18. Findings and conclusions

18.1 EIS findings

The key findings of the EIS and Supplementary 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 107 m^2 of marine plants. The clearing of native vegetation will be mitigated by:
  - Supplementary planting adjacent to the remaining riparian vegetation along Elizabeth and Willy Creeks (within land owned by QR).
  - Avoiding areas which may contain rare and threatened flora.
  - Providing a 20 m vegetation buffer adjacent to Plane Creek.
  - Providing a vegetated riparian zone along the high flow bypass channel between Elizabeth and Willy Creeks.

- 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.

18.2 List of Proponent commitments

The key commitments for implementation during construction and operational phases of the Project are summarised in Table 18.1.

Table 18.1 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 • The proponent will ensure the design minimises the environmental footprint • The proponent will prepare and implement a Construction EMP for this project that includes: – Erosion and Sediment Control Plan – Acid Sulfate Soil mitigation measures – Flora and Fauna Sub Plan – Revegetation Sub Plan – Weed Management Sub Plan – Water Quality Monitoring Programme – Dust Management Sub Plan – Noise and Vibration Management Sub Plan – Waste Management Sub Plan – Cultural Heritage Management Plan – Other measures contained in the Supplementary EIS EMP and Draft Construction EMP • The proponent will prepare and implement an Operational EMP • 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 • 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 • 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) • Safe fish passages will be constructed through Elizabeth and Willy Creeks in accordance with DPIF guidelines • 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. • Vegetation clearing will be restricted to that necessary for the project works • 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 • 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 • The proponent will adopt water efficiency strategies during construction and operation • 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 • Treated stormwater runoff waters will only be released in compliance with the EPA ERA licence conditions • The proponent will minimise potential mosquito breeding sites onsite by preventing ponding waters • Where possible, discharges into the creek systems will be located adjacent to proposed crossing structures. The scour protection at these structures will be utilised to minimise erosion from the discharging water. Where water is required to discharge into the creeks and is not able to be co-located with structure scour protection, additional rock protection will be provided at these locations. Details of the quantity, size and depth of rock protection will be determined during detailed design. • All stormwater generated on the site will be separated depending on the location in which it is generated. All process areas, including the internal areas within the shed will be directed to the pollution plant. Apron areas adjacent to these process areas will be fitted with a first flush diversion system to re-direct the first 25 mm of rainfall to the pollution plant. Surplus water from the roofs will be directed into rainwater tanks for re-use, with surplus water and flows from all other areas directed to stormwater channels running through the site.
Air environment	• The proponent will undertake dust monitoring at selected locations with the project area during construction • During construction, the proponent will ensure watering of unsealed roads to minimise the release of dust and particulate matter • Any dust complaints will be actively investigated and the complainant will be consulted of the outcome • 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 • 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 • The proponent will incorporate cultural heritage awareness into worker induction programmes

Environmental area	QR's commitment
Visual and lighting impacts	• Existing vegetation will be retained where possible and removed only when necessary for the project works • Where vegetation is removed these areas will be progressively rehabilitated • Construction and operational lighting will have shields around the globes and will be limited to extraneous lights where practicable • A 50 - 100 m 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 • The proponent will explore opportunities through project design for future stakeholder benefits
Traffic impacts	• The proponent will develop and implement a Traffic Management Plan • The proponent will upgrade the existing road network at Oonooie Road in consultation with CSR • A dilapidation assessment of roads adjacent to the site will be undertaken prior to commencement of construction. Where additional damage is shown to be directly attributable to construction traffic, appropriate repairs will be made.
Hazard and risk	• All staff will be trained in emergency response procedures • The proponent will take into consideration the potential for mosquito breeding during the design phase • 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

18.3 Conclusion

The EIS and Supplementary EIS conclude 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 and Supplementary EIS also conclude 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.