Vegetation to be cleared will be clearly marked by tape, pegs, etc and will not rely on design drawings. No go zones to be clearly marked.<br>• Vegetation clearing will be restricted to that necessary for the project works<br>• The proponent will develop and implement a Flora and Fauna Management Sub Plan and Weed Management Sub Plan during construction |

| Environmental area | QR's commitment |
|---|---|
| Water quality | • During construction, routine water quality monitoring will be implemented<br>• During the operation phase of the Project, the proponent will continue water quality monitoring of Elizabeth and Willy Creeks, measuring a range of physico-chemical parameters in accordance with licence conditions<br>• The proponent will adopt water efficiency strategies during construction and operation<br>• Erosion and sediment control measures will be implemented and maintained to minimise erosion and the release of sediment, particularly at Plane, Elizabeth and Willy Creeks and the wetland<br>• Treated stormwater runoff waters will only be released in compliance with the EPA ERA licence conditions<br>• The proponent will minimise potential mosquito breeding sites onsite by preventing ponding waters |
| Air environment | • The proponent will undertake dust monitoring at selected locations with the project area during construction<br>• During construction, the proponent will ensure watering of unsealed roads to minimise the release of dust and particulate matter<br>• Any dust complaints will be actively investigated and the complainant will be consulted of the outcome<br>• The proponent will implement the relevant findings of QR Coal Loss Environmental Evaluation during the operational phase of the Project |
| Noise and vibration | • Any noise complaints will be actively investigated and the complainant will be notified of the outcome |
| Waste | • The proponent will develop and implement a site specific Waste Management Sub Plan<br>• The proponent will ensure any waste generated are stored, handled and transferred in a proper and efficient manner and are not released into the environment |
| Cultural heritage | • The proponent will develop a Cultural Heritage Management Plan (CHMP) and will ensure Aboriginal Duty of Care throughout the project<br>• The proponent will incorporate cultural heritage awareness into worker induction programmes |
| Visual and lighting impacts | • Existing vegetation will be retained where possible and removed only when necessary for the project works<br>• Where vegetation is removed these areas will be progressively rehabilitated<br>• Construction and operational lighting will have shields around the globes and will be limited to extraneous lights where practicable<br>• Vegetated native buffer zone along western side of Gurnetts Road to be provided |
| Social and economic | • The proponent will ensure ongoing and transparent consultation of adjoining landowners, canegrowers, Sarina Shire Council and other stakeholders<br>• The proponent will explore opportunities through project design for future stakeholder benefits |
| Traffic impacts | • The proponent will develop and implement a Traffic Management Plan<br>• The proponent will upgrade the existing road network at Oonooie Road in consultation with CSR |

| Environmental area | QR's commitment |
|---|---|
| Hazard and risk | • All staff will be trained in emergency response procedures<br>• The proponent will take into consideration the potential for mosquito breeding during the design phase<br>• Where possible, the proponent will adopt the quietest plant and equipment to achieve minimal noise impacts on nearby residents given construction is proposed 24hours/7days per week |

## Conclusion

The EIS concludes that the proposed Project will have an impact on the existing environment within and adjoining the project area through ecological and social aspects.

The EIS also concludes that the potential for adverse impacts during construction and operation will be mitigated through the implementation of appropriate safeguards and management measures. Best practice environmental management will be adopted and implemented throughout the Project for all environmental aspects.

In summary, the Project can be constructed and operate in a manner that addresses and meets all relevant statutory goals and criteria, environmental objectives and considerations, and reasonable stakeholder expectations.