EIS: Gladstone Steel Plant Project

(Gazetted as the Gladstone Steel Making Facility)

Executive Summary

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ES. Executive Summary

ES.1. Preface

Boulder Steel Limited (Boulder) is one step closer to realising the opportunity of introducing a new industry to Queensland. The Gladstone Steel Plant Project (gazetted as the Gladstone Steel Making Facility, and hereafter referred to as the Project or the GSPP) would see the staged development of a five million tonne per annum (5 Mtpa) integrated steel plant located within the Queensland Government's dedicated industrial land, the Gladstone State Development Area (GSDA).

Should all necessary approvals be granted for the Project, Boulder would commit substantial capital investment in the Gladstone Region, which would generate considerable direct employment benefits, significant third-party business opportunities, and increase government and export revenues. Briefly, the estimated capital cost to reach full operating capacity is $4.4 billion, and the Project would require a peak construction workforce of 2,000 persons, and a long-term operational workforce of approximately 1,800 persons.

From the inception of the Project, Boulder has been committed to delivering the GSPP in accordance with the principle of sustainable development. To this end, we are looking to:

- Value-add to Australia's natural resources by utilising its coal, iron ore and limestone to produce at Gladstone the finished product of high grade steel;
- Develop a closed loop system for the integrated steel plant whereby wastes from the steel making process become inputs for other industries. This will include the capture of waste heat to generate electricity via a third-party co-generation plant and the recycling of granulated slag from the steel plant to the cement and construction industries;
- Locate all of the facilities (steel plant, private haul road, material stockpiles and shipping berths) on lands designated and already approved for industrial development;
- Investigate various options for delivery of raw materials to minimise impacts;
- Design the plant and equipment in a manner that uses scrap steel as feed to the plant, thus recycling this waste product; and
- Develop truck trailers that can readily transport a mix of products (iron ore, semi-finished steel product and blast furnace granulated slag) and implement this back loading operation to reduce the number of trips made by haul trucks and therefore reduce fuel usage.

Boulder also recognises that like all developments, there will be some impacts. We engaged one of Queensland's leading environmental consultancies, local firm CQG Consulting (CQG), to project manage our Environmental Impact Statement (EIS). CQG commissioned numerous technical specialists to investigate these impacts and provide us with appropriate management measures to implement during all phases of the Project. Boulder has consulted widely and taken account of the views of stakeholders potentially affected by the proposal and others with a broader interest in the Project's implications.

We are confident that the GSPP can be delivered in a manner that avoids and minimises adverse impacts and maximises economic and social benefits.

David Simpson
Managing Director
Boulder Steel Limited

ES.2. The Proponent

Boulder, the Proponent for the GSPP, is a publicly listed Australian company, with headquarters in North Ryde, New South Wales, Australia. In addition to being listed on the Australian Stock Exchange, Boulder's shares are quoted and traded on the Frankfurt, Berlin / Bremen, Munich and Stuttgart stock exchange.

The Boulder executive have a combined expertise in steel manufacturing and marketing in Australia and internationally, as well as expertise in engineering, construction, economics and international law. Boulder largely draws its experience in the steel manufacturing industry from Euro Forming Services GmbH (EFS) in Bitburg, Germany, and currently holds a 20 percent share in this company. EFS manufactures high quality steel components for the automotive and aerospace industries. Since forming in the year 2000, EFS has experienced exceptional growth and has undertaken several expansions of its steel forming facilities.

Boulder's contact details are as follows:

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ES.3. The Project

The major components and key features of the GSPP are summarised in **Table ES.1** and described in the following text.

Table ES.1: Project overview

Feature	Description
Project components and objectives	• Integrated steel plant, processing iron ore, coal, anthracite and limestone into high quality steel in billet and slab form; • Rail loop, coal dump station and conveyance system for deliveries of bulk coal to the plant site; • Private haul road between the steel plant and Fisherman's Landing (approximately 17 kilometres in length); and • Port facilities including three berths and stockyards at Fisherman's Landing.
Project location	Aldoga Precinct of the GSDA in Central Queensland, with the private haul road located within the GSDA's materials transportation and services corridor.
Plant capacity	2.5 Mtpa initially (Stage 1), ramping up to 5 Mtpa at Stage 2.

Anticipated timing	• Construction phase (2013 / 2014 for 3.5 to 4 years); and
	• Operational phase:
	  ○ Stage 1 commencing in 2016; and
	  ○ Stage 2 (full production) by 2018.

Workforce estimate	• Construction phase - 2,000 people at peak; and • Operational phase - 1,800 (comprising over 1,200 on-site personnel, and over 500 full-time equivalent contractors).
Project capital cost	AUD$2.677 billion for Stage 1, to a sum of $4.441 billion at Stage 2.
Operating hours	• Construction phase: 24 hours per day, seven days per week, with the most significant noise generating activities limited to between 6.30am and 6.30pm Monday to Saturday where possible; and • Operational phase: 24 hours per day, seven days per week.
Total area requiring disturbance	Approximately 850 hectares.

ES.4. Integrated steel plant

The proposed integrated steel plant will be developed on a 591 hectare land holding (395 hectares of this being the steel plant operational area) within the Aldoga Precinct of the GSDA. The GSDA is a 28,000 hectare area that has been set aside under Section 70 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) as a site for industrial development. It is located to the north and north-west of Gladstone, in a location removed from sensitive receptors (see **Figure ES.1**).

Figure ES.2 shows the main components of the steel plant in a simplified flow diagram. The plant will use coal, iron ore, anthracite and limestone, sourced from mines in the Bowen and / or Surat Basin, the Gladstone Region and elsewhere in Australia, to manufacture high quality steel. By using blast furnace and basic oxygen furnace technologies, the plant will first produce iron (from the listed minerals) and then steel (an alloy of iron and carbon). The following plant components will be utilised in this process:

- Coke ovens – used to convert coal into coke for use in the blast furnace;
- Sinter plant – used to convert finer iron ore particles into lump ore for use in the blast furnace;
- Blast furnace – in which lump ore, sinter, lump coke and coal are reduced to molten pig iron;
- Basic oxygen furnace – used to remove impurities from the molten pig iron to improve product quality; and
- Billet and slab casting – the liquid steel is cast into billets or larger slabs, dependent on customer orders.

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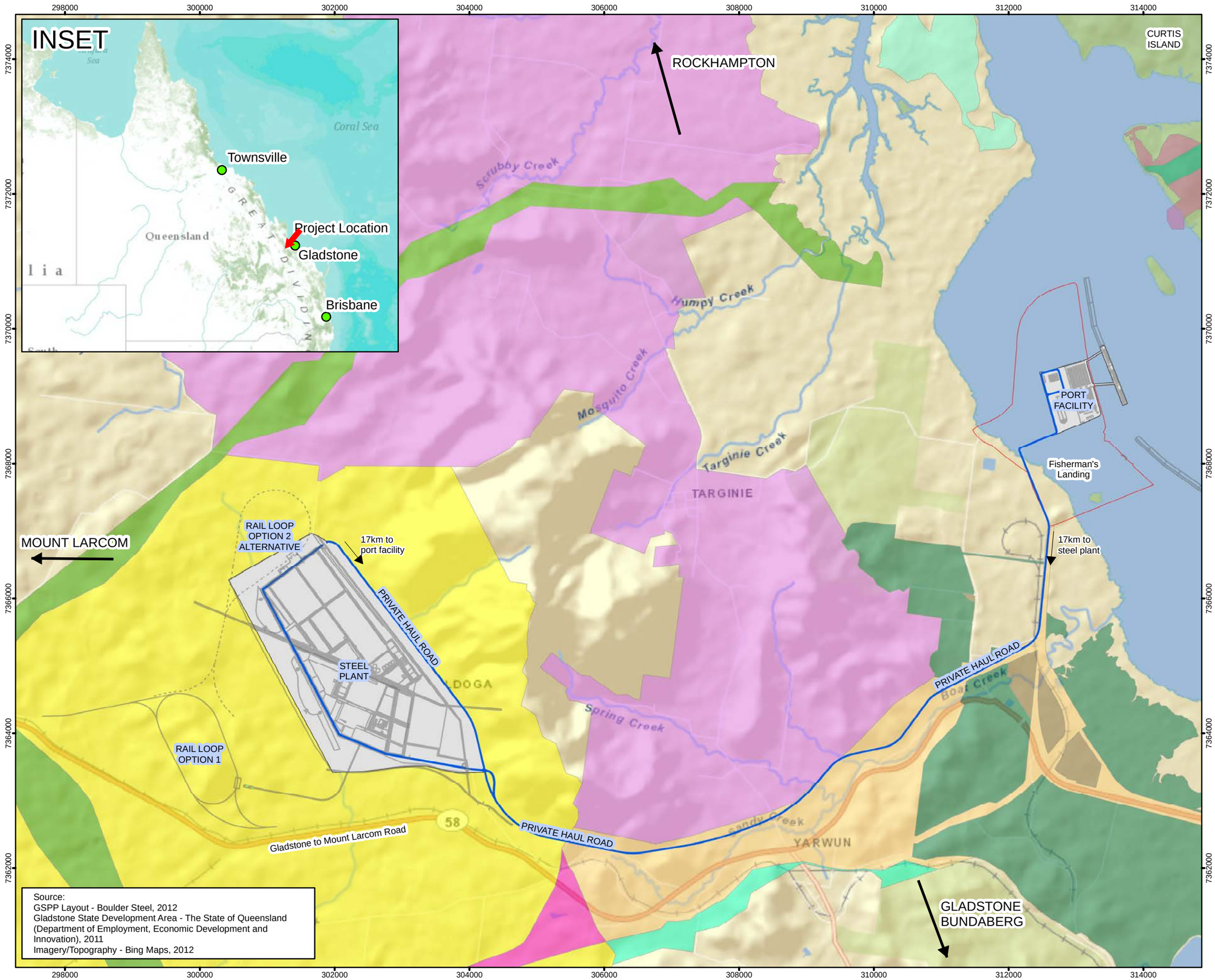

Source:
GSPP Layout - Boulder Steel, 2012
Gladstone State Development Area - The State of Queensland (Department of Employment, Economic Development and Innovation), 2011
Imagery/Topography - Bing Maps, 2012

Legend

- GSPP Layout
- Haul Road
- Fisherman's Landing - Existing Footprint
- GSPP Footprint

GSDA PRECINCT

- Aldoga Precinct
- Corridor Buffer Area Precinct
- Curtis Island Industry Precinct
- Environmental Management Precinct (Kangaroo Island)
- Materials Transport & Services Corridor - Boat Creek
- Materials Transport & Services Corridor - Curtis Island
- Materials Transport & Services Corridor - Northern
- Materials Transport & Services Corridor - Western
- Stuart Oil Shale Reserve Preservation Area
- Targinnie Precinct
- Yarwun Precinct

N

Scale 1:55,000 (A3)

0 400 800 1,600 2,400

Metres

Map Projection: Map Grid of Australia 1994 Zone 56

Figure ES.1: Gladstone Steel Plant Project - Project Location

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Figure BS001 Revision C

5 December 2012

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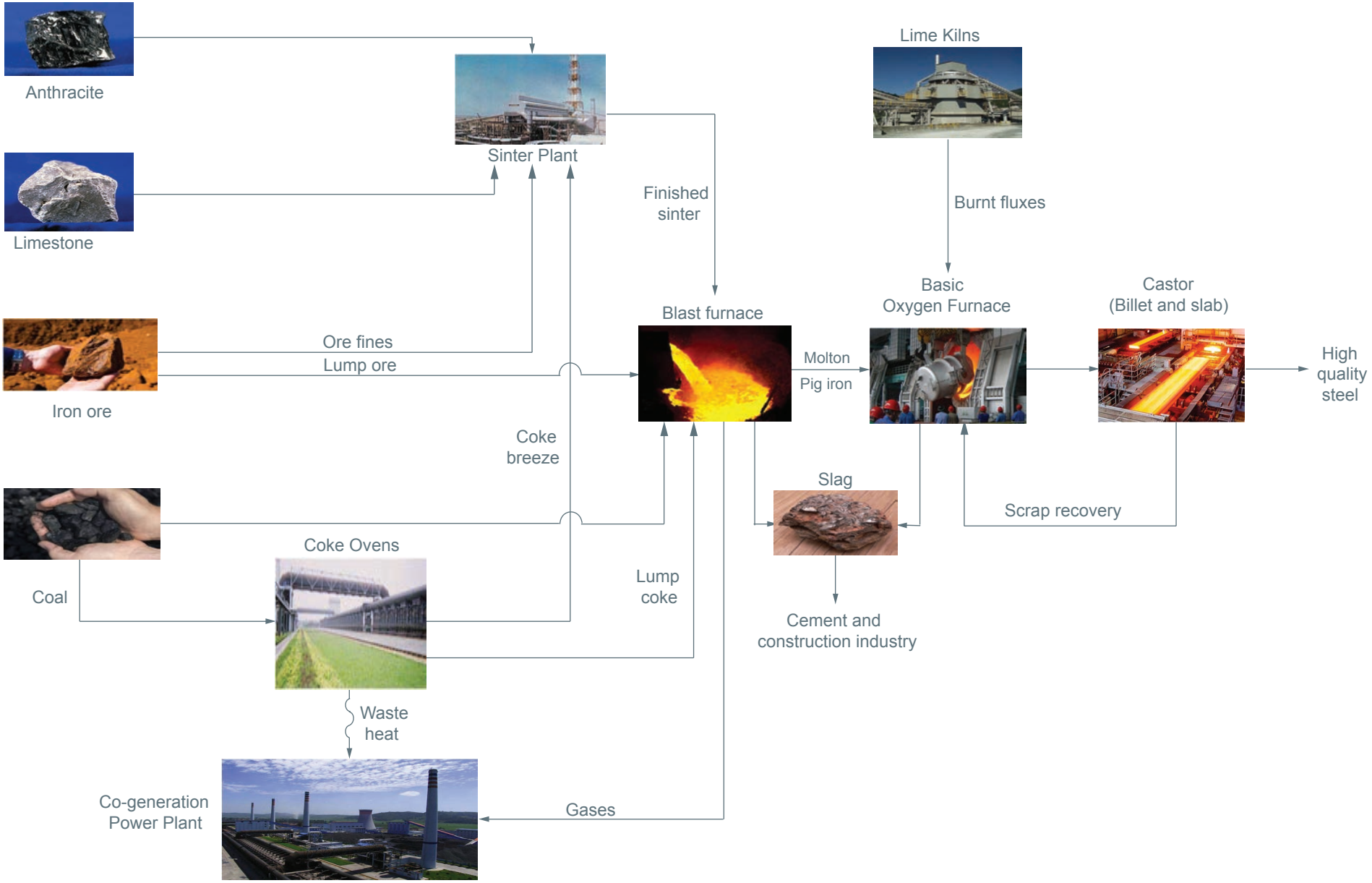

Figure ES.2 Simplified Process Flow Sheet

It is Boulder's preference that the waste heat from the coke ovens be captured and utilised for power generation in a co-generation plant to be built alongside the steel plant. The co-generation plant would be owned and operated by a third-party, and would provide the GSPP electricity demand as well as generating surplus electricity for sale back to the Queensland power grid.

ES.5. Supporting infrastructure

ES.5.1. Rail loop facilities

A rail loop will be constructed adjacent to the steel plant, linking to the existing QR National rail network. Through this, bulk coal will be delivered directly to the plant site from mines in the Bowen and / or Surat Basin. It is anticipated that one train delivery will be required per day. A coal dump station and conveyance system will also be constructed to allow for the unloading of trains and transportation of coal to the raw materials stockyards at the steel plant site. These facilities could also be used for the delivery of limestone, if approved by QR National, following completion of the Moura Link.

There are currently two proposed options being considered for the location of the rail loop. The final alignment will be determined during the detailed design phase.

ES.5.2. Private haul road

A 17 kilometre sealed private haul road would be constructed between the steel plant and Fisherman's Landing, within the designated materials transport and services corridor of the GSDA. The private haul road would be used exclusively for heavy vehicles, avoiding significant impacts to the public road system. The purpose of the private haul road will be to transport iron ore and anthracite from the port to the steel plant, and the finished steel product from the steel plant to the port. The private haul road will also be used during the construction phase of the Project to transport larger steelmaking plant components to the steel plant site.

When the plant is operating at full capacity, it is expected that up to 200 truck movements per day will be made along the private haul road.

ES.5.3. Port facilities

To facilitate the import of materials, and export of finished product, Boulder proposes to build three berths at the existing Gladstone Ports Corporations (GPC's) Fisherman's Landing port facility. In addition, ore stockyards, product consolidation yards, container storage areas, amenities blocks, equipment maintenance workshops and a refuelling station will be developed on reclaimed land immediately behind the berths (see **Figure ES.3**).

Construction and operational activities at Fisherman's Landing, including the reclamation area, has been previously assessed and approved as part of the Fisherman's Landing development EIS.

ES.6. Project rationale and alternatives

Due primarily to the continued economic growth in developing Asian countries, the world steel consumption rate is forecast to increase at an average annual rate of six percent, reaching 1.9 billion tonnes by 2016. Boulder seeks to invest in this opportunity, and have established a potential customer base in Thailand, Taiwan, Indonesia, Vietnam and South Korea.

Boulder seeks to gain an economic advantage by locating their steel plant in the Gladstone Region. This locality is adjacent to the Bowen and Surat Basins, from where the plant will source metallurgical coal, and is also close to sources of limestone (available in the Gladstone / Mount Larcom area). It will be near Gladstone's expanding deep water port, allowing bulk import of other required commodities such as iron ore, and the ability to export the finished steel product to markets in Asia.

Economically, Australia stands to gain from this project through value-adding to natural resources. The key resources required for steel production (including coal, iron ore and limestone) will be sourced from mines in Australia. The Project will provide an opportunity for downstream processing of these resources in an environmentally responsible way, and with the associated employment opportunities and revenue benefits for Queensland and Australia.

Source:
General Imagery - Bing Maps, 2012
Fisherman's Landing Imagery - NearMap, 2012
GSPP Port Facility - Boulder Steel, 2012

Legend

- Fisherman's Landing - Existing Footprint
- Haul Road
- GSPP Port Facilities
- GSPP Layout
- Third-Party Provisions
- Materials Offloading Facility (MOF) Area
- Common User Facility

N

Scale 1:14,500 (A3)

0 100 200 400 600

Metres

Map Projection: Map Grid of Australia 1994 Zone 56

Figure ES.3: Gladstone Steel Plant Project - Port Facility Conceptual Layout

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Figure BS001 Revision C
5 December 2012

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In determining the design and requisites for the GSPP, consideration was given to technological and locality alternatives. There are three major technologies currently available for steel production, and when assessed, the integrated steel-making technology was selected based on economic return and the quality of the finished product. Alternate locations were also considered, including the Hunter Valley Region in New South Wales and the Ipswich area of south-west Brisbane. The Gladstone location was selected based on the compatibility of this industry with the intent and objectives of the GSDA, the better access to raw materials and export facilities, and the community's appreciation of industrial development in the Gladstone Region, particularly within the GSDA.

ES.7. EIS process

The environmental impact assessment process is defined by Queensland legislation to achieve the following outcomes:

- Ensuring the proponents assume primary responsibility for protection of any environmental values that may be affected by their proposals;
- Addressing environmental management through the life of proposals;
- Forming a basis for statutory decisions on whether a proposal meets ecologically sustainable development principles, and if so, relevant environmental management and monitoring conditions; and
- Incorporating community and stakeholder views in to the assessment and decision making processes.

Table ES.2 summarises the assessment processes that have been conducted to date.

Table ES.2: Assessment processes conducted to date

Process	Date	Outcome
Lodgement of Initial Advice Statement (IAS) with the Office of the Coordinator-General (OCG).	13 Nov 2008	The Project was declared 'significant' requiring the preparation of an EIS under Part 4 of the SDPWO Act (Qld).
Referral to the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) under the *Environment Protection and Biodiversity Conservation 1999* (EPBC Act) (Commonwealth).	6 Mar 2009	The steel plant site was deemed by SEWPaC to be a non-controlled action (decision dated 23 June 2009).
A draft Terms of Reference (ToR) for an EIS was prepared and made available for public comment.	29 Aug 2009 to 12 Oct 2009	OCG reviewed submissions and released final ToR on 23 November 2009.
EIS prepared under the provisions of the SDPWO Act and final ToR.	July 2009 to Nov 2012	EIS displayed for public comment January 2013.

An integrated multi-disciplinary approach has been adopted in the planning and development of the Project, and in preparation of the GSPP EIS. This process included:

- A thorough program of stakeholder engagement, designed to identify and address issues of concern to project stakeholders. This program commenced in July 2009 and involved relevant Local and State Government bodies, directly and indirectly affected landholders, industry and community groups. A range of consultation mechanisms were utilised with key stakeholders and responsible parties including face-to-face meetings, project newsletters and community forums; and
- Engagement of specialists to ensure that environmental, cultural and social impacts were identified and minimised wherever possible. Where impacts were identified, and unavoidable, management strategies and measures were determined and will be implemented to ensure the residual impacts resulting from the construction and operation of the GSPP are reduced to acceptable levels and within regulatory limits. The EIS study team is listed in **Table ES.3**.

Table ES.3: GSPP EIS study team

Component	Consultant
EIS Project Management, government liaison, stakeholder engagement, contaminated sites, water resources, environmental management framework, field surveys, Traditional Owner liaison	CQG Consulting
EIS writing, hazard and risk assessment, Social Impact Management Plan (SIMP)	Gamut Consulting
Stakeholder engagement, EIS presentation	Cooper MacKenzie Marketing and Versestyle
Visual amenity	Chenoweth Environmental Planning and Landscape Architecture, now Cardno Chenoweth
Terrestrial ecology	Ecologica Consulting
Aquatic ecology	frc environmental
Air quality	Katestone Environmental Pty Ltd
Greenhouse gas emissions	Lycopodium Process Industries Pty Ltd
Noise and vibration	Savery and Associates Pty Ltd
Road transport	GTA Consultants
Shipping	Halcrow
Cultural heritage	Archaeo / Converge Group
Economics	CQUniversity

ES.8. Key findings

ES.8.1. Land

The Aldoga Precinct of the GSDA has reasonably flat terrain with some minor ridges, becoming steeper in the vicinity of Mount Larcom. The proposed steel plant site is located within this precinct at the western foot of Mount Larcom and is classified as low terrain, dominated by flat slopes of less than two percent.

The sites proposed for the rail loop and the private haul road are considered medium and low terrain respectively, with varying slopes ranging up to seven percent (see **Photograph ES.1**).

Photograph ES.1: Aerial of project site with Mount Larcom in background

A land suitability and soil assessment of the proposed steel plant area found that none of the land is classified as Class A Crop land (i.e. land suitable for current and potential crops). The majority of the 395 hectares of the operational plant site that will be impacted is considered Class B (i.e. land that is marginal for current and potential crops due to severe limitations such as poor soil depth and structure). The proposed rail loop alternatives are situated on land that is generally considered to be Class B, however, relatively small land parcels in the locality could be considered to be Class A. Soils within the private haul road alignment are considered to be predominately Class B to D. As the linear alignment would traverse an established transport corridor and no significant areas of agricultural land are to be affected, soils within the corridor are not expected to impact upon agriculture.

The bulk of the Project would be constructed in areas not prone to acid sulfate soils (ASS). However, such soils may be encountered during the development of the berths and should development be required for a small section of the private haul road located along the coastal floodplain (although it is noted the current concept is to link in with the existing multi-user haul road in this locality). These soils, if encountered, will be readily managed through the implementation of an ASS management plan.

Potential impacts to land from the GSPP development will largely be related to ground disturbance; primarily erosion and the resulting sedimentation. Mitigation measures to manage this impact will include avoiding erosion prone areas where possible, minimising the area to be disturbed, diverting clean stormwater around areas of disturbance and the installation of sediment control measures to control rainfall that lands on the disturbed areas. Topsoil will be stripped and stockpiled to be respread over revegetation areas to stabilise exposed areas outside those areas proposed to be sealed. These measures will be of particular importance where construction activities occur adjacent to Larcom Creek and sections where the private haul road intersects the ephemeral drainage lines that feed Sandy / Boat Creek.

ES.8.2. Nature conservation

The proposed GSPP footprint is largely located within the Brigalow Belt Bioregion and within the Mount Morgan Ranges sub-region. The private haul road will intersect the South East Queensland Bioregion and the Burnett-Curtis Hills and Ranges sub-region.

The Project site is a combination of weed infested grasslands, regrowth vegetation and remnant vegetation (some of which was cleared about 30 years ago but has regrown to the point of now being categorised and mapped as remnant vegetation). The regrowth and remnant vegetation is dominated by mixed eucalypt

woodlands, with remnant vegetation comprising several Regional Ecosystems (RE) as described by the Department of Environment and Heritage Protection (DEHP) vegetation mapping databases.

No nationally threatened ecological communities would be impacted by the GSPP.

Boulder is looking to secure via ownership, lease or easement agreements, the land required to safely construct and operate the GSPP. This would require the disturbance of approximately 850 hectares. Of this area, 215 hectares (or 29 percent) is remnant vegetation, 203 hectares (or 24 percent) is regrowth vegetation and the remaining 432 hectares (or 47 percent) supports weed infested grasslands (dominated by the giant rats-tail grass, *Sporobolus* species). Of the remnant vegetation, less than one hectare (or 0.004 percent) is classified as an 'Endangered' RE, 56 hectares (or 26 percent) as 'Of concern' and 158 hectares (or 73.996 percent) as 'Not of concern'.

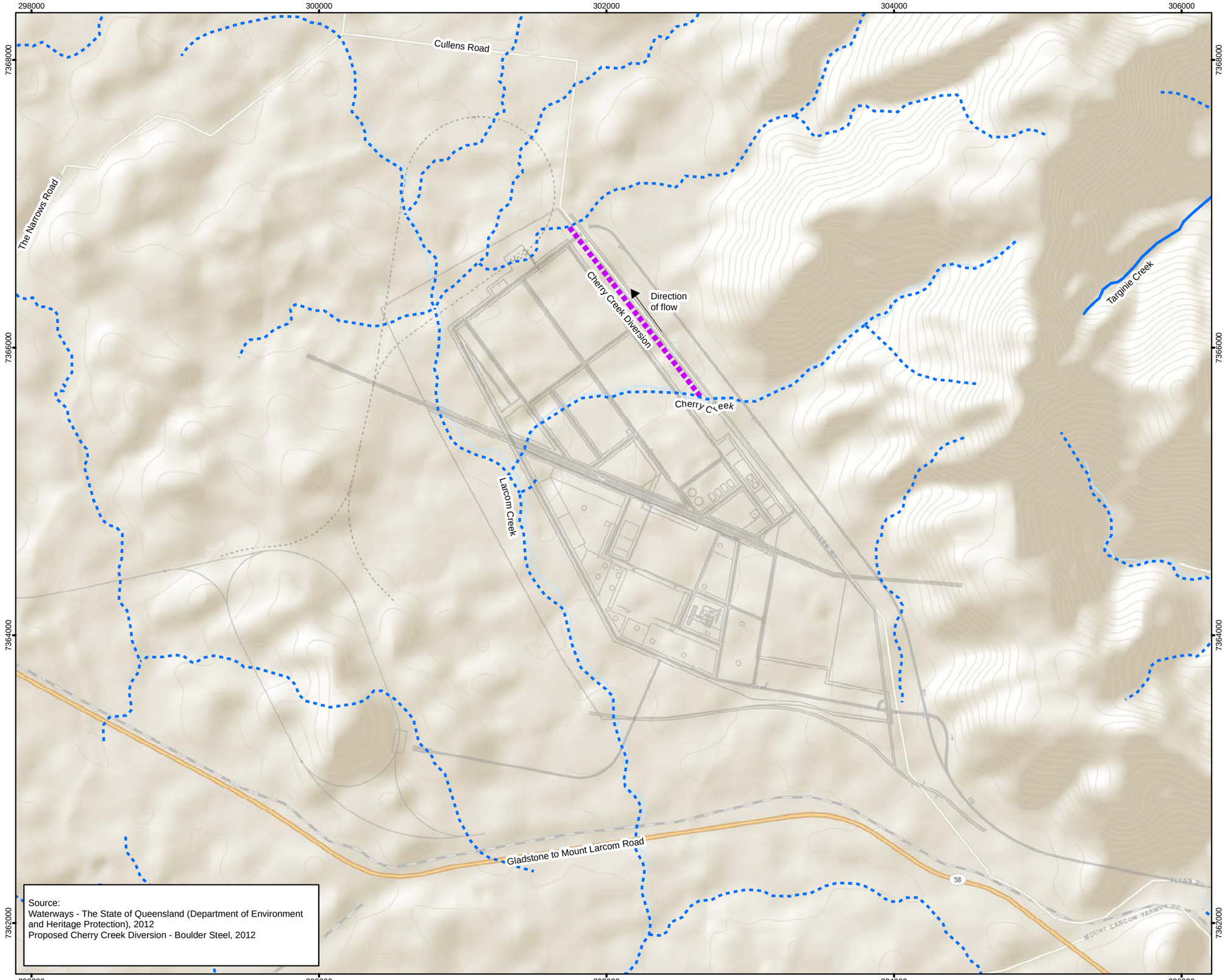
Desktop assessments and field surveys identified 235 flora species and 486 fauna species that may exist within the wider project area. Of these, four plant species, 40 terrestrial fauna and 12 marine fauna species are afforded additional protection under listings of the Queensland *Nature Conservation Act* (NC Act) and / or the EPBC Act. Individuals of these species (e.g. a single *Cycas megacarpa* and potentially the Tusked Frog) may be affected, but no significant impact is predicted on local populations of any listed species.

The EIS lists numerous measures to avoid and reduce the impacts on nature conservation, these include the relocation of the *Cycas megacarpa*, to undertake pre-clearing surveys in the areas of the Endangered REs with the aim of refining the alignment of the private haul road in these areas to avoid these communities; to appoint a licensed and experienced fauna spotter / catcher to identify active roost and / or nests within or immediately adjacent to clearance areas and relocate species as necessary; and to implement controlled exclusions zones during construction of the berth facilities to mitigate impacts to marine mammals.

ES.8.3. Water resources

The proposed GSPP is located within the Calliope River Basin. The majority of the GSPP site is located within the Larcom Creek sub-catchment, an area of over 250 square kilometres within the Calliope River Basin. The plant site drains in a south-westerly direction into Larcom Creek, which in turn discharges into Calliope River, and finally enters the Coral Sea just north of Gladstone. Larcom Creek is adjacent to the proposed steel plant site and will not be directly impacted and planned rehabilitation along this creek as part of the GSPP would enhance its ecological value.

Cherry Creek is a small ephemeral drainage path that runs through the proposed steel plant site and into Larcom Creek. This creek will be diverted around the steel plant in the very early stages of the construction activities to direct clean stormwater around the disturbance site and to maintain natural flows into Larcom Creek (see **Figure ES.4**).



Legend

- GSPP Layout
- Non-ephemeral water course
- Ephemeral water courses
- Proposed Cherry Creek Diversion

N

Scale 1:26,000 (A3)

0 200 400 800 1,200

Meters

Map Projection: Map Grid of Australia 1994 Zone 56

Figure ES.4: Gladstone Steel Plant Project - Cherry Creek Diversion Plan

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5 December 2012

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The proposed private haul road will run parallel to Sandy / Boat Creek for much of its 17 kilometre length, crossing numerous tributaries of Sandy Creek between the plant site and Fisherman's Landing.

The proposed steel plant site is located in a catchment groundwater discharge zone, in which upward groundwater pressure may result in the discharge of groundwater at the surface (i.e. artesian groundwater). After large rainfall events, the unconfined aquifer would become saturated and overland flow would commence, transporting surface water and groundwater into Larcom Creek and downstream of the catchment. Boulder does not intend to use any groundwater for the proposed construction or operation activities.

During construction of the GSPP, drainage works, first flush and longer-term sediment containment ponds and stormwater quality improvement devices will be installed to mitigate the potential impacts associated with stormwater runoff from disturbed areas. Engineered catchment areas will also be developed at the steel plant site to enable the full collection and containment of all runoff from large rainfall events (i.e. for a 100 year Annual Recurrence Interval [ARI] 12 hour rainfall event).

Boulder will also develop and implement a groundwater and surface water monitoring program to assess the performance of installed measures and modify these measures if required.

ES.8.4. Air quality and greenhouse gases

During the construction phase of the GSPP, dust that may be generated by site clearance, civil works activities or from vehicle movements will be managed through the regular watering of roads and stockpiles, limiting vehicle speeds, and restricting construction activities during periods of excessively high wind.

Detailed air quality modelling was undertaken to predict the levels of combustion gases that would be emitted during the iron and steel making process (i.e. nitrogen dioxide, sulphur dioxide, carbon monoxide, particulate matter, volatile organic compounds and polycyclic aromatic hydrocarbons). Emission levels were then compared to standards defined in the *Environmental Protection (Air) Policy* 2008. The assessment concluded that at its full operational capacity (5 Mtpa of steel production), there would be no exceedance of any gas at any of the nearest identified sensitive receptors. The modelling showed that particulate matter (i.e. $PM_{2.5}$ and possibly PM_{10}) generated from materials handling would be above applicable levels at a single residence located within the GSDA. Either operational controls or vacating of this residence will be applied to ensure applicable levels are met.

To reduce air emissions further, Boulder is seeking to secure the collection of waste heat and off-gases from the plant's furnaces and to direct these into a third-party co-generation plant that will produce electricity for use in the plant, with excess electricity to be sold to the Queensland power grid. Other mitigation measures will include the fitting of negative pressure pulse type dust collection systems (or similar systems) to appropriate sections of the sinter plant and coke ovens.

Boulder will also develop an Air Quality Management Plan with proactive and reactive measures to be implemented during the construction and operational phases of the Project. This plan will include monitoring programs to measure the performance of the applied measures.

The greenhouse gas emissions (Scope 1) assessment estimated that the plant would produce in the order of 10.4 Mtpa of carbon dioxide equivalents (CO_2-e) when operating at full production capacity. With the capture of waste heat and off-gases in a third-party co-generation plant, this figure reduces to 9.65 Mtpa. Based on these estimates, the facility will be required to report under the National Greenhouse Emissions Reporting Scheme and engage in carbon pricing (taxation and trading).

ES.8.5. Noise and vibration

Construction activities are scheduled to be undertaken 24 hours a day, seven days a week. Activities that may result in excessive noise at the nearest residential dwellings will be conducted between the hours of 6:30am and 6:30pm on business days and Saturdays (i.e. not on Sundays or public holidays). If noise generating construction activities occur outside of the permitted hours, prior approval will be sought from the local authority and occupants of the potentially affected noise sensitive locations.

The noise and vibration assessment for the GSPP identified noise sensitive receptors located in the vicinity of the proposed plant and along the associated private haul road, and Boulder conducted modelling to determine impacts to these receptors as a result of plant operations and haul truck movements. As the plant will be in operation 24 hours a day, noise limits were modelled against night time criteria as these are the most stringent.

The assessment of noise emissions from the operating steel plant site indicated that adopted noise criteria limits would be achieved at all residential receptors.

Predicted noise emissions along the private haul road identified eight residences near to the proposed private haul road where night time noise criteria would be exceeded. The majority of these residences are within the GSDA (owned by the Queensland Government) and will be vacated prior to development where necessary. One property is identified as outside the GSDA, but owned by an industrial neighbour with no tenant residing at the location, therefore, it is not recognised as a noise sensitive receptor.

Vibration levels generated by the operation equipment are not expected to be significant given the buffer of the GSDA area and no significant vibration activities are expected to be required. Therefore, the relevant vibration criteria would be met at all times.

ES.8.6. Waste

Boulder is committed to the waste hierarchy of avoid, reuse, recycle, energy recovery and disposal if required. A few examples of integrating that philosophy into the GSPP is Boulder's preference to collect waste heat and off-gases from the plant's furnaces and direct these to a third-party co-generation plant for the production of electricity, the recycling of scrap steel for use as feed to the plant, and the recycling of the waste slag from the process into the Australian cement and construction industries.

During the construction phase of the Project, earthworks activities (particularly for the steel plant site and private haul road) will aim to balance the cut and fill material, thus reducing the need to import or export fill material. In addition, cleared vegetation will be mulched and used for site rehabilitation. Any excess mulch material will be made available to local landscaping projects or disposed of at a licensed facility.

A plant water balance system has been designed such that no process wastewater shall be discharged. All process water such as that from coke and iron making, casting and the sinter plant, will be treated on-site and reused in other plant processes such as coke quenching, spray cooling and stockpile dust control.

ES.8.7. Transport

Considerable project-related traffic will be generated in order to successfully construct and operate the GSPP (i.e. peak volumes in the order of 406 heavy vehicle movements per day). To reduce this impact, Boulder has:

- Included in the Project design the construction of a fully-fenced private haul road, bypassing any direct interactions between haul trucks and the general public;
- Planned for grade separation along the private haul road at intersections with public roads (not identified as to be closed) and rail lines, to ensure the safety of the haul truck drivers and the travelling public;
- Agreed to provide dedicated buses, to transport the bulk of the workforce to and from site in order to minimise congestion on public roads during peak transit times;
- Agreed to monitor the condition and capacity of roads and intersections affected by GSPP generated traffic, and to contribute to road infrastructure upgrades as deemed appropriate in collaboration with the Queensland Government;
- Liaised with QR National with the aim of seeking approval to transport limestone via the yet to be constructed Moura Rail Link, thus further reducing the movement of heavy vehicles on the public road network; and
- Committed to there being no haulage of limestone on the Calliope River Road during Yarwun State School bus pick up and drop off times on school operating days, until the time that limestone can be transported to the site via rail.

The transport assessment also analysed shipping movements generated by the import and export of materials via Fisherman's Landing. Total forecast port calls at full project capacity is in the order of 209 per year (approximately four ships per week). This equates to approximately six percent of predicted shipping, when considering forecast shipping figures of major projects, through the Port of Gladstone. The management of the proposed GSPP shipping operations, including risk mitigation, will be achieved through compliance with established procedures and legislative requirements of shipping in local and Australian waters.

ES.8.8. Cultural heritage

The assessment for the GSPP included desktop searches of relevant Indigenous and non-Indigenous cultural heritage databases. No registered sites of cultural heritage significance were identified in the Project area. Following this, two Indigenous archaeological field surveys were undertaken (in 2009 and 2011), which included representatives for the Port Curtis Coral Coast People (PCCC) (refer to **Photograph ES.2**).

Photograph ES.2: Consultants undertaking cultural heritage survey on proposed GSPP site

Consultation engagements were also conducted with Aboriginal groups and community members to source further information and to discuss findings.

A total of 83 artefacts of Indigenous significance were discovered following field surveys in the Project area. Most of these artefacts were found in isolation or in low density scatters.

Nine non-Indigenous cultural heritage sites were located during a separate field survey. These sites comprise of timber posts, fence lines, cattle yards, artefacts possibly associated with a butcher operation, and a timber shed possibly dating back to the 1920s. The majority of these sites will be impacted by project activities, however the sites were assessed as having low heritage significance. A cattle yard and dip located near the preferred rail loop may however have historical importance to the pastoral industry, but this site is planned to be avoided.

Consultation will continue between Boulder and the PCCC in order to ensure that cultural considerations are incorporated into the GSPP. Boulder will have, and comply with, a Cultural Heritage Management Plan (CHMP) with the Traditional Owners and a non-Indigenous management plan for the GSPP. These plans will detail the procedures to be followed for any recovery and relocation of artefacts, and the discovery of any previously unknown heritage sites.

ES.8.9. Social environment

In 2011, Gladstone was the third fastest growing area in Queensland (see **Photograph ES.3**). This growth is expected to continue, due largely to the port expansion and further developments under construction or proposed, with the population in the Gladstone Region predicted to double over the next 20 years.

Photograph ES.3: Aerial shot of central Gladstone

The GSPP will provide considerable direct and flow-on social benefits, largely attributed to the required workforce (a peak of 2,000 people during construction and approximately 1,800 during operations) and the business opportunities generated from the capital investment of $4.4 billion.

Projects of this scale do however carry with them the potential for social impacts. These impacts are associated with an increased strain on social services and infrastructure, and the potential marginalisation of vulnerable groups.

Boulder is aware of the potential for social impacts and is committed to ensuring that the social benefits of the Project far outweigh any adverse effects. To this end, they have developed numerous commitments around social strategies, targets and initiatives. These commitments include the following:

- Employing locally is a key objective for Boulder, and priority will be given to local workers or workers from towns in the vicinity of the Project. The hierarchy of employment to be adopted where possible will be local, then regional, State, national and international. Boulder will recruit the operational workforce, as much as possible, from the local market and is aiming to achieve 40 percent local employment during the construction phase. Boulder does not intend to have fly-in fly-out (FIFO) employees for the operational phases of the Project;
- Boulder's workforce strategy will focus on methods to attract local, under-represented groups to the workforce, such as women returning to the workforce, Indigenous people, and people with a disability. This strategy will serve to maximise local employment on the Project, and will additionally provide opportunities to groups ordinarily disadvantaged by such developments;
- Boulder proposes to develop a steel skills development program that will involve working with training organisations to increase the local skills capacity for employment during the construction and operational phases of the Project;
- Boulder has set a target to employ not less than 25 Indigenous Australians during the operational phase of the GSPP. Boulder will provide training opportunities for Indigenous Australians by working with relevant training organisations to identify skills gaps and address them within its steel skills development program;
- Boulder will also identify ways to maximise benefits to local Indigenous businesses through supply chain opportunities, business networking and other support;
- Boulder will develop a Housing Policy in conjunction with relevant agencies and organisations to assist employees and their families to access a range of accommodation alternatives in the Gladstone Region; including temporary facilities, rental homes and the ability to purchase their own properties;

- Boulder will develop a relocation program for new employees moving into the Region and will support other local initiatives such as the resettlement program under the auspices of the Gladstone Multicultural Association Incorporated (a Gladstone Regional Council service);
- Boulder will develop a community support policy designed to provide annual and once-off funding for a range of community, environmental, social, youth and charity programs and events. These will be financed through sponsorship, donation, paid membership or in-kind support;
- Boulder will work with local childcare service providers (public or private) to increase the number of places currently available in the Gladstone Region and will investigate the feasibility of a dedicated child care facility for GSPP staff;
- Boulder will support the Mount Larcom Show Society in the implementation of its facility upgrade program; and
- Boulder will establish and implement a code of conduct that addresses the high standards of behaviour expected of employees and contractors within the workplace and in the general community. Boulder will enforce these requirements through workplace inductions and disciplinary actions if required.

A Draft Social Impact Management Plan (SIMP) has been developed for the GSPP and included as an appendix to the EIS. The plan collates all of the management actions and commitments that Boulder will undertake to ensure social concerns and issues are addressed throughout the Project life. The plan will be finalised in collaboration with the State Government and other stakeholders.

ES.9. Economic benefits

Evidence from past developments in regional areas suggests that new industrial developments provide significant economic benefits to regional areas. New projects increase employment in regional areas through direct and indirect effects on the economy. They attract new workforce and families into the area, helping to build the population base. There are also flow-on effects in the local business sector, particularly in the development of supply chains to service the new industry's needs.

The establishment and operation of the GSPP can be expected to stimulate demand in both the regional and Queensland economy, and is projected to result in the following economic benefits:

- The direct investment in the State of $2.677 billion for Stage 1, to a sum of $4.441 billion at Stage 2;
- Employment for up to 2,000 persons during the construction phase of the Project and 1,800 persons for the operational phase of the Project (comprising approximately 1,278 full-time equivalent employees and 536 full-time equivalent contractors);
- Flow-on economic effects for Gladstone, including the generation of approximately 3,600 full time equivalent positions throughout other sectors of the regional economy;
- Generation of additional export revenue through significant value adding to the current coal and iron ore export products; and
- Flow-on economic effects for Queensland and Australia, whereby during the peak year of construction, the total benefits at a State level are predicted to be $3 billion in output benefits to other industries, $1.4 billion in value added benefits, and $886 million in increases to household incomes. During the operational stage, the total benefits at a State level would be around $5.5 billion in output benefits to other industries, $1.6 billion in value added benefits, and $630 million in increases to household incomes.

ES.10. Hazard and risk

The previous sections addressed the predicted impacts and benefits of the GSPP and provided management measures to reduce the impacts and maximise the benefits. In addition to the impact assessments, Boulder conducted a project-specific hazard and risk assessment to consider unplanned situations and events, and to make a judgement on the likelihood of such occurrences and their potential consequences or outcomes.

Using the recognised *Australian and New Zealand Standard AS/NZS 31000:2099*, risks were identified and evaluated as either: 'high' (i.e. risk is unacceptable and activity should not commence); 'moderate' (i.e. risk is acceptable and controls must be implemented to reduce risk); 'low' (i.e. risk is acceptable and controls should be implemented to reduce risk); or 'negligible' (i.e. risk is acceptable).

The risk assessment resulted in the identification of 129 risk events or situations. Of these, no risk event or situation was deemed to be high; 39 were ranked as moderate; 67 were ranked as low; and 23 were ranked as

negligible. The bulk of the moderate risks could be grouped into potential accidents resulting in human harm. Where possible, the GSPP has been designed to eliminate or reduce such accidents, and will develop safe operating procedures and stringent safety requirements for its workforce.

Management plans developed under the Project's Environmental Management System (EMS) will incorporate the risk assessment findings and will identify potential contingency options for the key risk items. Monitoring programs will also be established to assess the ongoing performance of the Project from a risk management perspective.

ES.11. Management systems and plans

Boulder will develop and implement an EMS and an Environmental Management Plan (EMP) to ensure the management measures and controls detailed in the EIS (and any conditions stipulated in government approvals) are captured and implemented for each phase of the GSPP.

ES.11.1. Environmental Management System

The EMS will be developed in accordance with the *Australian Standard for Environmental Management Systems* (AS/NZS ISO 14001:2004) and would contain the following elements:

- The Boulder Sustainability Policy;
- Plans, procedures and policies to outline statutory requirements and other commitments;
- EMPs for all phases of the Project;
- Standard operational procedures;
- Monitoring programs; and
- Evaluation, auditing and reporting protocols.

ES.11.2. Environmental Management Plan

An overarching Draft EMP has been included as an appendix to the EIS. This draft plan outlines the strategies to be implemented to protect the environmental, social and heritage values of the area that could be affected by the GSPP, throughout its construction, operation and decommissioning phases.

The Draft EMP specifies management responses for the following issues and elements under both the operational and construction phases of the GSPP:

- Climate change;
- Land;
- World Heritage and scenic amenity;
- Terrestrial ecology;
- Aquatic ecology;
- Water resources;
- Air quality and dust;
- Greenhouse gas emissions;
- Noise and vibration;
- Waste;
- Transport;
- Cultural heritage;
- Social environment;
- Chemicals and dangerous goods; and
- Emergency response.

A detailed Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) will further be developed following project approval to minimise and effectively manage the adverse effects of construction and operational activities.

As noted in **Section ES.8.9**, a draft SIMP has also been developed and would be implemented throughout the construction and operational phases of the Project. Also a CHMP (in addition to the general cultural heritage section of the Draft EMP noted above) will be developed in consultation with the PCCC and implemented in order to ensure that cultural considerations are incorporated into the GSPP, as noted in **Section ES.8.8**.

ES.12. Next steps

The next steps in the GSPP assessment are provided in **Table ES.4**.

Table ES.4: Next steps in the assessment phase

Anticipated Timing	Step
January 2013	EIS is placed on public exhibition for six weeks.
February 2013	Public exhibition period of EIS and submissions to government.
March / April 2013	If required, Boulder will prepare a Supplementary EIS to address the feedback raised during the public exhibition of the EIS.
May 2013	The Coordinator-General (CG) prepares a report evaluating the EIS and in consideration of other material pursuant to Section 35 of the SDPWO Act. It is open to the Coordinator-General to either approve the Project with or without conditions, or reject it. Subject to this decision, Boulder would make a final investment decision soon afterwards.

ES.13. How to obtain more information and make your views known to government

Following lodgement of the Initial Advice Statement and request for 'significant project' declaration on 13 November 2008, the CG on 3 April 2009 determined that the proposed development should be assessed at the Environmental Impact Statement (EIS) level and be declared a project of State significance.

Boulder, in conjunction with specialist consultants acting on behalf of Boulder, project managed by CQG, has prepared the EIS in accordance with the CG's terms of reference. The EIS describes the proposal, identifies the likely impacts and proposes management measures to minimise impacts and maximise benefits.

The OCG will publish a notification of the EIS inviting people to make a submission on the proposed project.

The EIS is being placed on public exhibition for six weeks from 12 January 2013 to 25 February 2013. During this time, the public, interested organisations and government agencies may provide comment on the EIS.

Copies of the EIS may be downloaded from www.gladstonesteelproject.com.au

Hard copies of the EIS may be purchased for $50 (including postage and packaging) or a CD-ROM of the document may be obtained free of charge by emailing info@gladstonesteelproject.com.au or telephoning: 1300 971 884.

Hard copies of the EIS documentation are available for examination during business hours at the following locations:

- CQG Consulting Gladstone Office – 15 Lord Street, Gladstone;
- Gladstone Regional Council – 101 Goondoon Street, Gladstone;
- Gladstone Regional Library – 39 Goondoon Street, Gladstone; and
- State Library of Queensland, Cultural Centre, Stanley Place, South Bank, Brisbane.