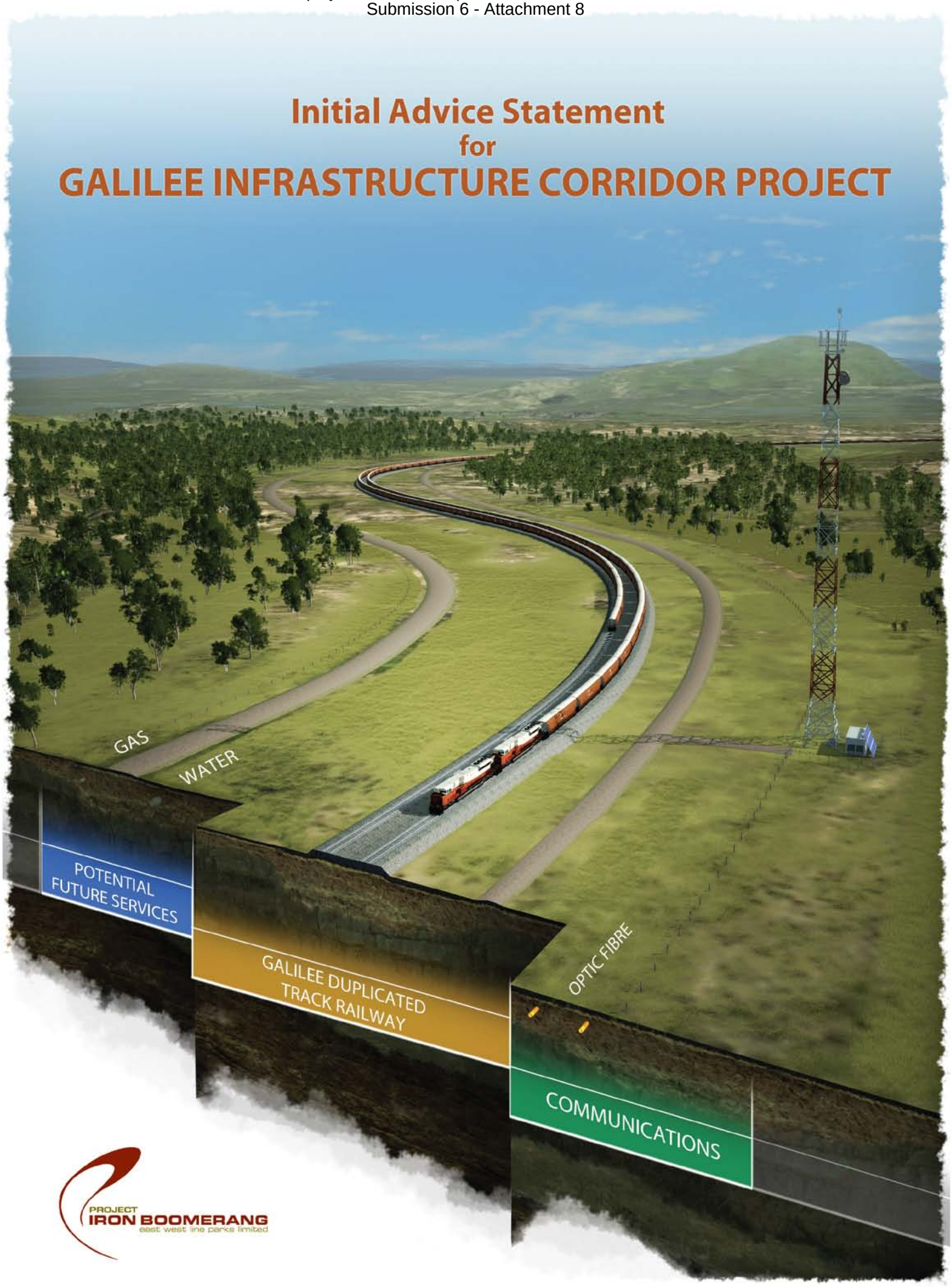
Appendix 8


GAS
WATER
POTENTIAL FUTURE SERVICES
PROJECT IRON BOOMERANG CONTINENTAL RAIL CORRIDOR
OPTIC FIBRE
COMMUNICATIONS
PROJECT
IRON BOOMERANG
east west line parks limited

Initial Advice Statement
for
GALILEE INFRASTRUCTURE CORRIDOR PROJECT



East West Line Parks Limited

March 2012

Disclaimer

The illustrations appearing in this document are conceptual and are not drawn to scale, and they are not representative of a particular region or location and should not be construed as a facsimile of a conceptual multi user infrastructure corridor.

This document has been prepared by East West Line Parks Limited (EWLP) based upon available information in the public domain and content supplied by specialist consultancies that have subject matter expertise in their knowledge domain.

All statements, other than statements of historical fact, are forward looking and involve risks and uncertainties. There can be no assurances that such statements will prove accurate.

Actual results and events could differ materially from those anticipated in statements.

EWLP does not assume the obligation to update any forward looking statement.

Table of Contents

Executive Summary

East West Line Parks Limited (EWLP), in this context referred to as the "Proponent", is a public company incorporated in the State of Queensland, which proposes to develop a Galilee Infrastructure Corridor.

Separately, EWLP is also the proponent of a nation-building Project known as Project Iron Boomerang (PIB), which involves the development of slab steel manufacturing facilities on Australia's east and west coasts strategically connected by a transcontinental rail crossing. The Galilee Infrastructure Corridor proposed in this Initial Advice Statement ("IAS") will potentially form part of the eastern segment of the proposed transcontinental rail crossing.

The Proponent intends to build, own and operate a 650km open access, multi user, multi-purpose infrastructure corridor (the Corridor) from the Port of Abbot Point to the coal mining regions of the Bowen and Galilee Basins.

The Corridor will be complete with rail and telecommunications infrastructure and comprised of the following three elemental sections:

- a 390 kilometre length of corridor from the Abbot Point State Development Area to a junction north of North Goonyella in the Bowen Basin then continuing west to the northern end of the Galilee Basin;
- a 230 kilometre length of corridor extending from the northern Galilee south along the length of the Galilee Basin and terminating near the town of Alpha to transport thermal coal from proposed mines; and
- a 30 kilometre spur line from the junction near North Goonyella south to a narrow gauge transfer hub near Moranbah to service primarily the transport of metallurgical coal.

The Corridor will be used primarily to site a dual track, standard gauge, heavy haul railway system and a carrier grade high availability communications network (for train control and general communications) with the capacity to provide coal and other freight services to current and future mining operations in the two coal mining regions, and other communities adjacent to the Corridor.

The Project will facilitate the Proponent's vision for an open access freight Corridor to Abbot Point, which is justified for the compelling economic and community benefits it will provide, including the following:

1. services the doorstep of all Galilee Basin mining tenements and aggregates their freight volumes via a single multi user, infrastructure Corridor containing a standard gauge, heavy haul rail system that delivers optimum economic efficiency to all users;
2. simultaneously introduces a standard gauge, heavy haul freight solution to Abbot Point from an integrated rail location central to the Bowen Basin coalfields;
3. provides the Abbot Point State Development Area and the proposed new port facilities with a high capacity rail connection incorporating state-of-the-art, carrier grade telecommunications to assist the centralised management of all rail traffic entering;
4. for the entire Corridor incorporates advanced train control signalling on a common shared platform for optimised freight efficiency in a multi user environment;
5. promotes the State's yet unrealised ambition to connect the minerals region around Mt Isa (the North West Minerals Province) to the east coast via a heavy haul rail

corridor of optimum economic efficiency by advancing such an asset nearly half the required distance; and

6. provides for future community utility services to be located within the corridor.

Further, the Corridor is sensitive to the need to preserve valuable cropping land and existing farming and other key established land uses in the parts of regional Queensland that it traverses. From its terminus at Abbot Point the Corridor alignment to the south and west maximises its proximity as far as practical to the existing Bowen Basin rail corridor. Heading west from the junction at North Goonyella to the northern Galilee Basin it follows the foothills of higher land formations at relatively flat longitudinal grade and remains to the north of the major black soil areas and out of flood plains. Its route therefore minimises impacts on valuable agricultural lands to the south of the Corridor. Then adopting a generally north-south alignment along the Galilee Basin back towards its point of origin near the town of Alpha, the Corridor continues to bypass agricultural zones whilst remaining strategically close to all of the mining tenements.

With its planned minimum encroachment on valuable agricultural cropping, cattle grazing lands and black soil floodplains, together with specially designed rolling stock to minimise required trip frequencies and avoid dust emissions, the Corridor therefore minimises environmental and community impact.

Community consultation on the Project concept commenced in 2006 in cooperation with the Mayors of the Whitsunday and Isaac Regional Councils. Regular presentations and information updates have been given at Council meetings, community meetings, with land owners, with farmers, and peak local groups including the Corridor to Coast group and economic development enterprise organisations.

The Project is of strategic significance in that it will:

- contribute to the Government's Infrastructure Policy, the promotion of domestic capital formation, and shape future infrastructure planning and development in Queensland;
- support the National Government's infrastructure priorities as outlined in the 2011 Report by Infrastructure Australia to the Council of Australian Governments including the delivery of Competitive International Gateways, A National Freight Network and a National Broadband Network;
- contribute to the long term employment sustainability in the regions for the existing industry sectors and open up upstream and downstream development opportunities realised by existing and potential industries utilising the Corridor;
- have the capacity to serve multiple sectors including agriculture and pastoral, not only the mining sector;
- function as a trade corridor and provide foundation customers in support of the Multi-Cargo Facility at the Port of Abbot Point;
- enable an efficient use of land and resources within the current Corridors owned by the Coordinator General in the Abbot Point State Development Area and within the Corridor owned by North Qld Bulk Ports;
- eliminate the need for multiple corridors connecting to the Galilee basin and thereby reduce financial costs involved in the development of a multiplicity of rail corridors currently proposed;

- have the capacity to provide for multiple uses into the future including water, energy and information and communication technology infrastructure to support regional development in Queensland;
- contribute to the utilisation of existing Government Owned Corporation (GOC) infrastructure and returns on such investments; and
- open up new potential to service the North West minerals province and developments further afield.

The Project represents a unique opportunity to coordinate the Galilee Basin coal transport requirements within a single corridor by an efficient heavy haul railway system with maximum economic benefits to the Queensland economy, the broader community and the coal miners in the region well into the future.

The Proponent's proposal for a multi user, duplicated 40 tonnes per axle load standard gauge line constructed in good foundations away from floodplains, with optimum rail geometry and served by state-of-the-art heavy haul rolling stock and a carrier grade telecommunications network with advanced train control signalling, will facilitate optimum operational freight efficiency. This will achieve significant savings for the coal mine owners in the Galilee and Bowen Basins by aggregating freight volumes, consolidating supply chains and deploying a combination of high efficiency rail freight design parameters not currently available for coal freight in Queensland. It will enable the mining companies accessing the Corridor to optimise the productive and efficient operation of their mining tenements in the context of the high AUD exchange rate and ever increasing input cost pressures. It offers the most cost competitive solution to the Galilee (and Bowen) mining companies to enable the Mining industry in Queensland to continue to be globally competitive.

Funding for the Project, estimated to require a capital investment in the order of $A 4 billion including rolling stock and communications infrastructure, will be based on investor equity and debt financing. To implement the appropriate financial structure, the Proponent remains in detailed discussions with its financial advisors and potential financiers, including domestic and international financial institutions and investment banks. A number of mining companies have been consulted on the potential for collaboration and appropriate financial structures for multi party collaboration in establishing the corridor are being formulated.

This Initial Advice Statement (IAS) given under section 27(a) of the *State Development and Public Works Organisations Act 1971 (Qld)* provides detailed information for the Queensland Government, interested stakeholders and the general public with initial advice on the proposed Project, the Galilee Infrastructure Corridor for which application is made to declare the Project a project of significance under section 26 (i) of the *State Development Public Works Organisations Act 1971 (Qld)*. In particular, this IAS is provided to:

- assist the Coordinator General to make a decision on a 'significant project' declaration;
- enable stakeholders to determine the nature and level of their interest in the proposal; and
- assist the Coordinator General to prepare draft terms of reference for an environmental impact statement for the proposed Project if declared.

The scope of the IAS is to outline the nature of the Project, its key elements, its social, economic and environmental dimensions including impacts and measures to mitigate adverse impacts, key state and local government policies and planning instruments relevant to the Project, the reasons for the Project being declared a project of significance under the

State Development and Public Works Organisation Act, 1971 (Qld) and the processes and approvals required to undertake the Project.

This solution of optimum economic freight efficiency will deliver on the Government's strategic infrastructure needs for the regions at least economic cost and lowest environmental impact. It is submitted that the Corridor as outlined in this IAS provides the 'common sense' shared freight infrastructure solution which is in the State's best interest.

The content of this Initial Advice Statement is strictly confidential and must not be disclosed by the Coordinator General to any person, other than as permitted by law and section 31 of the *State Development and Public Works Organisation Act* 1971. EWLP acknowledges that the Coordinator General may refer parts of the Initial Advice Statement to any entity the Coordinator General considers may be able to give the Coordinator General comments and information that will help in preparing the EIS.

GALILEE INFRASTRUCTURE CORRIDOR PROJECT

1. Introduction

1.1 Background

Mining is of major economic significance to the State of Queensland. Its direct expenditure of more than $A25 billion in 2010 - 2011 accounted for almost 10% of Gross State Product and employed over 45,000 people. The State Government has before it multiple proposals for major projects to expand or open new mining operations in the State, particularly for the mining of metallurgical and thermal coal deposits in the Bowen and Galilee Coal Basins. Future growth in coal export tonnage from the Galilee Basin alone is projected to be in excess of 300 Mtpa with an export value in excess of $A20 billion annually.

A key requirement for the successful development of these resources is the provision of infrastructure to transport the coal to coastal ports for export. The planning and establishment of the necessary transport infrastructure and associated services should be co-ordinated such as to optimise the efficiency with which the required freight services can be provided in terms of economic benefits to the State while minimising environmental and social impacts.

The State has also designated the area adjacent to the existing Abbot Point harbour coal terminal for expansion with a multi cargo sea freight facility and a special development zone for heavy industrial use.

The proposal considered in this Initial Advice Statement focuses on delivering on these objectives in a way that can meet the needs of all key stakeholders: mining companies, industrial users, regional communities and government.

1.2 The Galilee Infrastructure Corridor

The proposal involves an infrastructure corridor (to be known and referred to herein as the 'Galilee Infrastructure Corridor' (GIC) or the 'Corridor') nominally 150 metres in width from the Abbot Point State Development Area (or adjacent land) to the Bowen and Galilee Coal Basins and the construction and operation within it of rail and communications infrastructure of State significance.

The primary purpose of the Corridor is to provide, for the long term, an efficient multi user, multipurpose, open access rail freight system to transport coal from all of

the Galilee and parts of the Bowen coal basins to the Abbot Point State Development Area and Port. The Corridor will be complete with rail and telecommunications infrastructure and comprised of the following three elemental sections:

- a 390 kilometre length of Corridor from the Abbot Point State Development Area to a junction north of North Goonyella in the Bowen Basin then continuing west to the northern end of the Galilee Basin;
- a 230 kilometre length of Corridor extending from the northern Galilee south along the length of the Galilee Basin and terminating near the town of Alpha to transport thermal coal from proposed mines; and
- a 30 kilometre spur line from the junction near North Goonyella south to a narrow gauge transfer hub near Moranbah to service primarily the transport of metallurgical coal.

The Proponent proposes to facilitate and co-ordinate the design and construction of a railway and associated infrastructure, including telecommunications service infrastructure, within the Corridor. The railway will be a high efficiency, heavy haul, dual track standard gauge line capable of carrying 40 tonnes load per axle (40 tal) rolling stock providing freight operations to serve the needs of all proposed and future mines in the Galilee Basin and multiple coal mines in the Bowen Basin. The efficient high capacity railway system proposed will be similar to and, compatible with the state-of-the-art heavy haul Pilbara railway system in Western Australia. The telecommunications infrastructure will provide a high availability carrier grade network, in part consisting of a fibre core and a wireless overlay network, for train control and general communications. Funding for the Project, estimated to require a capital investment in the order of $A4 billion including rolling stock and communications infrastructure, will be based on investor equity and debt financing.

A key priority for the Project is to address the State Government's strategic planning objectives for managing growth in coal exploration and mining in the Bowen and Galilee Basins at the least economic and social cost. This can only be achieved if, in addition to existing infrastructure serving the freight needs of the Bowen Basin, there is a single 'common sense', open access, efficient heavy haul infrastructure Corridor to meet the growth in freight requirements of new or additional coal tonnages from both the Bowen and Galilee Basins as well as providing an option for servicing the minerals province expansion in the Mt Isa region.

Another key priority of the Project is to provide a high capacity state-of-the-art railway connecting heavy industries at the Abbot Point State Development Area to the proposed port facilities at Abbot Point.

1.3 Economic Significance

The Corridor is of economic significance to the State and the nation, in that it will:

i. contribute to the Australian Government's Infrastructure Policy;
ii. support the State Government's *Queensland Infrastructure Plan*;
iii. contribute to domestic capital formation; and
iv. shape infrastructure planning and development, and facilitate further economic development in Queensland.

While the Project will not directly generate royalties or export duties to government, it will facilitate major investment and economic returns through the

development of mining sector opportunities for upstream industry and downstream processing industries which will in turn contribute royalties as well as revenue by way of taxes and charges for State and Commonwealth Governments; and generate significant national export revenue.

1.4 Better Infrastructure Coordination

Significantly, the Galilee Infrastructure Corridor will support the Coordinator General's infrastructure planning and development view that from a planning perspective, in achieving the freight requirements of mining in the Bowen and Galilee Basins, a single Corridor to the Abbot Point sea port, rather than multiple corridors traversing the State, would be in the State's best long term infrastructure interests.

A number of rail corridors are currently proposed for mining projects within the Galilee and Bowen Basin Regions. Associated processes for declaration of a significant project under section 26 of the S*tate Development and Public Works Organisation Act 1971 (Qld)* and preparation of Environmental Impact Statements have been initiated on these projects and are at various stages of progress.

Studies have been undertaken for environmental impact assessment for the various mining projects and the associated rail construction projects to support the proposed mines within the Galilee and Bowen Basin regions.

The Proponent has carried out extensive pre-feasibility studies on its Project and commenced preliminary work on the Environmental Impact Assessment for the Corridor.

1.5 Project Finance

The Proponent has engaged global financial and investment institutions to assess funding requirements for the Project and to advise on appropriate components of equity and debt financing for construction and permanent financing. A number of the relevant mining companies have been consulted on the potential for collaboration, and appropriate financial structures for multi party collaboration in establishing the corridor are being formulated.

The Proponent's studies to date have demonstrated that the cost per tonne of coal hauled from the Galilee to Abbot Point will be minimised for each user when a high capacity line with the optimum operational efficiency this Proponent proposes is made available to all mining companies on an equitable basis.

A key factor in project financing is to ensure funding is allocated to construction in a timely manner to align with projected operational timelines of potential users of the infrastructure, namely the various mining companies holding resources in the Galilee Basin. Collaboration in the funding mechanism will aid bankability of both mines and rail freight infrastructure.

1.6 Users

The Proponent is consulting with potential users of the railway regarding consortium participation, establishment of a joint Board representing members of the consortium, and the appointment of a respected independent supervising authority to oversee project construction on behalf of the Board.

The Proponent considers that the other railway proposals put forward may serve the individual interests of their proponent mining companies, and other than the Galilee Infrastructure Corridor Proponent's proposal, no other proposal appears (from

information the Proponent has assessed) able to equitably or optimally serve the individual interests of all the current proposed mines in the Galilee Basin, namely MacMines, Adani, Vale, Waratah, HCPL, GVK, AMCI. The other Proponents proposals neither gives consideration for the significant potential for new and emergent Miners nor the long term freight transport needs of the entire Galilee Basin. The Proponent believes that its approach secures the improved freight efficiencies only achievable from a multi user single Corridor collectively serving all mines in the Galilee Basin, and is therefore in the best commercial interest of each mine owner. The Proponent will clarify these arrangements with the potential participants, so as to meet their timelines for financial investment decisions.

The potential for the Corridor also to serve new or expanded mines in the Bowen Basin further strengthens the economic efficiency of the Proponent's model and the benefits of operational cost sharing for the Galilee Basin mining operators.

1.7 Why is the Galilee Infrastructure Corridor a Project of Significance?

In addition to the matters outlined above, the declaration of the Galilee Infrastructure Corridor as a Project of Significance is justified on the following grounds:

1. The Project will, subject to a declaration as a Project of significance fall within the development application process pursuant to the *Sustainable Planning Act 2009 (Qld)* and would involve separate applications to multiple local governments and a referral to the Commonwealth Government pursuant to the *Environment Protection and Biodiversity Conservation Act 1999 (Cth).*
2. Without timely coordination of the separate applications, agency referrals and decision making processes the Project viability could be threatened if project and commercial timeframes, as required by potential users of and investors in the Corridor, are not met.
3. The Corridor will traverse four local government areas, and will require a multiplicity of approvals from State and Commonwealth Government agencies during the pre construction, construction and post construction operations within the Corridor.
4. The complexity of the coordination and timing of the approvals processes between multiple agencies across multiple levels of Government will need careful, whole of government, coordination of an EIS and approvals process to enable the Project to progress in a timely manner and to meet the operational needs of associated mining operations.
5. The Corridor will facilitate the cost efficient freight of cargo to and from the Abbot Point State Development Area for the benefit and needs of multiple economic sectors, including the mining sector, the agricultural sector and the pastoral sector.
6. The Project is of strategic significance to multiple localities and local government areas of Queensland including the Local Government Areas of Whitsunday, Isaac, Charters Towers and Barcaldine Regional Councils.
7. The Project is consistent with and supports a range of Government strategic policy and planning instruments affecting the relevant regions including support for the Government's Regional Growth Management, Economic Development and Policy frameworks.

8. Approval of a single infrastructure corridor, as opposed to multiple corridors, will contribute to a significant reduction in the long term environmental impact on land, natural fauna and flora and economic and social impacts on the agricultural sector and rural communities generally, not to mention the wasted financial costs involved in the development of a multiplicity of corridors, as currently proposed.

9. The Project will have significant economic benefits and generate substantial regional and local employment in construction and support services. Additionally, the Project will contribute to long term employment sustainability in the regions for existing industry sectors and will open up employment opportunities from upstream and downstream development realised by existing and potential industries utilising the Corridor.

10. In addition to facilitating a core freight corridor for mined ores, the Corridor will support other industry sectors and infrastructure owned and operated by a number of entities which will provide a range of products to many members of the public and industry sectors.

11. The Corridor will function as a trade corridor for foundation customers for the proposed Multi Cargo Facility at the Port of Abbot Point.

12. The strategic significance to the State includes establishing infrastructure which anticipates continued growth in accordance with the Queensland Government's ambition for a strong economy in Queensland. The Proponent intends to build, own and operate the Corridor infrastructure to serve the coal regions of the Bowen and Galilee Basins and potentially the future needs of the minerals region around Mt Isa (the North West Minerals Province) and beyond.

13. In addition to the duplicated rail line and telecommunications infrastructure which forms part of the Project and this IAS, the proposed Corridor provides sufficient space for future potential rail tracks as well as water, energy and enhanced telecommunications infrastructure to support regional development in Queensland and it will therefore contribute to better utilisation of, and returns on investments in, existing infrastructure.

14. The development of future infrastructure (e.g., other utility services and pipelines infrastructure in addition to that required to provide core mining freight services) will require separate consideration and assessment to this Project, however reserving the potential for that infrastructure to underline the Corridor's suitability for Project of Significance status.

1.8 Other Potential Designations

Having regard to the multiple users and purposes for which the Corridor may be available to serve, the Government may, at the appropriate time, consider:

a) designating the Corridor as Community Infrastructure under the *Sustainable Planning Act 2009 (Qld),* or

b) declaring the Corridor as a State Development Area under the *State Development and Public Works Organisation Act 1971 (Qld).*

A Community Infrastructure designation, which can be made by the relevant Minister, would identify the Corridor land to facilitate the integration of land use and

infrastructure planning, and the cost effective and efficient provision of the infrastructure.

Before designating land for Community Infrastructure, the designating Minister must be satisfied that:

- the proposal satisfied a public benefit test such that the project will contribute to environmental protection or ecological sustainability, or satisfy community expectations for the efficient and timely supply of infrastructure, and
- there has been adequate environmental assessment, including adequate public consultation, and also adequate account of issues raised in the public consultation.

Similarly, the potential for the Corridor to be declared a State Development Area could be given future consideration having regard to the potential uses of the Corridor land for purposes of strategic significance to the State's economic future. Such uses could include:

- communication network facilities;
- railway lines and associated facilities including general freight ;
- water infrastructure or infrastructure for water cycle management;
- energy infrastructure;
- waste management facilities;
- oil and gas pipelines;
- operating works under the *Electricity Act (1994 (Qld)*;
- emergency services facilities; and
- storage and works depots and the like including administrative facilities associated with the provision or maintenance of any of the above infrastructure facilities.

The Proponent will engage with the Government and the community further on this matter in the course of the EIS as the potential of the corridor to meet the relevant criteria becomes clearer.

2. The Proponent

The Project Proponent is East West Line Parks Limited (EWLP).

EWLP is a public company incorporated in the State of Queensland. The company was incorporated as a proprietary company on 1st March 2006 and completed conversion to public company registration, to broaden the company's share base, on 9th September 2011.

EWLP proposes the Galilee Infrastructure Corridor as a standalone project. EWLP's ultimate vision is to provide an efficient multi user infrastructure corridor that services the North West minerals province and eventually connects to the north west of Western Australia. The multiple users of the corridor would also benefit from additional corridor use efficiencies should the Proponent's Project Iron Boomerang proceed, and the Corridor thereby also promotes the realisation of Project Iron Boomerang.

The company has appointed an Executive Management Team and a Study Manager to design and develop the Project. A Project Management Team will manage a number of specialist consultants experienced in Queensland, Australia and overseas to undertake necessary design, construction and procurement inputs to the Project.

These inputs include assessment of the potential environmental, social and technical impacts of the proposed Corridor, more detailed design development and construction strategies in relation to corridor location and alignment, co location requirements and safety, earthworks, rail, cargo, information communication and technology infrastructure. Specialist services will be deployed also for impact assessment, and specialist legal consultants in associated planning approvals, common user access policies and protocols, infrastructure agreements and service delivery requirements.

Contact details for the Proponent are provided below.

Proponent Contact Details

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3. The Nature of the Proposal

3.1 Scope of the Project

The proposal involves the development of a multi user, multipurpose infrastructure corridor (the Corridor) approximately 650km in length and nominally 150 metres wide comprised of the following three elemental sections:

- a 390 kilometre length from the Abbot Point State Development Area to a junction north of North Goonyella in the Bowen Basin then continuing west to the northern end of the Galilee Basin;
- a 230 kilometre length of corridor extending from the northern Galilee south past all mining tenements along the length of the Galilee Basin, terminating near the town of Alpha.

- a 30 kilometre spur length from the junction near North Goonyella south to a narrow gauge transfer hub near Moranbah.

The location and alignment of the Corridor is shown in Figure 1 (see page 13).

The Corridor will comprise a standard gauge, 40 tonnes load per axle heavy haul dual track rail freight system with a nominal gradient of 1:320 together with associated telecommunications infrastructure from the Galilee and Bowen Coal Basins to Abbot Point port. The first stage of construction will deliver a single track freight capacity in excess of 100 million tonnes per annum (Mtpa) and include provision of a service road and the accommodating earthworks formation and drainage made ready to facilitate the rapid and cost efficient duplication of the proposed heavy haul line to a freight capacity in excess of 350 Mtpa. Beyond this there is also provision within the Corridor for additional rail tracks to further increase its freight carrying capacity.

The proposal will include but not be limited to the following key phases of delivery:

- rail alignment and infrastructure design within the Corridor prior to approval;
- Corridor acquisition;
- detailed design, engineering, procurement and construction strategies, capital and operating estimates as part of a Bankable Feasibility Study (BFS) including development of an Environmental Impact Statement (EIS);
- construction management including commissioning of the rail and telecommunications infrastructure; and
- operations.

The Proponent will project manage the acquisition, design and construction of the rail and telecommunication infrastructure within the Corridor and will provide a turnkey site and a tenure required for the proposed infrastructure to be located within the Corridor, commensurate with the needs of the commercial terms for the infrastructure.

The Corridor will promote the long term economic development of the region, the State and the nation. Therefore, although not included in the current Scope, the Corridor is located and aligned to be extended west to service the Mt Isa region and the North West Minerals Province and beyond as well as adapted for future needs including additional rail lines, gas, water and other utilities.

The proposed nominal corridor width referred to above is expected to be sufficient to satisfy these future intentions, which would be the subject of separate detailed proposals.

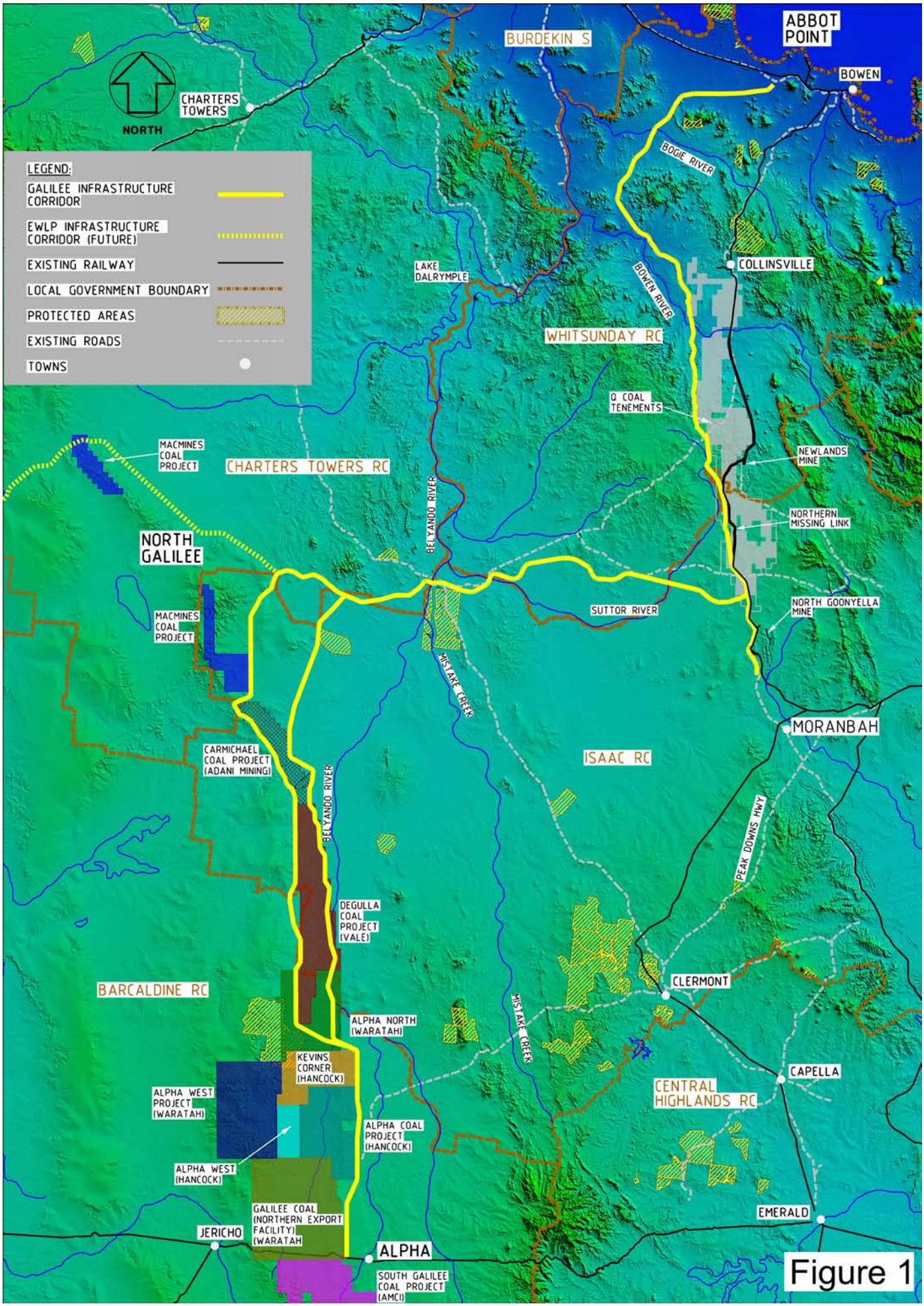
ABBOT POINT
BURDEKIN S
BOWEN
CHARTERS TOWERS
NORTH
LEGEND:
GALILEE INFRASTRUCTURE CORRIDOR
EWLP INFRASTRUCTURE CORRIDOR (FUTURE)
EXISTING RAILWAY
LOCAL GOVERNMENT BOUNDARY
PROTECTED AREAS
EXISTING ROADS
TOWNS
BOGIE RIVER
COLLINSVILLE
LAKE DALRYMPLE
BOWEN RIVER
WHITSUNDAY RC
Q COAL TENEMENTS
MACMINES COAL PROJECT
CHARTERS TOWERS RC
NEWLANDS MINE
BELYANDO RIVER
NORTHERN MISSING LINK
NORTH GALILEE
SUTTOR RIVER
NORTH GOONYELLA MINE
MISTAKE CREEK
MORANBAH
CARMICHAEL COAL PROJECT (ADANI MINING)
ISAAC RC
PEAK DOWNS HWY
DEGULLA COAL PROJECT (VALE)
CLERMONT
BARCALDINE RC
ALPHA NORTH (WARATAH)
KEVINS CORNER (HANCOCK)
CAPELLA
ALPHA WEST PROJECT (WARATAH)
CENTRAL HIGHLANDS RC
ALPHA COAL PROJECT (HANCOCK)
ALPHA WEST (HANCOCK)
GALILEE COAL (NORTHERN EXPORT FACILITY) (WARATAH)
EMERALD
JERICHO
ALPHA
SOUTH GALILEE COAL PROJECT (AMCI)

Figure 1

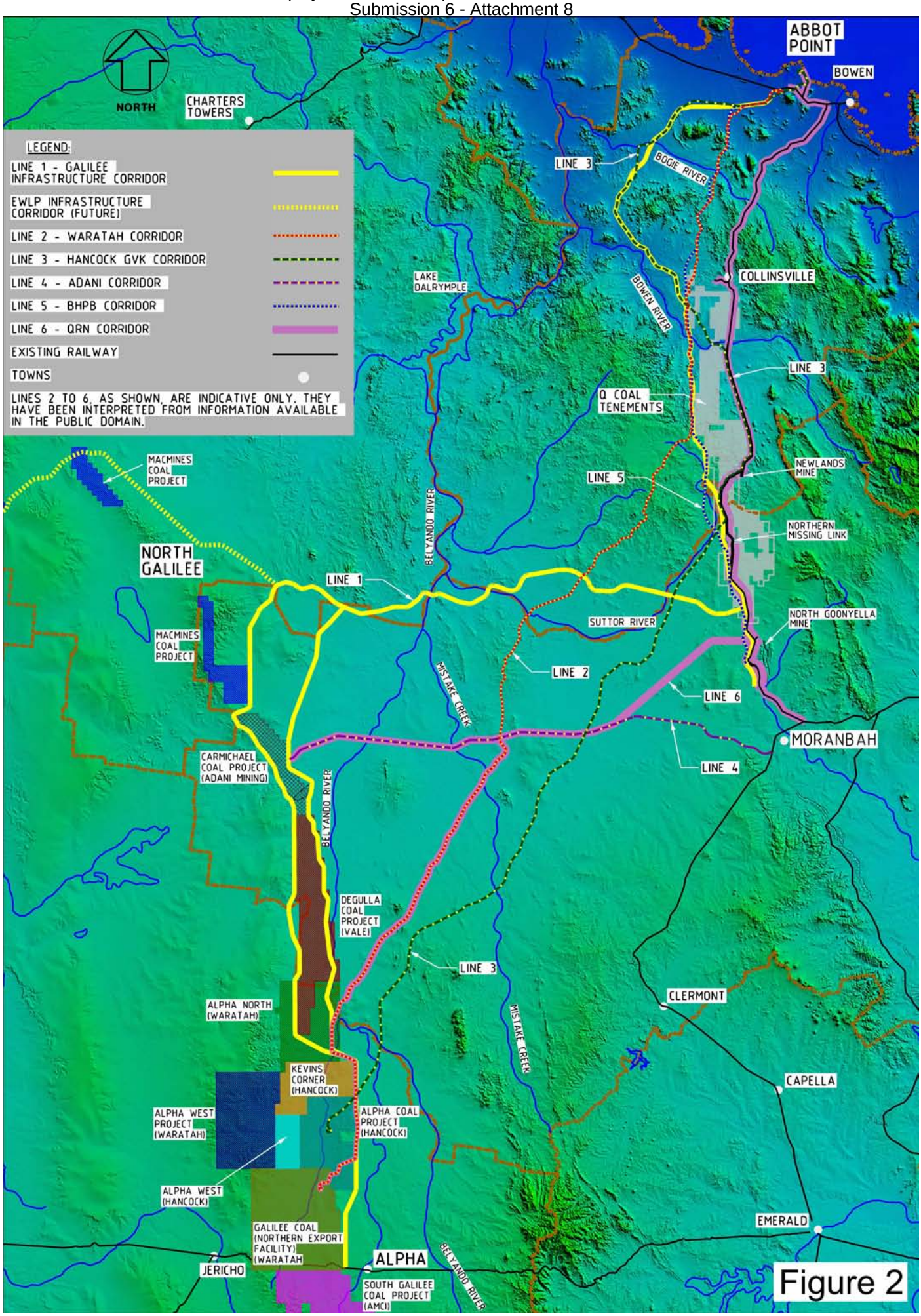
NORTH
CHARTERS TOWERS
ABBOT POINT
BOWEN
LEGEND:
LINE 1 - GALILEE INFRASTRUCTURE CORRIDOR
EWLP INFRASTRUCTURE CORRIDOR (FUTURE)
LINE 2 - WARATAH CORRIDOR
LINE 3 - HANCOCK GVK CORRIDOR
LINE 4 - ADANI CORRIDOR
LINE 5 - BHPB CORRIDOR
LINE 6 - QRN CORRIDOR
EXISTING RAILWAY
TOWNS
LINES 2 TO 6, AS SHOWN, ARE INDICATIVE ONLY. THEY HAVE BEEN INTERPRETED FROM INFORMATION AVAILABLE IN THE PUBLIC DOMAIN.
LINE 3
BOGIE RIVER
LAKE DALRYMPLE
BOWEN RIVER
COLLINSVILLE
LINE 3
Q COAL TENEMENTS
MACMINES COAL PROJECT
NEWLANDS MINE
LINE 5
BELYANDO RIVER
NORTHERN MISSING LINK
NORTH GALILEE
LINE 1
NORTH GOONYELLA MINE
SUTTOR RIVER
MACMINES COAL PROJECT
MISTAKE CREEK
LINE 2
LINE 6
MORANBAH
CARMICHAEL COAL PROJECT (ADANI MINING)
LINE 4
BELYANDO RIVER
DEGULLA COAL PROJECT (VALE)
LINE 3
CLERMONT
ALPHA NORTH (WARATAH)
MISTAKE CREEK
KEVINS CORNER (HANCOCK)
CAPELLA
ALPHA WEST PROJECT (WARATAH)
ALPHA COAL PROJECT (HANCOCK)
ALPHA WEST (HANCOCK)
EMERALD
GALILEE COAL (NORTHERN EXPORT FACILITY) (WARATAH)
ALPHA
JERICHO
SOUTH GALILEE COAL PROJECT (AMCI)
BELYANDO RIVER

Figure 2

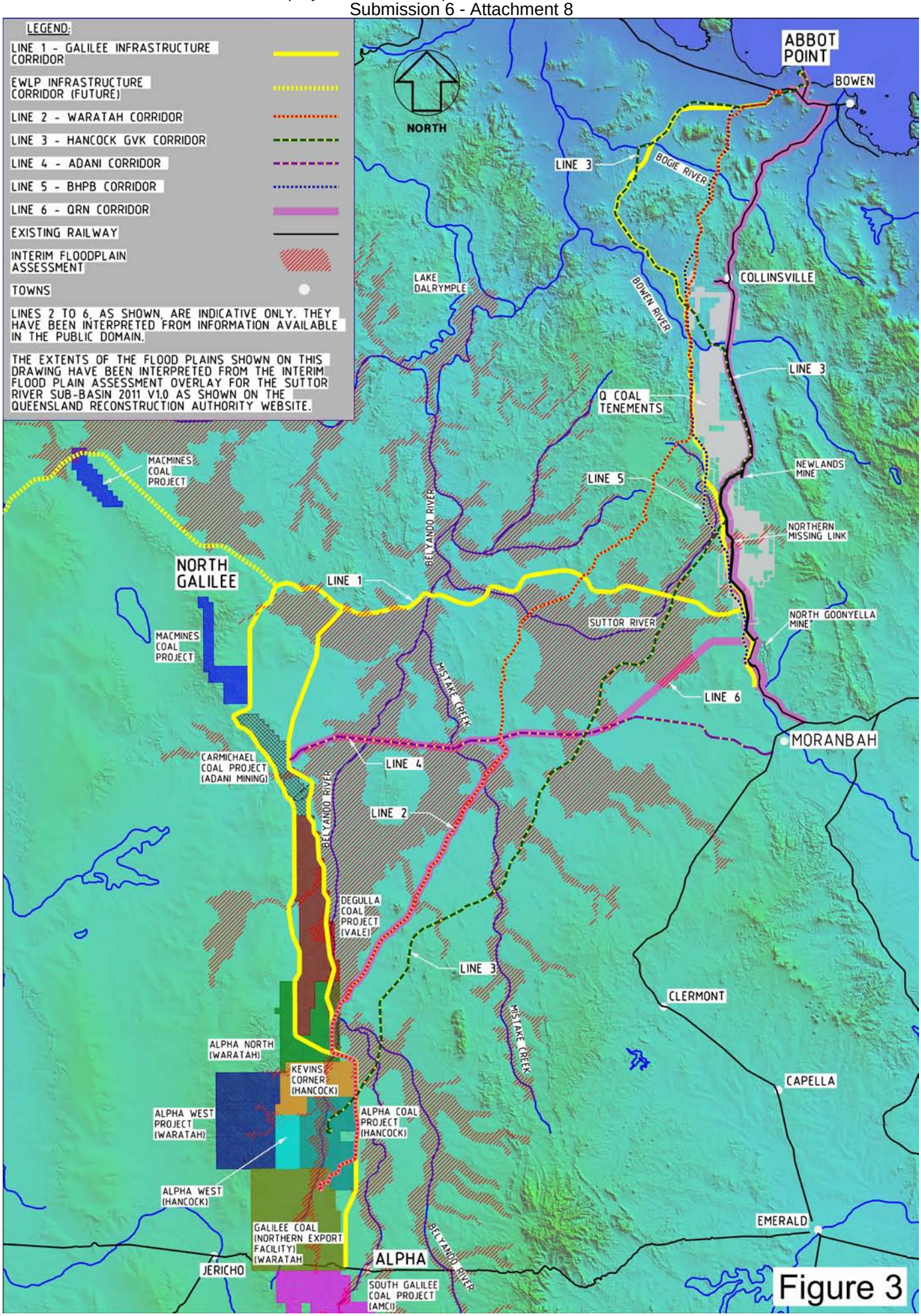
LEGEND:
LINE 1 - GALILEE INFRASTRUCTURE CORRIDOR
EWLP INFRASTRUCTURE CORRIDOR (FUTURE)
LINE 2 - WARATAH CORRIDOR
LINE 3 - HANCOCK GVK CORRIDOR
LINE 4 - ADANI CORRIDOR
LINE 5 - BHPB CORRIDOR
LINE 6 - QRN CORRIDOR
EXISTING RAILWAY
INTERIM FLOODPLAIN ASSESSMENT
TOWNS
LINES 2 TO 6, AS SHOWN, ARE INDICATIVE ONLY. THEY HAVE BEEN INTERPRETED FROM INFORMATION AVAILABLE IN THE PUBLIC DOMAIN.
THE EXTENTS OF THE FLOOD PLAINS SHOWN ON THIS DRAWING HAVE BEEN INTERPRETED FROM THE INTERIM FLOOD PLAIN ASSESSMENT OVERLAY FOR THE SUTTOR RIVER SUB-BASIN 2011 V1.0 AS SHOWN ON THE QUEENSLAND RECONSTRUCTION AUTHORITY WEBSITE.
NORTH
ABBOT POINT
BOWEN
LINE 3
BOGIE RIVER
LAKE DALRYMPLE
BOWEN RIVER
COLLINSVILLE
LINE 3
Q COAL TENEMENTS
MACMINES COAL PROJECT
LINE 5
NEWLANDS MINE
BELYANDO RIVER
NORTHERN MISSING LINK
NORTH GALILEE
LINE 1
SUTTOR RIVER
NORTH GOONYELLA MINE
MACMINES COAL PROJECT
MISTAKE CREEK
LINE 6
MORANBAH
CARMICHAEL COAL PROJECT (ADANI MINING)
LINE 4
BELYANDO RIVER
LINE 2
DEGULLA COAL PROJECT (VALE)
LINE 3
CLERMONT
MISTAKE CREEK
ALPHA NORTH (WARATAH)
KEVINS CORNER (HANCOCK)
CAPELLA
ALPHA WEST PROJECT (WARATAH)
ALPHA COAL PROJECT (HANCOCK)
ALPHA WEST (HANCOCK)
EMERALD
GALILEE COAL (NORTHERN EXPORT FACILITY) (WARATAH
BELYANDO RIVER
ALPHA
JERICHO
SOUTH GALILEE COAL PROJECT (AMCI)

Figure 3

3.2 Land Use

3.2.1 Existing Land Use

Planning undertaken to date indicates the Corridor will traverse multiple tenures including freehold, rural leaseholds, existing services corridors (such as gas and water pipelines) and various road and other public reserves.

The Corridor traverses predominantly agricultural and grazing land held under Leasehold and Freehold tenure and has avoided Strategic Cropping lands where identified.

Further assessment during the EIS study period will identify whether the Corridor may traverse areas identified on the trigger maps as Strategic Cropping Land. This will be validated during ongoing Government liaison and field assessments to ensure any impact on such lands is minimised or avoided.

There are several operating mines in the Bowen Basin potentially affected by the Corridor as well as other mining tenements under exploration or development. The Corridor has been sited to avoid all operating mines, so as not to adversely affect the current or planned operations of these mines.

Discussions with traditional owners, native title claimants and the owners of land have commenced and will be ongoing through the design, land acquisition and construction phases and beyond to ensure the sensitivities and concerns of each group are appropriately acknowledged.

3.2.2 Intended land use

The Corridor will be primarily used for rail transport of product from the Galilee and Bowen Basins to the Port of Abbot Point in the first instance.

Construction of the Corridor will require freehold acquisition, long term leases, easements or rights of way over various lengths of the Corridor, and arrangements to access any existing impacted infrastructures in the Corridor, the nominal width being 150 metres plus localised widening for high embankments and cuttings depending on topography and expansion where practical and relevant. The maximum width of the Corridor at any location will vary depending on cutting height and topography.

The Corridor will provide for a dual track, standard gauge, heavy haul railway system and a carrier grade high availability communications network in part consisting of a fibre core and a wireless overlay network for train control and general communications. There is also future provision within the Corridor for additional rail tracks, water and gas pipelines.

3.3 Project Need, Justification and Alternatives Considered

3.3.1 Objectives

The primary objective of the Project is to provide an open access, common user infrastructure Corridor of optimum economic efficiency for the long term benefit of all users and stakeholders, especially for the transport of mined coal from the Galilee Basin and Bowen Basin to the Port of Abbot Point. The Corridor alignment and design is specifically intended to avoid the need for multiple railway corridors traversing the State to meet the needs of the proposed mines within the Galilee Basin area.

Once established, the Corridor will meet the significant freight and associated needs for the current and planned coal mining ventures for the respective Bowen and Galilee Basins and further west, as well as provide potential freight services to / from regional towns and communities, for agricultural produce and associated service needs of communities and economic sectors in the regions and to / from Abbot Point multi cargo facility sea port and the Abbot Point special development zone.

Implementation of the Project will provide the basis for the Proponent to promote further industrial development in the Abbot Point State Development Area capitalising on the resources available from the Bowen Basin and provide export avenues for coal mining ventures operating at both the Bowen Basin, Galilee Basin and Abbot Point.

To optimise the operational efficiency of the freight Corridor, the Corridor will incorporate state-of-the-art, carrier grade, high availability communications technology and standard gauge, 40 tonnes load per axle rail at maximum 1:320 vertical gradient.

3.3.2 Feasibility Studies

The Proponent has extensively studied the freight model proposed, including freight growth of the relevant regions and beyond to areas such as the North West Minerals Province and Mt Isa region. The Project design incorporates using modern, fuel efficient locomotives and high capacity, environmentally friendly, closed lid coal wagons where compatible with existing infrastructure capable of delivering greater payloads per train and at lower cost per tonne from mine to port.

The emergence of the Galilee Basin coal mine development projects has provided the opportunity for the Proponent to offer the region a solution which greatly improves upon the multiplicity of railway corridors being proposed. This “common sense” solution is achieved by developing a single, multi user, multipurpose Corridor providing an efficient heavy haul standard gauge railway system.

The Proponent has also completed a preliminary Corridor Definition Study in October 2011 which has determined the most suitable route for the Corridor alignment that meets key business objectives whilst maintaining its commitment to minimising land use impacts in the region.

The Proponent is currently undertaking the detailed business case, and reference design and commencing the EIS for the Project.

3.3.3 Support for Government Policies and Strategies

The State Government has recently issued a *Queensland Infrastructure Plan 2011 (QIP)* and has plans and policies in support of the Coal Industry and economic development in the North West Minerals Province and Mt Isa Region.

In particular, this Project will support the Government’s key objectives in addressing the following themes in the QIP:

- attraction and retention of staff, particularly in the regions;
- address Mining Boom Impacts;
- strengthen Economic Diversity in support of local communities;
- provide Inter-regional accessibility; and

- enhance Service Provision by providing transport infrastructure to service regional communities with fuel, energy, water, mining equipment, agricultural service inputs and produce freight needs.

The QIP will be specifically supported in meeting the Freight Movement needs of the mining regions referred to in the Plan as summarised below:

"Other priorities include improving road and rail access between Mackay and the Bowen and Galilee basins, and facilitating rail corridor development that supports industry provision of efficient rail linkages between the Galilee Basin and Abbot Point." (QIP p. 64):

The Project will also support these policies and plans by providing open transport access to the Abbot Point State Development Area and significantly contribute to trade growth, particularly in the resources sector by meeting the long term trade needs at the Port. The Project offers a multi user, multipurpose infrastructure Corridor from the Galilee Basin to Abbot Point:

"... to facilitate large scale industrial development while recognising environmental, community and cultural values adjacent to the deepwater Port at Abbot Point.

A multi cargo facility is also proposed at the Port of Abbot Point... a sheltered harbour, capable of handling multiple cargos with a number of new berths ... represents a significant industrial development opportunity for the State'' (QIP p.64):

The Project also has potential to support the strategic objectives of the *Northern Economic Triangle Infrastructure Plan 2007-2012*, securing the future prosperity of the North West and North Queensland as a triangle of mineral processing and industrial development. In particular, the proposal will support the strategic objective of:

"Infrastructure development to establish Bowen as a major new industrial precinct for the large scale industries including chemicals production, mineral refining and metals smelting." (QIP p. 33);

The Project will also provide an infrastructure foundation for meeting the future strategic needs of the Mt Isa region by addressing the accessibility of the region to supplementary transport infrastructure:

"Reliability of transport infrastructure is compromised by seasonal factors such as flooding, black soils and the effects of high temperatures on rail track requiring significant maintenance." (QIP p.17);

The Proponent intends to work with the State Government during the construction phase of the Project to give effect as appropriate to the principles of local industry participation with the objective of giving full, fair and reasonable opportunity for Queensland businesses to participate in the Project.

3.3.4 Preferred Option and Alternatives

3.3.4.1 Preferred Option

The proposed Galilee Infrastructure Corridor is the preferred corridor which satisfies the Proponent's overall project objective: namely an open access freight Corridor of optimum economic efficiency for the long term benefit of all users and stakeholders.

The Corridor is the product of a refinement process by which the Proponent has applied multi-criteria risk assessment procedures to analyse numerous potential alignments (totalling approximately 36,000 route kilometres).

The Proponent's analysis acknowledged the following essential freight Corridor attributes as the appropriate 15 point criteria by which a Corridor to Abbot Point should be determined:

1. aggregates freight from all Galilee Basin mine tenements via a single Corridor of minimum length, inclusive of spurs (essential for optimum freight efficiency, and limit land use impact);
2. integrates with the Bowen Basin coalfields (essential for optimum efficiency and service utility);
3. incorporates state-of-the-art standard gauge rail (an essential starting point for Pilbara style freight efficiency);
4. enables 40 tonnes load per axle track and wagon capacity (essential for optimum freight efficiency rail and wagon capacity);
5. maximum 1:320 gradient against the loaded train consist (essential for optimum operational efficiency);
6. enabled for cost efficient duplication to >350 Mtpa capacity (essential for achieving full Galilee Basin capacity in a single Corridor or dual track);
7. incorporates state-of-the-art carrier grade telecommunications and wireless overlay network (essential to enable real time locomotive management and train control signalling for optimum operational efficiency);
8. incorporates advanced train control signalling on a common shared platform for optimal freight efficiency in a multi user environment (essential for an efficient environment to enable mining companies to be masters of their destiny);
9. accommodates future community utility services (essential for maximum shared community benefit);
10. minimum encroachment on valuable agricultural cropping and cattle lands (essential for minimum land use impact);
11. minimises foundations on black soil floodplains and other poor natural materials (essential for minimum capital cost and land use impact and to minimise long term operational risk);
12. minimum earthworks and rock excavation and optimum cut-fill balance (essential for minimum capital cost and land use impact);
13. minimum drainage and flood mitigation measures and the avoidance of floodplains (essential for minimum capital cost and risk of operational disruption due to flooding events);
14. suitably configured for direct heavy haul rail Corridor extension west to the Mt Isa region and the North West minerals province (to catalyse and promote its economic development); and
15. maximises practical alignment proximity to existing rail corridors (in order to reduce land use impact).

The Proponent's preferred Corridor, as shown in Figure 1 (see page 13), adheres to these criteria and has the following particular attributes:

- provides a single, multi user infrastructure Corridor to Abbot Point servicing the doorstep of all mining tenements in the entire Galilee Basin whilst minimising the required length of railway including spurs;

- simultaneously provides a standard gauge heavy haul freight solution to Abbot Point from an integrated rail location central to the Bowen Basin coalfields;
- builds in optimum economic operational efficiency for all users by having standard gauge, heavy haul railway line of 40 tonnes load per axle capacity with maximum up gradient of 1:320, duplicated as demand builds;
- enables the use of the latest generation of American heavy haul locomotives;
- the proposed use of closed lid coal wagons that eliminate in transit dispersion of coal dust as well as being environmentally desirable with increased efficiencies through reduction in aerodynamic drag thereby reducing the usage of locomotive diesel fuel;
- enabled for cost efficient line duplication to 350Mtpa capacity;
- incorporates state-of-the-art, carrier grade, high availability communications technology;
- incorporates a train management strategy enabling optimal multi user freight density and efficiency;
- accommodates other potential future community utility services: e.g. water, gas, power, enhanced telecommunications etc;
- minimises land use impacts and encroachment on valuable agricultural cropping and cattle grazing lands;
- minimal floodplain encroachment (ref. Figure 3 – see page 15), minimising costly drainage requirements with reduced risk of operational disruption due to flooding events;
- minimises areas of poor soil foundations and rugged rocky terrain, thereby minimising construction costs and operational risk;
- facilitates cut/fill balance with minimum earthworks and imported fill by selecting topographically suitable terrain;
- aligns adjacent to existing rail corridors, where practical to do so, to minimise land use impacts;
- aligns for direct heavy haul extension further west to service the development of the Mt Isa region and the North West Minerals Province;
- avoids townships (e.g., Collinsville) and minimises impacts on other recognised settlement areas and significant rural infrastructure (e.g. homesteads, stockyards, stock dams, bores);
- avoids environmentally sensitive areas such as National Parks and known declared nature reserves;
- avoids existing and planned mines and other infrastructure; and
- locates required ancillary infrastructure (e.g. unloading infrastructure and rail loops at Abbot Point) all within close proximity to existing key infrastructure.

With reference to Figure 3 (see page 15), the extents of the flood plains illustrated is the most recent interim floodplain assessment overlay sourced from the Queensland Reconstruction Authority website.

With reference to Figure 1 (see page 13)**,** the following paragraphs describe the preferred Corridor route.

The Corridor from the northern Galilee Basin to the junction at North Goonyella (west to east) follows the foothills of higher land formations at relatively flat longitudinal grade and remains to the north of the major black soil areas and out of flood plains. This route minimises impacts on valuable agricultural lands to the south of the Corridor and can comfortably generate an earthworks cut-to-fill balance on the railway formation, thereby minimising the potential need for imported fill and its impact on land forms and surrounding property.

Adopting a generally north-south alignment along the Galilee Basin, the Corridor bypasses agricultural zones and remains close to all of the Galilee Basin mining tenements. Its route will be selected from two current options during the EIS study and design development period: either along the western flank of the Galilee mining tenements or along the eastern tenement boundaries (both options are shown in Figure 1 - see page 13). Whichever of these options is selected, each of the various emerging and future mines in the Galilee Basin may then be joined to the Corridor by a localised rail loop connection. In this way, the Corridor not only minimises impacts on landholders but also provides all potential Galilee Basin mines with a ready access to a single high capacity Corridor of high flood immunity without the need to build lengthy inefficient spur lines that disrupt the community and the environment.

The Proponent proposes a rail transfer hub near Moranbah to enable new and existing mining operations in the Bowen Basin an option to haul metallurgical coal on an efficient heavy-haul standard gauge railway to Abbot Point. The rail transfer hub will link to the current and emerging Bowen Basin mines via a spur line which will be either narrow gauge or standard gauge or dual gauge. (a combined narrow gauge and standard gauge track) as preferred. Equally, should particular mining companies prefer, the dual gauge line may be extended through to the Galilee Basin.

The Corridor route between North Goonyella and Abbot Point may deviate at two locations from that shown in Figure 1 (see page 13), subject to further detailed analysis and ongoing landowner discussions to be concluded during the EIS study period. From approximately 60 km north of Moranbah the alignment will either be to the west of the Q-Coal tenements (as shown) or on an alignment through those tenements.

From approximately 25 km south of Collinsville, the Corridor to Abbot Point will be selected from one of two routes: the western alignment (as shown), which meets the Proponent's maximum up-gradient criterion of 1 in 320, or a route through the Clark Ranges which, although being 30 km shorter, exceeds this gradient criteria at localised points. Further train simulations are being undertaken to determine which of these options has the better whole-of-life cost efficiency.

The current Corridor alignment design has attempted to avoid sterilisation of known mining tenements. During the EIS evaluation further design optimisation will be undertaken in consultation with the relevant mining companies to ensure the least impact on or complete avoidance of mining tenements is achieved.

The Proponent's proposed multiple user, duplicated 40 tonnes load per axle standard gauge line constructed in good foundations away from floodplains, with optimum rail geometry and served by a state-of-the-art latest generation of American heavy haul locomotives together with the efficiencies gained from closed lid coal wagons and a carrier grade telecommunications network with advanced train control signalling, will facilitate optimum operational freight efficiency.

This will achieve significant savings for the coal mine owners in the Galilee and Bowen Basins by aggregating freight volumes, consolidating supply chains and deploying a combination of high efficiency rail freight design parameters not currently available for coal freight in Queensland. This will enable the mining companies to maximise the productive and efficient operation of their tenements in the context of the high AUD exchange rate and ever increasing input cost pressures. It offers the most cost competitive solution to the Galilee Basin (and Bowen Basin) mine operators to enable them and the Mining industry in Queensland to continue to be globally competitive.

The Proponent considers that it is in the State's best interest that all Galilee Basin freight users are served by its proposed open access freight Corridor, enabling all mines to be adequately serviced long term in the most efficient way.

Further, the Proponent's solution promotes the State's yet unrealised ambition to connect the North West Minerals Province to the east coast via an economically efficient heavy haul rail line, by advancing such an asset nearly half the way to Mt Isa.

3.3.4.2 Alternatives

The Proponent has analysed numerous alignment options (totalling more than 36,000 route kilometres), which it assessed against its 15 point selection criteria (ref 3.3.4.1 above). The focus of the criteria is to provide the optimum economic freight efficiency to ensure comparative economic benefit is returned to all parties using the railway alignment / Corridor that provides the least possible cost per tonne hauled.

These studied options had many things in common with other freight corridor proposals from the Galilee and Bowen Basins currently in the public arena for consideration, of which there appear to be at least five in number. These include three proposed corridors from the Galilee which traverse generally from south-west to north-east, an additional corridor mooted as an east-west connection from the central Galilee to Moranbah, a new corridor traversing generally northwards from Moranbah to Abbot Point and a brown fields upgrade of the existing narrow gauge rail line from Moranbah to Abbot Point is also proposed.

These alternative proposals therefore serve as useful comparators.

From publicly available data the Proponent has applied its 15 point multi criteria risk assessment criteria to analyse each of these proposed rail corridor options for the region and to determine the potential suitability of each to meet the Proponent's essential project objective: namely, an open access freight Corridor of optimum economic efficiency for the long term benefit of all users and stakeholders.

With reference to Figure 2 (see page 14), in which the Proponent's preferred Corridor is identified as Line 1, the proposed alternative rail corridors (Lines 2 to 6 inclusive) may be broadly categorised as follows:

Line 2: 25 tonnes load per axle coal wagons operating on a 40 tonnes load per axle standard gauge rail track from a tenement in the southern Galilee generally in a north-easterly direction to Abbot Point;

Line 3: 32 tonnes load per axle standard gauge rail from a tenement in the southern Galilee Basin, generally in a north-easterly direction to Abbot Point.

Line 4: 20 – 25 tonnes load per axle potentially dual gauge line from a tenement in the central Galilee east to Moranbah, with connections to lines 2, 3 or 6;

Line 5: 20 – 26 tonnes load per axle narrow gauge rail from the Bowen Basin, near Moranbah, through to Abbot Point proposed as part of a wider open-access corridor.

Line 6: 20 – 26 tonnes load per axle set of narrow gauge rail corridors including brown fields upgrade from Abbot Point to North Goonyella with a new connection that joins it to Line 4 and thereafter becomes a twinset of diverging corridors which overlay parts of both Line 4 and Line 2.

The Proponent considers that each of these alternative corridors presents comparative disadvantages, including the following:

- Each of the alternative corridors best serves the single tenement from which it originates, whereas the GIC is designed to service all Galilee Basin tenements equitably;
- the alternative corridors are not suited to the aggregation of all Galilee Basin freight into a coordinated, optimum efficiency solution of required high capacity, whereas the GIC is selected for this purpose;
- each of the alternative corridors requires a network of additional trunk and spur lines of significant length to fully serve the Galilee Basin, whereas the GIC achieves this outcome via a single corridor of minimum length;
- the alternative corridors are not configured for direct heavy haul extension to economically service the future expansion of the North West Minerals Province around Mt Isa, whereas the Galilee Infrastructure Corridor is configured for this;
- the alternative corridor alignments do not suit the Galilee Infrastructure Corridor's proposal for a heavy haul 40 tonnes load per axle track and rolling stock operations, whereas this criteria is essential to achieving optimum economic efficiency on long haul freight; and
- the alternative corridor alignments add significant capital cost and operational and maintenance risk in traversing significant tracts of black soil, floodplains and/or rugged terrain, whereas the Galilee Infrastructure Corridor alignment minimises exposure to unfavourable costly topography.

The Proponent considers each of the options it has reviewed, including the proposed alternative alignments in the public domain, does not suit all of its 15 point risk assessment criteria and therefore does not meet its essential project objective: namely, an open access freight Corridor of optimum economic efficiency for the long term benefit of all users and stakeholders.

A 'do nothing' option, whilst avoiding potential adverse impacts on landholders and the environment in the region, would leave the Galilee Basin coal resources stranded and the Bowen Basin coal reserves under developed and further delay the realisation of the development potential for the North West minerals province. It would also fail to adequately service the new Abbot Point multi cargo facility and adjacent State development Area special zones, which demands a modern high capacity rail service for its economic potential to be reached.

3.3.5 Summary of Key Strategic Benefits

The Project represents a unique opportunity to coordinate the Galilee coal transport requirements within a single Corridor by an efficient heavy haul railway system with maximum economic benefits to the Queensland economy, the broader community and the coal mining companies in the region well into the future.

The Project is of strategic significance in that it will:

- contribute to the Government's Infrastructure Policy, the promotion of domestic capital formation, and shape future infrastructure planning and development in Queensland;
- support the National Government's infrastructure priorities as outlined in the *2011 Report* by Infrastructure Australia to the Council of Australian Governments including the delivery of Competitive International Gateways, A National Freight Network and a National Broadband Network;
- contribute to the long term employment sustainability in the regions for the existing industry sectors and open up upstream and downstream development opportunities realised by existing and potential industries utilising the Corridor;
- have the capacity to serve multiple sectors including agriculture and pastoral, not only the mining sector;
- significantly reduce disruption to landholders and to the valuable cropping and grazing lands of the region;
- function as a trade Corridor and provide foundation customers in support of the Multi Cargo Facility at the Port of Abbot Point;
- enable an efficient use of land and resources within the current corridors owned by the Coordinator General in the Abbot Point State Development Area and within the corridor owned by North Qld Bulk Ports;
- eliminate the need for multiple corridors connecting to the Galilee basin and thereby reduce financial costs involved in the development of a multiplicity of rail corridors currently proposed;
- have the capacity to provide for multiple uses into the future including water, energy and information and communication technology infrastructure to support regional development in Queensland;
- contribute to the utilisation of existing Government Owned Corporations (GOC) infrastructure and returns on such investments; and
- open up potential to service the North West minerals province and developments further afield.

3.4 Components, Developments, Activities & Infrastructure that Constitute the Project to be declared Significant

Initial assets in the Corridor (Galilee to Abbot Point via Moranbah) will potentially be:

- 650 km of duplicated 40 tonnes load per axle heavy haul, standard gauge railway from Abbot Point to the Bowen and Galilee coal basins;
- passing tracks and sidings;
- several bridge-over-river crossings;

- several road-over-rail crossings particularly west of Moranbah;
- several rail over rail crossings;
- carrier grade communications network to enable rail operators and other parties to utilise a multi service networks from Abbot Point to the Galilee Basin and beyond. The communications network will in part consist of:
    - 1250 km fibre optic cable(s) for control of rail operations and general communications;
    - a carrier grade high availability wireless overlay network for control of rail operations; and
    - advanced rail signalling equipment for safe rail operations.

A preliminary checklist of key components of the planning phase includes:

Table 1: Key Components of the Planning Phase

Item	Status
Rail	■ Dual track, heavy-haul, standard gauge railway comprising of 68kg/m rail, prestressed concrete sleepers on ballasted track; ■ Storage and passing tracks with interchange capability; ■ Signalling and communications facilities; ■ Marshalling yards; ■ Material Transfer Hub.
Rolling Stock **Structures**	■ Specially designed 40 tonnes load per axle coal freight wagons; or existing large heavy haul coal wagons, where applicable. ■ Heavy Haul Locomotives. ■ Rail-over-river bridges; ■ Road-over-rail bridges; ■ Rail-over-rail bridges; ■ Train Control facilities; ■ Major Culverts; ■ Cattle pass (under and/or over).
Buildings	■ Maintenance workshops; ■ Administration offices; ■ Crew amenities buildings; ■ Refuelling and servicing facilities/workshops (ultimately);
Roads	■ Service roads for construction and operations (maintenance); ■ Upgrading of existing Council and State networks where necessary.
Accommodation	■ Accommodation for construction (multiple sites).

Table 1: Key Components of the Planning Phase	
Item	**Status**
Miscellaneous	■ Fencing to exclude cattle and wildlife; ■ Signage.
Telecommunications Network	■ Fibre optic core; ■ Transmitter and repeater stations; ■ Communications towers.

The Project will also include a material transfer area to facilitate the transfer of materials from narrow gauge to standard gauge rolling stock and will be located to the north west of the town of Moranbah.

A key component of the Corridor will be a state-of-the-art integrated signalling and communication system based on fibre optic cores with a wireless overlay network that will enable significantly improved coordination of train movements to and from the port, avoiding congestion by optimising scheduling and ensuring efficient use of the rail freight network.

A complete list of components of the Project will be further developed during the engineering and design phase of the Project.

3.5 External Infrastructure Requirements

Other assets forming part of this Project, which are outside the Corridor battery limits, will include:

- train refuelling facilities (at or near the Port);
- rolling stock maintenance workshops (possibly in the vicinity of Moranbah or Abbot Point);
- ballast quarries supporting railway construction and future maintenance requirements;
- sleeper Manufacturing Plant; and
- flash butt Welding Depot and rail transfer facility.

There will be additional needs for passing and storage tracks at various points along the Corridor. These will be sited appropriately where landforms are suitable so as to minimise the need for landfill or excavation to extend the Corridor width and, in consultation with landholders, away from housing and homesteads and areas impacting land use.

Additional infrastructure for marshalling, servicing, repairing and transhipment of product will also be required, predominantly on site. Refuelling facilities will be sited at or near the port so as to avoid the need for large storage facilities and associated high fuel transport costs to a major inland facility.

Needs for water supplies and electricity are largely related to the construction phase of the Project and are noted in section 3.7 below.

3.6 Time-frames for the Project

The construction delivery time frame for commencement of rail operations from Abbot Point to the Galilee Basin via Moranbah has been planned to suit the coal haulage needs of the emerging mine in the Galilee and Bowen Basins. The preliminary Schedule is outlined in Table 2 below. The projected date for start-up of operations for the North Galilee Basin to Abbot Point Port is early 2016. Note: dates supplied below are in Calender Years (CY):

Table 2: Proposed Schedule

Milestones	Dates
Studies and Plans	
Complete Corridor Definition Study	Q4, CY11
Issue IAS to Coordinator-General of Queensland	Q1, CY12
Complete environmental constraints assessment and cultural heritage plan	Q1, CY12
Prepare EIS draft Terms of Reference	Q2, CY12
Submit Environmental Impact Statement (EIS) to Government	Q1, CY13
Complete Detailed Design and Planning Study	Q4, CY13
Coordinator General's Report issued	Q4, CY13
Final State and Commonwealth Govt approvals	Q4, CY13
Order long-lead items (LLIs)	Q4, CY13
Construction	
Start construction of railroad from Abbot Point to Alpha via Moranbah	Q4, CY13
Complete railroad between Abbot Point and Moranbah	Q3, CY15
Complete railroad between Moranbah and Alpha	Q4, CY15
Operations	
Commence operations from Abbot Point to Bowen Basin	Q4, CY15
Commence operations from Abbot Point to Galilee Basin	Q1, CY16

Note that a staged approach will be adopted for commissioning, enabling operations to commence from the Bowen Basin in Q4 2015. Start-up of operations from the Galilee Basin is anticipated to be in Q1 2016.

3.7 Construction and Operational Processes

Construction is scheduled to begin in Q4 2013 and will involve the following activities:

- establish workforce camps, suitable access roads and compounds;
- establish borrow pits and quarries;

- clearing of the rail alignment;
- bulk earthworks and open drainage;
- culvert drainage and other structures including bridges;
- formation, capping and ballast;
- sleepers and rail placement;
- installation of communications and signalling infrastructure;
- locomotive and wagon maintenance facilities;
- provision for electrification; and
- batter treatments and environmental controls.

3.7.1 Access Roads, Construction Camps and Compounds

Access roads identified for use during construction will include the existing roads network and any additional access ways negotiated with landowners as required by the constructors for the proper execution of the works.

The Project will attract a significant construction workforce whom it is envisaged will be housed in camp accommodation established along the route. Camp sites will be fully configured to industry standards and established to comply with all relevant Council bylaws and guidelines with respect to accommodation, water and sewage/waste management.

Initial site activities will include small mobile teams that will either be accommodated in townships, caravan parks or fly camps depending on the nature of the activity. The principal workforce engaged in earthworks, bridge and railway construction will be accommodated in the construction camps strategically placed along the Corridor route as to optimise daily travel distance of the workers. Detailed planning on the construction methodology will be refined during the EIS study period dependent on the outcomes of negotiations with Government agencies and landholders. At this stage it is envisaged that there may be 5 construction camps each with in excess of 600 persons capacity, complying with relevant Local and State Government requirements and located approximately 100 to 120 kilometres apart between the Galilee, Moranbah and Abbot Point, with progressive relocation of material stockpiles and storage yards for equipment and machinery.

Power to these camp sites and storage compounds will be accessed from the grid where possible or generated on site. Water supply (potable) will be sourced by bores and Reverse Osmosis (RO) plants established within the camp perimeter or alternatively trucked to site as required in the absence of any available pipelines, town supplies or suitable bores as approved under the Water Act 2001. The location of the construction camps, their power and water requirements and mode of supply will be determined during the EIS study period.

Grey water generated from the camp population will either be treated on site and recycled on garden areas within the camp facilities or removed from site and disposed of in accordance with the Local Council Bylaws within approved disposal areas and as required by State regulations where applicable.

3.7.2 Construction

Construction will be undertaken on at least the following three main fronts concurrently: the Abbot Point to Moranbah section; the west to east Corridor from North Galilee through to North Goonyella; along the Galilee Basin mining tenements.

There are likely to be several temporary work sites along each work face that will move as work progresses. The workforce will be taken to site daily along existing roads or via the Corridor itself to minimise impacts on local landholders.

Civil works would include construction of earthworks, road works, maintenance track, drainage culverts, bridges and other structures.

Rail works would include track laying, telecommunications and signalling installation.

Building works would include provision of locomotive and wagon maintenance facilities and the establishment of concrete batch plants and a prestressed concrete sleeper manufacture facility.

Plant and equipment necessary to carry out the construction works will be sourced from local contractors where suitable and brought to the site by road. The following construction equipment is likely to be engaged in the work activities:

Civil works: piling rigs, cranes, compressors, water carts, rollers, scrapers, trucks, loaders, bulldozers, graders, excavators, backhoes and crushing plants for various aggregates including ballast.

Rail works: track layer, ballast wagons, rail welder, tamper, water cart, excavator

Building works: backhoe, truck, delivery vehicles, crane, small tools.

The Corridor route has been selected to avoid floodplains and minimise culvert drainage and to ensure a relatively low volume earthworks with balanced cut and fill outcome may be obtained. The detailed design will ensure such an outcome is realised with minimum haul distances and minimum requirement to establish borrow pits for additional embankment material.

The bulk earthworks majority short haul exercise will be undertaken using scraper fleets with trucks and excavators used for longer haul.

Drainage works will consist of standard culvert installations.

Bridge construction will consist of economical standard elemental construction.

There are no dangerous chemicals utilised at any of the communication sites. All power is generated on site potentially by a combination of wind turbines, photovoltaic cells and fuel cells (that are run from LNG). The stored power is in recombinant gel cell battery banks. Similarly the fibre optic cable is trenched and buried to a depth of 1 to 2 metres in the Corridor.

The artefacts of the ITC installation subject to the outcome of detailed survey are likely to be 30 communication sites interspersed approximately every 25 Km in the Corridor. These sites are approximately 20 metres by 20 metres perimeter security fenced are for digital radio back-haul repeater signalling and fibre optic termination and re amplification for the core IP/MPLS network and the cellular radio overlay network Base Station repeaters. Each site accommodates a tower of varying height and design to house cellular radio antennae radiating elements, digital radio (microwave) back-haul and wind turbines. The equipment is connected by cable housed in hardened conduits that are terminated in the ballistic rated IP enclosures

where sensitive electronic equipment is maintained in the appropriate environment. The hardened conduits are designed to minimise or resist the impact of fauna.

3.7.3 Construction Materials including Water Supply

Operational water supplies will be required for dust suppression, earthworks construction, haul road maintenance, capping layer construction, concrete batching, weed washing bays and other construction needs. The Proponent will determine the Project's volumetric water requirements and the means of water supply for the Project during the EIS study period.

It is anticipated that water will be obtained from underground water sources, from temporary or permanent dams in the region and from private utilities via existing pipeline. It is envisaged that temporary dams and bores with appropriate storage will be established as water supply for the construction. In addition water will be accessed under licence from rivers and existing water pipelines where possible.

Where earthworks are involved and particularly at river crossings, all site runoff water will be captured in detention basins to treat sediment loads and used for dust suppression. Discharge to land will only be permitted when sediment loads are within acceptable runoff limits. All wastes will be appropriately managed through treatment and disposal by approved methods and sites will be fully restored on completion.

In support of the construction activities, significant quantities of materials including the supply of culvert and bridge elements will be delivered from off-site locations. There may also be temporary manufacturing facilities located along the Corridor route for pre-stressed concrete sleeper manufacture, flash butt welding and rock crushing for capping and ballast material supply. These activities as well as the major construction works will attract an increase in local vehicular movements for the delivery of materials to the various facilities. The Proponent will work with the Local Councils, Main Roads Department and the community at large to ensure the condition of the existing road infrastructure is maintained to a safe standard for all users during construction.

3.7.4 Operation and Maintenance

Operation and maintenance of the rail lines in the Corridor will be undertaken under contract on behalf of the Proponent. State-of-the-art locomotive and wagon facilities and other required installations will be established at locations to be determined during the EIS study period. Separate facilities will be required for maintenance of locomotives and rolling stock.

3.8 Workforce Requirements during Construction and Operation

The Project will attract a major construction workforce to the region. The Project is expected to engage approximately 3,500 workers during construction period, and it is anticipated that the operating railway and associated infrastructure will generate at least 150 direct permanent employees.

Whilst it would be ideal to house the temporary workforce within townships for the duration of the construction phase of the Project, realistically it is envisaged there may be an accommodation shortage in these areas that will necessitate temporary construction camps allowing for some fly in fly out (FIFO) construction workers.

Accommodation for the operational workforce will be accessed at suitable locations in proximity to the maintenance facilities established and required maintenance tasks, most likely at Moranbah and/or Alpha and/or Bowen townships.

3.9 Economic Indicators

Coal exports are one of the largest contributors to Queensland's economy in terms of both employment opportunities and royalties. Coal reserves in the Galilee and Bowen Basins are estimated to account for more than 70% of the known State reserves, with a significant portion of these reserves being accessible to open cut mining.

More than 65% of these reserves are thermal coal with the remainder being metallurgical (coking) coal used for steel-making. A summary of this resource and its value to the State is provided in Table 3.

Table 3: Summary of the importance of coal in the Queensland economy*

Parameter	Description
Total known reserves – Queensland • Bowen Basin • Galilee Basin	32 billion tonnes • 21 billion tonnes (coking, thermal) (estimated) • 22 billion tonnes (thermal) (estimated)
Annual production (2008-09)	• 71 million tonnes (thermal) • 106 million tonnes (coking)
Total value of coal production	$A38+ billion
Contribution to Queensland economy	56% for Mackay Region economy alone
Employment (direct and indirect estimated)	45,000 approximately

* Queensland Resources Council data – www.qrc.org.au

The Project represents an opportunity for significant domestic capital formation for Queensland. Functioning as a trade corridor for foundation customers for the proposed Abbot Point State Development Area, where it will also benefit and meet the needs of multiple economic sectors, the Project will underpin an overarching economic development strategy to enable significant downstream value adding to Australian and Queensland-sourced mineral and coal resources, including the longer term potential to establish a substantial steel industry production capacity in Queensland.

3.10 Financing Requirements and Implications

The Project is estimated to require a capital investment in the order of $A4 billion for the proposed rail infrastructure, rolling stock and communication technology within the Corridor.

Funding for the Project will be based on investor equity and debt financing, which may include leasing of rolling stock. The Proponent has been in detailed discussions with potential sources of financing for this specific Project for over a year. This includes consultation with domestic and international financial institutions and investment banks. Relevant expertise also exists within the Proponent's senior management team.

The total equity capital requirement is expected to be about $A1 billion. This will be raised from a combination of sources including infrastructure funds and private equity. The Proponent also anticipates offering equity participation to mining companies in the Galilee Basin that enter into long term "take or pay" freight contracts. The Proponent may also consider a future public share issue and listing.

The total debt capital requirement is expected to be in the order of $A3 billion. Debt financing will be supported by 20 year "take or pay" contracts with mining companies and other potential users of the railway. The Proponent is satisfied of the ability of the Project, backed by the take or pay contracts, to raise the debt financing on internationally competitive terms.

Whilst a final decision will be made later in the development of the Project, the Proponent anticipates that rolling stock will be financed through lease arrangements with an international infrastructure investment fund.

Based on recent discussions with financial institutions and current knowledge of project funding, the Proponent is confident of raising the equity and debt funding that the Project will require.

While the Project is not dependant on any source of public funding, the strategic nature of the Project and its potential to provide a range of community infrastructure services into the future may justify future public investment.

4. The Location of Key Project Elements

4.1 Location

The location of the proposed Corridor in a regional context is shown in Figure 1 (see page 13).

The alignment design has been derived from the Digital Terrain model created from the SRTM (Shuttle Radar Terrain Mapping). This data was imported into the 12D software for the alignment and earthworks calculations. The SRTM data has a stated vertical accuracy of +/- 16m.

The proposed Corridor lies within the local authority areas of Whitsunday, Charters Towers, Isaac and Barcaldine Regional Councils. Road networks in the area are limited and may require some upgrade to sustain construction traffic. Future access improvements may constitute an integral part of the proposed Corridor development.

4.2 Tenure

The key existing tenures affected by the Project are freehold and crown leasehold, predominantly for grazing purposes. Reference has already been made in Section 1 to other crown lands that might be affected such as road corridors, watercourses, stock routes and tenures for other existing infrastructure.

The Corridor will be developed according to the most appropriate tenure option after consultation with State and local governments. Options include a combination

of freehold, leasehold, sublease, or easements over existing tenures. Subject to further planning of construction requirements, temporary access to areas outside the nominal Corridor width may be necessary.

Relevant local government planning schemes relate to those townships referred to previously and will be further considered in undertaking the EIS. The issues affecting tenure are further discussed in Section 5.4 below.

5. Description of the Existing Environment

5.1 Natural Environment

This section sets out the key environmental factors relevant to the Project. Section 6 will identify the potential impacts of the Project.

A more detailed description and evaluation of its attributes in terms of potential impacts of the construction and operations of the railway will be provided in the detailed EIS to be prepared.

5.1.1 Land

The proposed Corridor for the preferred alignment traverses a variety of land forms and land uses.

The area of northern Galilee basin is in the Desert Uplands bioregion, which is characterised by plateau residuals, ridges and sand plains. Soils are of low fertility and land use is predominantly low intensity grazing of native pastures (approximately 94% of region). It is mainly a beef cattle area though some sheep are raised in the western parts.

Vegetation is mainly eucalypt woodlands with a grassy or spinifex understorey. Acacia spp. woodlands are widespread, especially where clearing has occurred and fire has been a feature. It has a semi-arid climate with seasonally highly variable rainfall (median rainfall of 450 mm approximately) which predominantly falls in the summer months.

The Corridor route crosses the Great Dividing Range and other significant catchment divides including Darkes Range, which confine drainage in the Belyando and associated tributaries, and two significant lake systems – Lake Galilee and Lake Buchanan.

The majority of the route from North Galilee to Moranbah and north to beyond Collinsville, as well as the southern spur line from North Galilee to Alpha, traverses a broad area known as the Brigalow Belt bioregion. This is an area of complex landforms and soils including extensive areas of cracking clays and sodic texture contrast soils with challenging properties for construction.

Landforms consist of undulating to rugged ranges and extensive areas of alluvial plains, the latter subject to widespread flooding in storm events. Vegetation is mainly Acacia harpophylla (Brigalow) and other Acacia spp., eucalypt woodlands and grasslands.

Climate ranges from semi-arid in the south and west to tropical in the northern parts above Collinsville. Median rainfall is about 590 mm and is summer dominant.

The route traverses much of the catchment area of the Burdekin Falls Dam and crosses the Belyando, Isaac and Bowen Rivers and their tributaries.

North-west of Collinsville, the route diverges around and through the Clarke Ranges and enters the coastal draining system of the Bogie River which flows to the ocean north of Abbot Point after skirting the Mt Aberdeen National Park. This area has a sub-tropical to tropical climate with strongly summer dominant rainfall (mean annual rainfall of 1,010 mm) and a moderate chance of cyclonic events. The area is unusual for north Queensland in that it is known as the dry tropics, being in a rain shadow to some degree though with an annual long term range of up to 2,000+ mm.

The route traverses several mountainous areas of the Clarke and Connors Ranges which are characterised by tall eucalypt forests and areas of evergreen rainforest and vine thicket. Modest earthquakes are known to occur in this area and as recent as mid 2011 and the final route alignment will factor in avoidance or mitigation measures through earthquake zones. Coastal wetlands and mangroves within the Abbot Point State Development Area occur beyond the end of the Corridor.

The geology of the route covers a broad range of lithologies and unconsolidated sediments, including:

- large tracts of Quaternary Alluvium (sands, silts and clays);
- carboniferous pyroclastics, flows, quartzose sandstones and fine grained sediments, with some lateritised overlays of Tertiary clayey sandstones;
- devonian sediments and meta-sediments with minor volcanics;
- permian sediments and areas of Tertiary duricrust on the plateau surfaces;
- tertiary basalts;
- permian sediments to the west of the Clarke Range; and
- large areas of Upper Carboniferous to Lower Permian granitic rocks of the Clarke Range before descending to the coastal lowlands.

5.1.2 Hydrology

There are several major waterways intercepted along the route. The majority of the route lies within the Burdekin River catchment draining via mainly ephemeral systems including the Belyando, Suttor and Bowen/Broken Rivers.

The Corridor will require six major river crossings and 29 creek and watercourse crossings. The river crossings are at the following rivers and creeks, some of which will be crossed more than once: Elliot, Bogie, Bowen, Suttor, Belyando Carmichael, Splitters, Finley, Sandy, Glen Blazes, Capsize, Herbert, Johnnycake, Table Mountain, Pelican, Twelve Mile, Rosell, Suttor North, Eaglefield, Kennedy, Eaglefield again, Verbena, Serpentine, Black Wattle, Bull, Bully, Sandy, Eight Mile, Laglan Spring and Forrester creeks.

Two ephemeral lakes, namely Lake Galilee and Lake Buchanan, lie towards the western end of the Project area.

Further investigations may be needed into groundwater resources of the route area as the route lies to the east of the Great Artesian Basin (GAB) and overlies the shallower groundwater resources of the Tasman Basin. Bores are predominantly for stock water and domestic use and are of variable depth and salinity.

There are no significant water supplies available along the route other than the Collinsville to Alpha water supply pipeline.

5.1.3 Air

The area is dominated by rural land use, with grazing of native pastures being the most extensive form and only smaller areas of cultivation. Cultivation is largely confined to heavy cracking clay soils deeper than 60 cm in the region as these are the only soils with sufficient water holding capacity to sustain rain-fed cropping in about 75% of years. Dust from both these sources is low and generally short-term associated with cultivation and mustering activities.

The existing airshed of the regions along the proposed route is not generally affected by dust from mining or other economic activity. The region is notable for having generally a very low to low incidence of dust storms. Hydrocarbon emissions are associated with mining and cultivation activities but the spatial distribution is such that impacts are relatively small.

Noise impacts in the rural area is low as there is little regular activity associated with heavy machinery, cultivation equipment or other noise generating sources. Noise emissions associated with operating mines are high, but these are well separated from likely areas of noise nuisance.

5.1.4 Ecosystems

The relevant regional ecosystems are set out above.

There are a number of relevant matters listed under the E*nvironmental Protection and Biodiversity Conservation Act 1999 (Cth).* Threatened plant and animal species are dealt with in the following section. Other Matters of National Environmental Significance (MNES) identified from a Protected Matters database search are shown in Table 4.

Table 4: Summary of MNES – EPBC Protected Matters search

Item	Number (10 km buffer around proposed corridor)	Description
World Heritage Properties	1	Great Barrier Reef
National Heritage Places	1	Great Barrier Reef
Wetlands of International significance (Ramsar Wetlands)	1	Coongie Lakes
Great Barrier Reef Marine Park	Relevant	General Use Zone and Habitat protection
Commonwealth Marine Areas	Relevant	General provision
Commonwealth Lands	None	-
Commonwealth Heritage Places	1	Great Barrier Reef Region
Commonwealth Reserves	None	-

Additionally, seven nationally important wetlands have been identified, which apart from Lake Buchanan, largely occur in the northern and coastal vicinity of the Corridor.

5.1.5 Flora and Fauna

A preliminary review of public databases has indicated that there are several flora and fauna species likely within the Corridor that are listed under the *Nature Conservation (NC Act) Act 1992 (Qld)* and the EPBC Act. A summary of these, taken from the EPBC Protected Matters search, is shown in Table 5.

Table 5: Summary of scheduled species – EPBC Protected Matters search

Threatened species	Number (10 km buffer around proposed Corridor)
Ecological communities	4
Threatened species	41
Migratory species	45
Listed marine species	88
Whales and other cetaceans	12
Critical Habitats	None

It is likely that not all of these species as identified in the database search process will be found and impacted by the corridor. Nevertheless, the EIS will specifically target these identified species to assess the potential impacts and develop appropriate mitigating measures where needed.

5.2 Social and Economic Environment

The proposed Corridor traverses parts of Whitsunday, Charters Towers, Barcaldine and Isaac Regional Council local government areas. Significant towns within or near to Corridor include Bowen, Abbot Point, Charters Towers, Collinsville, Moranbah and Alpha. Outside of the towns, rural and agricultural activity dominates the social and economic character of the region.

5.2.1 Economic and Demographic Characterisation

Readily available regional statistics have been obtained from a search of the PIFU database using the Bowen Basin Population Report, 2010 (Office of Economic and Statistical Research, Qld Government, June 2010) and an OESR generated report for Central highlands and Charters Towers regions (www.oesr.qld.gov.au 23 October 2011)

The rural community is largely associated with extensive grazing properties and is broadly distributed while Moranbah and Bowen/Abbot Point are predominantly urban communities. A summary of key population statistics is provided in Table 6.

Table 6: FTE populations for the Bowen Basin, June 2010 (after OESR Bowen Basin Population report, 2010)				
Statistical Local Area (SLA)*	**Resident population estimated**	**Total non-resident workers**	**FTE population estimate**	**Percentage of non-resident workers**
Belyando	12,091	3,278	15,369	21
Nebo	2,989	3,714	6,703	55
Bowen	14,442	479	14,921	3
Total	29,522	7,471	36,993	26

***** These three SLAs represent the full route coverage

Belyando SLA covers the North Galilee to Moranbah area, while Nebo and Bowen SLAs cover the northern section through Collinsville to Abbot Point.

5.2.2 Accommodation and Housing

It is clear that a significant component of the SLAs that represent the mining provinces depend on non-resident workforce to the extent of 21% and 55% respectively, while Bowen (including Collinsville) is sufficiently close to the coast to attract a full time resident population. This highlights the importance of fly-in-fly-out (FIFO) and drive-in-drive-out (DIDO) populations to the mining industry. The lack of well distributed urban centres along the route highlights the critical need to establish attractive employment opportunities to encourage regional growth and development.

There is limited availability of commercial accommodation (houses, motels, boarding houses etc.) in the region with the great proportion of non-residents being housed in mine-supplied single person quarters (SPQs). A brief summary of accommodation options for the Bowen Basin or relevance to this proposal is provided in Table 7.

Table 7: Non-resident workers – accommodation sources for the Bowen Basin, June 2010 (after OESR Bowen Basin Population report, 2010)				
Statistical Local Area (SLA)*	**Number of non-resident workers**	**Hotels/motels**	**Caravan parks/other**	**Total**
Belyando	2,711	210	357	3,278
Nebo	3,607	62	45	3,714
Bowen	243	23	213	479
Total	6,561	295	615	7,471

*****These three SLAs represent the full route coverage

The major source of accommodation is dependent on the provision of SPQs, which service both FIFO/DIDO and semi-permanent workforces. This restricts the ability of families to relocate to the region and to establish viable communities. EWLP recognises that the Queensland Government is seeking to limit the impact of FIFO/DIDO workforces and will investigate ways in which this may be achieved.

5.2.3 Social and Recreational Services

There are limited social and recreational facilities available in Collinsville and Moranbah to meet the needs of a largely temporary workforce while servicing the needs of the resident population. EWLP recognises the potential for large itinerant workforces to involve some adverse impacts on local communities.

5.2.4 Cultural Heritage (Indigenous and non-indigenous)

A number of Native Title claims are likely to be active over the route of the Corridor. The Jangga and Birri peoples have active claims in the region affected. Contact will be made with representatives of the local Traditional Owner groups to seek cultural heritage clearance for the route investigation and eventual construction process.

Consultation will include the nature and form of Indigenous Land Use Agreements (ILUA) where appropriate and the development of a Cultural Heritage Management Plan (as set out in Section 7.4 below of this IAS) as part of the construction process. It will be necessary to initiate discussions with the claimants at the appropriate time.

Landholders and local historical groups will be approached also to determine the European heritage values of the area. Given its interesting history of settlement and the long-standing of several homesteads, it will be desirable to ensure that these values are protected to the maximum extent possible. Detailed assessment will be initiated and appropriate consultation undertaken with representative bodies in the course of undertaking the EIS.

5.3 Built Environment

Townships near the route are Bowen, Collinsville, Moranbah and Alpha. The route does not go directly through these townships but passes close by some of the communities. The Corridor terminates at the Abbot Point State Development Area, which has been dedicated by the Queensland Government as an industrial and port complex and nearby and to the north west of the township of Alpha.

The principle infrastructure along the route consists of grazing and mining operations, roads, bridges and existing railways. Substantial mining operations already exist in the Bowen Basin and drilling is well underway within mining tenements of the Galilee Basin.

5.3.1 Infrastructure

The Corridor route traverses largely undeveloped country; however there is some infrastructure in the region that will be potentially impacted.

There are Council and State controlled roads in the region, and the Corridor is intended to approximately parallel the existing QR National corridor north of Moranbah. The Corridor will require measures to address crossings involving:

- Eight State Controlled Roads
- Sixteen unsealed Local Government Roads, and
- Nineteen Stock Routes

Ergon and Powerlink hold rights of way for power lines in the area of the Bruce Highway near Abbot Point State Development Area and transmission lines on several properties will cross the Corridor. Powerlink, in particular, has transmission lines which would cross the Corridor within the following properties: CeSalis, Strathalbyn (north west of Collinsville), Havilah, and Eastern Creek (south of Collinsville)

Numerous other crossings occur where there are low voltage power lines for local distribution of power.

A Sunwater Pipeline runs through the region. The Corridor is closely aligned beside the pipeline in several locations and crosses it once near the North Goonyella mine.

The North Queensland Gas Pipeline runs through the region. The Corridor runs close beside it in several locations and also crosses it once near the North Goonyella mine.

5.3.2 Traffic and Transport

The preferred Corridor will intersect the Bruce Highway and the Gregory, Suttor, Cerito and Bowen Development Roads, as well as numerous smaller shire roads.

Unsealed local government controlled roads potentially affected include: Glenore, Strathalbyn, Herbert Creek, Johnny Cake, Strathmore, Myuna North, Myuna South, Collinsville Elphinstone, Broadmeadow, Kilcummin-Diamond Downs, Stratford, Moray-Bulliwallah, Moray-Carmichael, Laglan Lou Lou Park, Jerico-Degulla, Degulla roads.

Detailed investigations will be undertaken for the preferred route during the EIS phase. It is likely that many internal property access tracks will also be impacted by the Corridor.

The remoteness of most of the route is unlikely to generate traffic management issues relevant to the Project.

5.3.3 Community Amenities

There are limited social and recreational facilities available in Collinsville and Moranbah to meet the needs of a largely temporary workforce while servicing the needs of the resident population. There are no key social amenities and services affected by the Project. Investment by the Proponent in social amenities for workers during the construction and operational phases will be addressed more fully in the EIS.

5.4 Land Use and Tenures

The dominant land use is beef cattle on leasehold lands and coal mining by open cut methods. Significant areas of rain-fed cropping land occur with smaller areas of irrigated cropping along the Bowen-Broken Rivers near Collinsville.

North-west of Collinsville, the route diverges around and through the Clarke Ranges and enters the coastal draining system of the Bogie River which flows to the ocean north of Abbot Point after skirting the Mt Aberdeen National Park. The predominant land use is cattle grazing and agricultural.

5.4.1 Key Local and Regional Land Uses

Key land uses, local government areas, protected areas and mining development areas have been addressed above. These include agricultural, mining, urban township, crown and environmental reserves and transport and utility infrastructure.

5.4.2 Key Local and Regional Land Tenures

Existing tenures in the region to be traversed by the Corridor include:

- Freehold;
- Crown land;
- Pastoral leases;
- Easements, covenants and rights of way; and
- Native title.

The regions west of Moranbah consist of lands predominantly used for beef cattle production. Current assessment indicates the following properties will be potentially affected by the Corridor.

- Eighteen grazing properties between Abbot Point and Moranbah
- Eleven grazing properties between Moranbah and North Galilee
- Nineteen grazing properties between Galilee North and Alpha

The Corridor terminates at Abbot Point State Development Area and associated coastal management zone. The port at Abbot Point will potentially affect the Great Barrier Reef World Heritage Area, however, the port development *per se* is not part of the Corridor within the scope of this Project. Four local government areas are affected and the Abbot Point State Development area will be subject to a development control plan.

The Proponent intends to acquire all land needed for the Corridor under either Freehold title or long term leases or by way of easement rights so as to provide security of tenure to users of the Corridor to meet their commercial requirements under long term contracts. Freehold title will also facilitate access to capital for development costs.

Where freehold title is not feasible, the Proponent proposes to discuss with government the availability of alternative tenure arrangements that will still ensure long term security for the Corridor, whether through alternative designations of Project land or under arrangements analogous to those provided for in the *Transport Infrastructure Act 1994 (Qld)* in relation to rail corridor land and acquisition of land for use as part of a rail transport corridor.

5.4.3 Native Title

The *Native Title (NT) Act 1993* recognises the rights and interests of indigenous peoples with respect to their traditional laws and customs where they can demonstrate a continuing involvement with the land.

Claims have been registered over various parts of the overall route by the Birri People, Wiri People (core country claim) and the Jangga People (as per the Federal Court National Native Title Tribunal - 30 September 2011). Determinations of Native Title over these areas are pending.

5.5 Planning Instruments, Government Policies

There are a series of approvals required for significant project declaration and which are part of the Environment Impact Statement (EIS) process. The Coordinator-General has powers under the *State Development and Public Works Organisation Act 1971 (Qld)* (SDPWO Act) to direct that an EIS be undertaken for significant projects

and these may involve referral to the Commonwealth Government for determination under the EPBC Act.

When an EIS is being conducted under the SDPWO Act, the Integrated Development Assessment System (IDAS) approvals under the *Sustainable Planning Act 2009 (Qld)* (SPA) as well as other approvals processes of other relevant Acts are suspended. This suspension remains in place until the Coordinator General's evaluation report is completed and sent to the IDAS assessment manager and other approval managers for their consideration.

Other legislation that may have relevance to the Project is set out below.

- *Native Title (Queensland) Act 1993 (Qld);*
- *Aboriginal Cultural Heritage Act 2003 (Qld);*
- *Environmental Protection Act 1994 (Qld);*
- *Vegetation Management Act 1999 (Qld);*
- *Nature Conservation Act 1992 (Qld);*
- *Water Act 2000 (Qld);*
- *Dangerous Goods Safety Management Act 2001 (Qld);*
- *Petroleum and Gas (Production and Safety) Act 2004 (Qld);*
- *Transport Infrastructure Act 1994 (Qld); and*
- *Mineral Resources Act 1989;*

There are also several Policies and Guidelines that must be complied with such as air, noise, water, waste and riverine protection permitting. The Project will be subject to several Environmentally Relevant Activities (ERA) requiring approvals by Department of Environment and Resource Management (DERM).

Reference has been made to other Government policies in Section 1.

6. Potential Impacts of the Project

6.1 Natural Environment

Construction of the Corridor and rail lines will have potential impact on land and water resources. Regional vegetation communities affected include the Desert Uplands and Brigalow communities.

During clearing and earthworks operations required for the construction of the rail formation and site access roads and during excavation activities for culvert installations there are likely to be impacts associated with runoff from bare surfaces leading to sedimentation in streams. Similar impacts will arise from quarrying activities established within relative proximity external to the Corridor for the supply of suitable track formation and rail ballast materials and in relation to the establishment and operation of concrete batch plants.

Properly understanding the flow characteristics of streams in catchments upstream and downstream of the Corridor will be important to the design of Corridor infrastructure (rail, road, bridge, pipes and culverts) to minimise impacts on the catchments and downstream floodplains.

Coal dust contamination of areas adjacent to the Corridor will be averted by virtue of the need for only one rail transport Corridor and the proposal in this Project to

use specially designed closed-lid coal freight wagons. This will protect nearby grazing pastures from contamination and also minimises the risk of fire outbreaks.

The on-site haulage of materials and the use of the site access roads to bring construction equipment and permanent materials including reinforcing steel and concrete materials to site are likely to have ongoing sediment runoff impacts. The road transport of construction materials from off-site locations to site may also have impacts on the integrity of the local road network.

Selection criteria for the Corridor route alignment included:

- avoiding known sensitive environmental areas, homesteads, townships and minimising the impact to other infrastructure;
- avoiding National Parks, existing mines and urban concentrations;
- reducing the risk within flood prone areas, major watercourses and difficult topography by locating the alignment in higher ground, positioning major watercourse crossings as upstream as conceivably possible whilst avoiding flood plains and avoiding mountainous terrain;
- grade separation of major road, rail and existing infrastructure crossings;
- a desktop geotechnical investigation of the proposed Corridor route identifying high risk areas such as poor foundation materials (black soil), sources of suitable borrow materials for embankment construction and rock areas for crushing for ballast supplies;
- optimising the Corridor route and width to accommodate a minimum of two railway lines to potentially service the greatest number of mines within a single Corridor and thereby minimise the land footprint;
- impose less social, biological and ecological impact than the multiple alternative corridors under consideration by minimising the amount of grazing and agricultural land sterilised for the transport of coal; and
- allow within the Corridor for expansion to four rail lines and extension to Mt Isa, the North West Minerals Province and beyond.

Such an innovative approach to infrastructure and resource management has the following advantages:

- minimises impacts on identified Strategic Cropping Land areas and other good quality agricultural land;
- minimises exposure to flood-prone areas risk of operational impairment of the railway during wet seasons;
- minimises impacts within black soil areas considered as high risk potential of substandard foundation conditions and instability;
- provides grade separated crossings to major arterial roads and railways removing risk of vehicular/train collisions and traffic delays to the public;
- minimises environmental impacts, including greenhouse gas emissions, by introducing heavy haul freight capacity rolling stock carrying significantly greater tonnages per travel event thereby requiring significantly fewer travel events for any given amount of product moved to port, compared to existing practices in Queensland ;

- provides covered/enclosed coal wagons, thus significantly reducing environmental impacts of dust loss on local communities adjacent to the Corridor; and
- allows mine operators to share costs and retain valuable capital funds to underwrite further development by avoiding a high level of investment in individual separate rail infrastructure.

Operation of the facility is likely to involve minimal impact on land resources however care will be needed to address impacts on overland water flows.

There are environmentally sensitive areas in the region and these will be subject to more detailed assessment as part of the EIS process. Final route selection will however avoid, for example, Blackwood and Mt Aberdeen National Parks and remnant forests associated with the Leichhardt Range and uncleared areas within the Burdekin Dam catchment.

Potential impacts on fauna and flora are likely to be confined to loss of habitat along the Corridor and indirect impacts where the Corridor may bisect faunal corridors or affect adjacent habitat/communities. Where vegetation is partially cleared, this may lead to edge effects and potential impacts on the sustainability of the smaller remnant plant community. During construction, there are also likely to be impacts from frequent vehicular movements between properties in regard to the potential spread of flora pest species.

6.2 Amenity – Including Noise, Air Quality, Vibration, Lighting, Urban Design and Visual Aesthetics

Construction and operation of the railway within the Corridor will involve some dust emissions associated with earthmoving machinery and other vehicular activity.

Though most of the Corridor is in remote or sparsely populated rural locations, rail operation will generate potential noise and vibration impacts which, will need to be managed, in particular where the route approaches or is adjacent to homesteads and townships.

A significant benefit of this proposed open access, heavy haul 40 tonnes load per axle railway compared to proposals to construct multiple less efficient lines and corridors is that significantly less train movements will be required resulting in correspondingly less noise and amenity impacts for the same tonnage of coal hauled.

Visual amenity is unlikely to be significantly affected by the Project however this will be assessed in more detail, in particular in relation to township development.

6.3 Social Environment – Beneficial and Adverse Potential Impacts

The social environment is characterised largely by rural communities and towns. The key issues in relation to social impact are potential impacts on social amenity, noise and vibration, construction impacts, employment, housing and accommodation and cultural heritage.

The issues relating to the construction workforce are discussed elsewhere in this document. Housing and accommodation will need to be addressed in the context of construction and ongoing operation of the Project.

Indigenous culture may be affected and this will need to be assessed and managed as part of the EIS.

6.4 Economic Effects

The Project will clearly have beneficial impacts on employment and attraction of a workforce to the area. This will in turn provide an injection of private expenditure into local economic activity which could and may assist in the revival or growth of regional townships.

The Corridor will also potentially enhance access to freight services for township and rural production outputs and provide a Corridor for delivery of fuel and other services to the regions through which the Corridor passes. As a multipurpose Corridor, the potential for upgraded communications and other utility services will be presented also.

6.5 Built Environment

The Project will involve the construction of several rail-over-river and road-over rail bridges to meet the needs of the Project and avoid impacts on the travelling public. Power, water and telecommunications will be provided as components of the construction, including state-of-the-art wireless communications and signalling technology.

The Proponent is already a licensed carrier under the Commonwealth Telecommunications Act, and as well as the digital wireless overlay system, plans to offer a best of breed Train Control System (TCS) to other operators so that all train command and control operations are on a single shared platform to facilitate maximum efficiency. The installation of this infrastructure will have minimal impacts due to its modest footprint.

The Corridor will intersect the Gregory, Suttor and Bowen Development Roads as well as several shire roads. A detailed inventory will be developed during the EIS of all likely impacts on established roads and farm tracks. This will include traffic studies to identify impacts on significant roads. Nevertheless, the Proponent intends to ensure there will be no impact on the general travelling public and will construct road-over-rail (or rail-over-road where landform enables it) to provide for continuity of operation and maximum public safety.

6.6 Matters of National Environment Significance

There are matters, including threatened species, listed under the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*. Other Matters of National Environmental Significance (MNES) identified from a Protected Matters database search are shown in Table 5 above. Several wetlands of national importance, largely in the northern and coastal vicinity of the Corridor, while not directly affected by the Corridor, will need to be assessed in the context of the EIS.

7. Environmental Management - Mitigation Measures

This proposed single, multi user infrastructure Corridor has many environmental benefits compared to alternative options which would require multiple corridors and its carefully selected route aims to eliminate their potentially divisive social impacts.

Having the capacity to handle all coal freight from the Galilee Basin and significant quantities from the expanding Bowen Basin coalfields, it will obviate the need to construct any of the other multiple haulage routes proposed, which traverse in different directions from separate points along the Galilee Basin to Moranbah and/or Abbot Point.

It will also enable the development of all future mines in the Galilee coal basin by the addition of only short spur lines within the mining tenement areas, which other proposed multiple routes cannot facilitate due to their cross-country remoteness.

The proposed Corridor alignment substantially avoids floodplains and farm cropping lands thereby minimising the requirement for significant flood mitigation structures. In addition, by selecting a topographically suitable route, it generates reduced earthworks quantities thus minimising the requirement for imported fill.

For optimum economic freight efficiency the proposed Corridor adopts a maximum 1:320 loaded gradient and utilises 40 tonnes load per axle closed lid coal wagons rolling stock. This economic efficiency is gained hand in hand with fewer train movements with consequent reduction in environmental impact e.g. noise, coal dust and diesel exhaust emissions.

The Proponent proposes to produce an environmental management system for the construction and operational phases of the Corridor that is consistent with the principles of ISO14001 and is amenable to independent third party audit against accepted standards of performance.

7.1 Natural Environment

In the Environmental Management Plan for the Project, key measures to avoid or minimise environmental impact on the land, water and vegetation resources of the affected route will be addressed.

Impacts from clearing of vegetation will be minimised due to the largely open nature of the selected route. No burning of vegetative waste will be allowed and all material will be mulched and used for batter stabilisation.

Potential impacts with fauna and flora are likely to be confined to loss of habitat along the Corridor and indirect impacts where the Corridor may bisect faunal corridors or affect adjacent habitat/communities. Where appropriate, consideration will be given to providing underpass or overpass structures to aid Fauna and flora habitat connectivity. Where plant communities are partially cleared, this may lead to edge effects and potential risks to fauna reliant on the smaller community remnant. In such cases, appropriate offsets will be proposed and implemented. Detailed investigation of the Regional Ecosystems listed for the proposed route will validate existing mapping and be used to develop effective management approaches to impacts.

The construction EMP will establish procedures to avoid sedimentation of streams and impacts on ecosystems along the route. All areas disturbed by construction will be rehabilitated progressively on completion of activities in that section. Water will mainly be required for the construction period only and appropriate measures will be taken to acquire appropriate supplies with no impact on local demand for stock and domestic supplies.

The Project when operational will have minimal to no impact on surface and groundwater as flooding risk will be managed through design intervention and the covered wagons will prevent fugitive coal dust entering the surface water environment.

Thorough investigation will be undertaken of all MNES during preparation of the EIS. The database search results are indicative and not definitive for the Corridor and will be tested for validity. The Corridor has been selected to avoid all presently known environmentally sensitive areas and will be refined as detailed information comes to

hand. Appropriate management or recovery plans will be developed as and if necessary. As the development does not drain to the Cooper Basin, there will be no impacts on the Ramsar Wetlands in the Coongie Lakes area.

7.2 Built Environment

A detailed inventory will be developed during the EIS of all likely impacts on established roads, stock routes and landholder access roads and tracks. This will include a traffic study to identify impacts on significant roads. Nevertheless, the Proponent has already determined that there should be no impact on the general travelling public and will construct road-over-rail (or rail-over-road where landform enables it) to provide for continuity of operation and maximum public safety.

In developing solutions on properties where internal tracks (and also traditional cattle movement to watering points or during mustering cycles) are disrupted, the Proponent will involve landholders in the process to ensure that property management is not impacted. Alternative thoroughfares either under or over the railway will be considered.

The Proponent proposes to provide social and recreational facilities at the construction accommodation villages, where appropriate, to ensure that the temporary workforce does not cause disruption to existing established communities. These amenities may be available to communities on completion of the construction project for their continued use.

7.3 Social Impact Management Plan

This proposal offers the reduction of multiple haulage routes to a single, carefully selected Corridor which will minimise the impact on land, the grazing industry and landholders. This will also greatly reduce the fragmentation of rural properties and disruption of normal daily farm management activities.

Air and noise emissions limits will be subject to the Construction EMP to be developed for the Project. Strategies to minimise long term emissions will include real time locomotive management via the wireless overlay network, and regular maintenance of locomotives to ensure the most efficient consumption of diesel fuel. Additionally, the use of covered coal wagons will avoid the release of coal dust to the atmosphere. The capacity to move larger volumes with fewer trains will help limit both air quality issues and noise emissions.

A social impact management plan addressing all the key issues outlined will be prepared as part of the EIS.

7.4 Cultural Heritage Management Plan (Indigenous)

The development of a Plan to address indigenous cultural heritage will be undertaken through discussions with the traditional owners and the outcomes of the current native title claims. Appropriate investigations will be undertaken in line with the EIS. A Cultural Heritage Management Plan (CHMP) and Indigenous Land Use Agreement (ILUA) as required will be entered into with the relevant Traditional Owners (TO) following negotiations.

Where significant artefacts, places and other areas of interest are identified these will be dealt with having regard to the desires of Traditional Owners.

7.5 Non-Indigenous Cultural Heritage Management

This will be addressed as part of the EIS although there do not appear to be any places registered on the Inventory of Heritage Places that will be affected by the

Corridor. Landholders and local historical groups will be approached to determine the European heritage values of the area. European heritage will be preserved or relocated where required in situations where it cannot be avoided. Given its interesting history of settlement and the long-standing of several homesteads, it will be important that these values are protected to the maximum extent possible.

7.6 Greenhouse Gas Management Plan

Construction and operation of the Corridor will result in some greenhouse gas emissions. The Corridor design and operational configuration of the freight services using it are intended to optimise the efficiency of operation and minimise emissions substantially compared to all other currently proposed alternatives.

The EIS will estimate the quantum of emissions GHGe likely to be produced per year in line with standard estimating procedures using the Queensland Government's Guidelines for Preparing a Climate change Impact Statement (CCIS) (EPA 2008). Although a CCIS is normally only required for a proposal submitted to Cabinet, these guidelines provide a basis for assessing specific expectations regarding assessment of potential climate change impacts.

Emissions will be quantified as far as is practicable. Inputs such as embodied energy associated with steel manufacture for the rail lines and other materials to be used in construction will not be considered for the construction phase EIS.

The use of a much greater haulage capacity with the 40 tonnes load per axle wagons has potential to significantly reduce the volume of GHGe per unit of coal transported, making the Project more efficient in this respect. It is in the economic interest of the Project that the efficiencies, especially in energy use, will be optimised and an Energy Management Plan will be developed for the operational phase of the Project.

7.7 Waste Management

The construction phase of the Project will be likely to generate waste materials which require management. This will be coordinated as part of the Environmental Management System for the Project to ensure waste is minimised and where feasible recycled, given that most materials will need to be transported in to the construction site/s. Clear procedures to address these issues will be established as part of the Construction EMP.

As the route hugs the foothills of the ranges and avoids the clay plains, there will be sources of rock and spoil that can be used for rail embankment construction. Additionally, as there are significant outcrops of basalt and granitic rocks, it is likely that this material can be used for aggregate in concrete and ballast for the rail tracks, avoiding waste and the necessity for long haulage costs from existing sources.

Where earthworks are involved and particularly at river crossings, all site runoff water will be captured in detention basins to treat sediment loads and used for dust suppression. Discharge to land will only be permitted when sediment loads are within normal runoff limits. All wastes will be appropriately managed through treatment and disposal by approved methods and sites will be fully restored on completion.

Grey water generated from the camp population will either be treated on site and recycled on garden areas within the camp facilities or removed from site and

disposed of in accordance with the Local Council Bylaws within approved disposal areas.

7.8 Hazard and Risk, and Health and Safety

Hazards and risks with the potential to adversely affect people, property or the environment will be fully assessed as part of the EIS for the Project. Key hazards relate to the construction phase of the Project, particularly in respect of workplace safety. Operational phase safety issues will be similar to that required of existing rail operations so far as potential operating workforce and third party impacts are concerned. Appropriate risk management strategies and tools will be developed as part of the EIS and the Workplace Health and Safety Plan for the Project.

7.9 Environmental Management

A series of sub-plans will constitute The EMS for the Project as follows:

- ***Construction Environmental Management Plan (CEMP)***

  During the EIS phase a Draft CEMP will be prepared identifying the environmental elements that will need to be addressed during construction. Once a head contractor has been appointed and a construction methodology is confirmed, this Draft CEMP will be expanded to accurately reflect specific aspects of the proposed delivery mechanisms. Detailed risk assessment will be undertaken by the project team to ensure that all likely impacts are identified and mitigated as far as possible. The CEMP will then target residual risks.

  Key components of the CEMP will include for each element:

  - likely impacts;
  - responsible person/authority;
  - corrective measures;
  - reporting requirements;
  - monitoring and review procedures;
  - communications with personnel for updates; and
  - continuous improvement strategy.

  The Contractor will appoint staff responsible for the implementation of the CEMP and ensure that compliance with all procedures is achieved in line with conditions imposed by the regulating authorities.

- ***Operational Environmental Management Plan (OEMP)***

  A similar format will be adopted for the operational phase of the Project.

- ***Workplace Health and Safety Plan (WHSP)***

  A WHSP will be developed in conjunction with the CEMP and a responsible officer appointed to be charged with ensuring that all activities comply with State and Federal guidelines and standards. Safety of the workforce in a remote location is of critical importance where access to medical support faces significant time delays.

  Regular toolbox talks and provision of adequate water, PPE, shade and sun protection cream will be key attributes of the WHSP. Officers will be trained in

such measures as snake bite treatment given the rural and isolated nature of much of the construction route.

- ***Decommissioning Plan***

  As the Corridor is seen to have much wider potential than just the Corridor from the Galilee to Abbot Point, it is not critical at this juncture to plan for a decommissioning plan. It is understood that the expected life of several mines in the Galilee Basin alone is more than 150 years, though much of this depends on the world's future global patterns of continued use of fossil fuels for both thermal and manufacturing purposes.

8. Approvals Required for the Project

The following approvals and triggers are a preliminary assessment having regard to the desktop work and preliminary surveys. It is expected that a complete list of approvals will be included in the draft Environmental Impact Statement.

Approvals required for all stages of the Project will include development approvals from local governments or other applicable assessing authorities, building and safety approvals relating to permanent and temporary structures, international standards, licences and permits for heavy lifts and loads, materials stored on site/transported to the site, emissions from construction machinery, operational works, disposal of waste, and all other impacts involved in the construction of a Corridor.

The legislation, policies and information on the likely approvals required for the Project, including ISOs, has been sourced from the Agency websites and from the State and Commonwealth Administrative Arrangements Orders.

Table 8: Approvals Required For The Project

Activity/Approval Trigger	Legislation, Policy, Standard, Permit, Licence	Administering Authority	Activity
Australian Government			
Fauna and Flora of National Significance	Environment Protection and Biodiversity Conservation Act 1999 (Cth)	Department of Sustainability, Environment, Water, Population & Communities	Desktop survey work has been undertaken, survey work has been undertaken for other mining and corridor projects within the Study Area. It appears likely that ground truthing and survey work will reveal fauna and flora of national significance will be present within the survey area
Protection of Critical Infrastructure	Critical Infrastructure Protection National Strategy, Critical Infrastructure Emergency Risk Management & Assurance Handbook, National Counter-Terrorism Plan,	Coordinator General in consultation with relevant Security Agency	
	AS/NZS 4360:2004 Risk Management, HB 167:2006 Security Risk Management, HB 221:2004 Business		

Table 8: Approvals Required For The Project			
Activity/Approval Trigger	**Legislation, Policy, Standard, Permit, Licence**	**Administering Authority**	**Activity**
	Continuity Management, HB 292-2006 & HB 293-2006 Business Continuity Management.		
Native Title Act 1993 (Qld)	Approvals, agreements	Attorney General's Department	Negotiations and agreements with Traditional Owners and claimants regarding access to their land
Importation of machinery and equipment through the Port of Abbot Point	*Maritime Transport and Offshore Facilities Security Act 2003 (Cth)*	Department of Infrastructure and Transport, NQBP Limited.	
	ACN 2007/03 Customs Approach to Managing Cargo Reporting Compliance,		
	Australian Customs Cargo Advice.		
Use of Port Authority Land & Shipping Channels	Project Specific Environmental Management Plan, Port of Abbot Point Land Use Strategy, North Qld Bulk Ports Environment Policy, Port of Abbot Point Environmental Management Plan 2010, Environmental Management System.	North Qld Bulk Ports Limited, Department of Transport & Main Roads.	
Frequency Allocation for Rail Communications and Signalling	*Telecommunications Act 1997 (Cth)* subsection 56 (1)	Australian Communications and Media Authority Attorney Generals Department	Frequency Allocations and Interception Capability Plans
Local Government			
Development approval	Whitsunday Regional Council Planning Scheme	Whitsunday Regional Council	
Development approval	Isaac Regional Council Planning Scheme	Isaac Regional Council	
Development approval	Charters Towers Regional Council Planning Scheme	Charters Towers Regional Council	
Development approval	Barcaldine Regional Council Planning Scheme	Barcaldine Regional Council	
Development approval	*Sustainable Planning Act (Qld) 2009*	Department of Local Government & Planning	
Building approvals	*Building Act 1975 (Qld)* Building Act Regulations Building Code of	Department of Local Government & Planning	

Table 8: Approvals Required For The Project			
Activity/Approval Trigger	**Legislation, Policy, Standard, Permit, Licence**	**Administering Authority**	**Activity**
	Australia		
Blackwater & grey water on-site sewage systems for construction crews	*Plumbing & Drainage Act 2002 (Qld)* Standard Plumbing & Drainage Regulation Plumbing & Wastewater Code	Department of Local Government & Planning	
Potable water supply for construction crews	Water Allocation Register	Department of Environment & Resource Management	Approval may or not be required under the *Water Act 2000 (Qld)*
Water supply for wash down areas and for site construction watering needs	Water Allocation Register Local Government	Department of Environment & Resource Management	Approval may be required to use grey water for wash down and site construction watering needs
Food handling, waste control for temporary site facilities	Local Govt approval for Environmentally Relevant Activities	Separate approvals from each Council	
Queensland Government			
Abbot Point State Development Area	*State Development & Public Works Organisation Act 1971 (Qld)*	Office of the Coordinator General	Not required for the construction of this Infrastructure Corridor, however, approval will be sought should set down areas be required for the machinery and equipment required to construct the Infrastructure Corridor
Security Response to Incidents	Queensland Counter-Terrorism Strategy Queensland Infrastructure Protection and Resilience Framework Queensland Government Information Security Classification Framework	Office of the Coordinator General	
Approval to clear vegetation	*Vegetation Management Act 1999 (Qld)*	Dept Environment & Resource Management	
Water permit to take water from a watercourse, lake or spring or groundwater if required for construction purposes	*Water Act 2000 (Qld)* Water Act Regulations	Dept Environment & Resource Management	
Watercourse Crossings	*Water Act 2000 (Qld)* Water Act Regulations	Dept. Environment & Resource Management	
Removal of vegetation from a watercourse – Riverine Protection Permit	*Water Act 2000 (Qld)* Water Act Regulations	Dept. Environment & Resource Management	
Road and infrastructure crossings	*Transport Infrastructure Act 1994*	Dept. Transport & Main Roads	

Table 8: Approvals Required For The Project			
Activity/Approval Trigger	**Legislation, Policy, Standard, Permit, Licence**	**Administering Authority**	**Activity**
	(Qld)		
	SunWater	SunWater	
	Powerlink	Powerlink	
	Petroleum and Gas (Production & Safety) Act 2004 (Qld)	Dept. Employment, Economic Development and Innovation	
Use of State Controlled Roads	*Transport Infrastructure Act 1994 (Qld)*	Dept. Transport & Main Roads	
Use of Local Government Roads	*Local Government Act 2009 (Qld)*	All Councils	
Accreditation for Operator	*Transport (Rail Safety) Act 2010 (Qld)*	Dept. Transport & Main Roads	
Protection of fauna and flora	*Nature Conservation Act 1992*	Dept. Environment & Resource Management	
Environmentally Relevant Activities	*Environment Protection Act 1994 (Qld)*	Dept. Environment & Resource Management	
	Schedule 2 Environment Protection Regulation	Dept. Environment & Resource Management	
Air Quality	Environment Protection (Air) Policy 2008 (Qld)	Dept. Environment & Resource Management	
Noise Emissions	Environment Protection (Noise) Policy 2008 (Qld)	Dept. Environment & Resource Management	
Water Quality	Environment Protection (Water) Policy 2009 (Qld)	Dept. Environment & Resource Management	
Waste Management	Environment Protection (Waste Management) Regulation 2000 (Qld)	Dept. Environment & Resource Management	
Waste Management	Environment Protection (Waste Management) Policy 2000 (Qld)	Dept. Environment & Resource Management	
Cultural Heritage, Cultural Heritage Management Plans	*Aboriginal Cultural Heritage Act 2003 (Qld)*	Dept. Environment & Resource Management	
Cultural Heritage	*Queensland Heritage Act 1992 (Qld)*	Qld Heritage Council	
Workers' health and safety	*Workplace Health & Safety Act 1995 (Qld)*	Dept. Justice & Attorney General	
Movements and storage of goods	*Dangerous Goods Safety Management Act 2001 (Qld)* & Regulation	Dept. Justice & Attorney General	
Purchase of land, right of way over land for location of Corridor	Negotiated agreements with land owner, change to title deed	*Property Law Act 1974 (Qld)* *Land Title Practice Manual* *Land Act 1994 (Qld)* for State land	

9. Costs and Benefits Summary

9.1 Local, State and National Economies

The core component of the Corridor will consist of an investment in rail infrastructure estimated as having a capital construction cost of $A4 billion, including rolling stock and communications infrastructure.

The Proponent, as a licensed carrier, is planning a carrier grade high availability communications infrastructure to support the freight operation and potentially provide new or improved communications links through the regions traversed by the Corridor at an estimated cost of $A360 million.

The Corridor will have the potential to support the development of mines in the Galilee and Bowen coal basins to transport an estimated capacity in excess of 300 million tonnes per annum.

As elaborated upon in Section 3 above, the proposed rail operation in the Corridor, by adopting a standard gauge 40 tonnes load per axle freight wagon at max 1:320 gradient, meets all of the criteria essential for optimum economic freight efficiency. Uniquely among the possible Corridor route options it will ensure the comparative economic benefit is returned to all parties using the railway via the least possible cost per tonne hauled.

The Project will support the development of mining projects worth $A40 billion in the Galilee and Bowen coal basins with employment potential to reach 2,000 permanent jobs.

The mining industry resources unlocked will, on current estimates of up to 300 Mtpa, generate potential export revenue totalling $A45 billion per annum.

The Corridor opens up access to regional and rural communities to new freight capacity at marginal cost to users for such items as agricultural product to port, water and fuel to farm and supplies to regional towns and communities.

The Corridor will be capable of future extension to Mt Isa and the North West Minerals Province to enable improved access to and transportation of copper, zinc and other minerals to a sea port at Abbot Point.

9.2 Natural and Social Environments

The construction of a single infrastructure Corridor serving the Bowen and Galilee coal basins and associated regional communities will achieve the least impact on the natural environment of all current options being proposed for transporting goods by rail between the Galilee Basin and Abbot Point.

The Corridor and railway in its construction phase will generate 3,500 full time employment positions and maintain at least 150 jobs in its operational phase.

The Corridor is to be constructed along a route of overall least economic cost along the foothills of ridges to avoid the high cost of construction on the floodplains and poor soil foundations (black soil) where the Corridor would otherwise have higher impacts on the best available agricultural and grazing lands.

The Proponent proposes a unique operational configuration that ensures freight is carried in covered or ‘closed in’ rail wagons which will avoid dust loss and its associated impacts on land, infrastructure and people adjacent to the Corridor.

10. Community and Stakeholder Consultation

10.1 Stakeholder Engagement

The Proponent commenced its broad stakeholder communication and engagement Strategy in 2010.

Discussions were held with the Mayors of Whitsunday, Isaac, Cloncurry and Barcaldine Regional Councils to determine how the peak groups and individuals in their communities preferred to be briefed on the Project.

Upon their advice and information given by officers from the Office of the Coordinator General the following briefings were given. All issues raised at these briefings were documented with a view to ensuring that the issues are addressed as part of the environmental impact assessment process.

Table 9: Table of Stakeholder Engagement

Person/Group	Type of Briefing	Place & Date	Issues Raised
Mayor Mike Brunker, Bowen Shire Council Deanne Kelly, Local Member Mark Gaudry, Councillor David Nebauer, Bowen's Economic Development Manager Les Cox, Burdekin Electorate's Media Liaison Officer. Matthew Magin, NQBP Dr Paul Joice, Queensland Nationals candidate for Whitsunday	Introduction & Briefing on Project	05 Jul 06	Industrial park at Abbott Point Environmental Policy
Indigenous representatives Joe Henaway James Gaston, Chairman, Gudjuda Reference Group Aboriginal Corporation	Introduction & Briefing on Project	06 Jul 06	Sustainable benefits Job Training and Subsequent jobs Community development
Strategic Advisory Committee, Townsville Enterprise Ltd Representatives, Chamber of Commerce	Briefing on Project	11 Aug 08	Emission Trading Scheme (ETS) Feasibility Study(FS) Concerns over land acquisition processes
Mayor Lyn Mclaughlin, Burdekin Shire Council Ayr and Home Hill Chamber of Commerce	Briefing on Project	11 Aug 08	Federal & States govt approach Rail Link from Moranbah to Abbot

Table 9: Table of Stakeholder Engagement			
Person/Group	**Type of Briefing**	**Place & Date**	**Issues Raised**
			Point
Mayor Brunker and Whitsunday Council	Briefing on Project	11 Aug 08	
Mackay Area Industry Network (MAIN) Chamber of Commerce	Briefing on Project	11 Aug 08	
Matthew Magin, NQBP	Briefing on current Project status	22 Jun 11	Interest by Meijin Energy EOI T4-T7 timing Coal wagon efficiencies
Keith Davies (CoG) Public Forum at Clermont	Community consultation and EWLP briefing of single Corridor	29 Jun 11	Concerns of multiplicity of rail corridors planned Concerns over land acquisition processes
Kate Weir/Peter Hughes, CoG APSDA Planning Group	Presentation on the Project proposal and impacts within APSDA	01 Jul 11	Impact of rail loops on APSDA Land parcels and location – planning perspective QR duplication of T1 NG rail entry, Rail entry into APSDA and stockpile areas T4-T7 Lack of rail access to multi-cargo berths
Bradley Chandler, Department of Transport	Briefing on Project status and land acquisition issues, corridor sharing with QRN	19 Jul 11	Current lease arrangements on QRN corridor, New corridor arrangement procedures
Mayor Marshall and Isaac Council	Updated briefing on the Project including outline of proposed route for our single Corridor open access multi user solution	20 Jul 11	
Mayor Brunker and	Updated briefing on the Project including outline of proposed route for	02 Aug 11	Timing of Development

Table 9: Table of Stakeholder Engagement			
Person/Group	**Type of Briefing**	**Place & Date**	**Issues Raised**
Whitsunday Council	our single Corridor open access multi user solution		Application and EIS submission
Business Council, Bowen	Updated briefing on the Project including outline of proposed route for our single Corridor open access multi user solution	02 Aug 11	
Meeting with Mining companies	Overview of the Project including outline of proposed route for our single Corridor open access multi user solution	Qtr 4 CY 2011	Timing for coal delivery Proposal for Collaboration CoG on corridor Miners consortium
David Stolz, Office of Coordinator General	Overview of the Project including outline of proposed route for our single Corridor open access multi user solution	05 Sep 11	
NQBP Brad Fish	General Cargo Wharf discussion Timelines for port development	21 Sep 11	
Bill Schoch - Waratah	Infrastructure financing – EWLP – ATrade Use of EWLP MUIC	18 Nov 11	Time frames
Yogendra Sharma - Adani	Use of EWLP MUIC	15 Nov 11	Time frames Black soil
Keith Davies/Phil Dash, CoG office	Project update and Project Financing Strategies	15 Nov 11	Single Corridor Project Financing Customers
Bowen Business Information Forum	Overview of EWLP and the Project including outline of proposed route for our single Corridor open access multi user solution	16 & 17 Nov 11	

10.2 Intentions for Advisory Agency Briefings

After declaration of the Project, it is intended to provide briefings to State and Local Government Agencies in Brisbane and in the Regions.

The purpose of the briefings is to explain the Project and clarify any questions the Agency representatives may have.

10.3 Intentions for Indigenous Community Consultation

The representative Land Councils will be contacted to determine the most appropriate practices and procedures to consult with traditional owners and native title claimants are followed.

10.4 Intentions for Community Consultation

The Proponent has worked with State and Local Government Agencies to identify the peak local, industry, environmental groups and other stakeholders who will be central to an effective Consultation Strategy. The Consultation Strategy and program will be in accordance with the Social Impact Assessment Guidelines issued by the Office of the Coordinator General.

See: http://www.deedi.qld.gov.au/cg/resources/guideline/simp-guideline.pdf

and http://www.qld.gov.au/web/community-engagement/guides-factsheets/

11. References and Data Sources

Communicating the Imperative for Action: A report to the Council of Australian Governments. June 2011

http://www.infrastructureaustralia.gov.au/2011_coag/

Queensland Government, Community Engagement Guidelines

http://www.qld.gov.au/web/community-engagement/guides-factsheets/

Commonwealth Government, Administrative Arrangement Order

http://www.dpmc.gov.au/parliamentary/index.cfm

Environmental Protection Agency, 2008, Guidelines for Preparing a Climate change Impact Statement (CCIS)

Queensland Government, Guidelines for the Preparation of an Initial Advice Statement

http://www.deedi.qld.gov.au/cg/resources/guideline/guideline-initial-advice-statement.pdf

Queensland Government, Guidelines for the Preparation of Terms of Reference

http://www.deedi.qld.gov.au/cg/terms-of-reference-eis.html

Queensland Government, Guidelines for the Preparation of Social Impact Assessments

http://www.deedi.qld.gov.au/cg/resources/guideline/simp-guideline.pdf

Queensland Resources Council, Mineral and Energy Resources Sector in Queensland: Economic Impact Study

http://www.queenslandeconomy.com.au/economic-report

East West Line Parks Pty Ltd, Pre-Feasibility Study Report, October 2008

Queensland Government Administrative Arrangement Order

http://www.premiers.qld.gov.au/publications/categories/policies-and-codes/admin-arrange-order.aspx

Toward Q2: Tomorrow's Queensland

http://www.towardq2.qld.gov.au/tomorrow/strong-economy.aspx

12. Glossary, Acronyms and Abbreviations

BFS	Bankable Feasibility Study
CCIS	Climate Change Impact Statement
CEMP	Construction Environment Management Plan
CHMP	Cultural Heritage Management Plan
DERM	Department of Environment and Resource Management
DIDO	Drive in – Drive out
EIS	Environmental Impact Study
EMP	Environmental Management Plan
EMS	Environmental Management System
EP Act	Environmental Protection Act 1994 (Qld)
EPBC Act	Environmental Protection Biodiversity Act 1999 (C'th)
ERA	Environmentally Relevant Activity
EWLP	East West Line Parks Limited
FID	Final Investment Decision
FIFO	Fly in – Fly out
GAB	Great Artesian Basin
GHGe	Greenhouse Gas equivalents
GIC	Galilee Infrastructure Corridor
IAS	Initial Advice Statement
IDAS	Integrated Development Assessment System
ILUA	Indigenous Land Use Agreement
MNES	Matters of National Environmental Significance
NC Act	Nature Conservation Act 1992 (Qld)
PIFU	Planning Information and Forecasting Unit, OESR
OEMP	Operational Environmental Management Plan
OESR	Office of Economic and Statistical Research
QIP	Queensland Infrastructure Plan 2011
QRN	QR National Limited
SDA	State Development Area
SDPWO Act	State Development and Public Works Organisation Act 1971 (Qld)
SLA	Statistical Local Area
SP Act	Sustainable Planning Act 2010 (Qld)
SRTM	Shuttle Radar Terrain Mapping

TCS	Train Control System
TO	Traditional Owners
TOR	Terms of Reference
VM Act	Vegetation Management Act 1999 (Qld)
WHSP	Workplace Health and Safety Plan