# Central Eyre Iron Project Environmental Impact Statement



# APPENDIX BB DRAFT – OPERATION ENVIRONMENTAL MANAGEMENT PLAN (OEMP)





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# 1 Introduction

Iron Road proposes to develop the Central Eyre Iron Project (CEIP) on the Eyre Peninsula in South Australia. The CEIP involves the development of a magnetite mining and minerals processing operation near Warramboo, and an infrastructure corridor, port and long term employee village to provide support facilities and connections to the mine. The proposed mine is not within the scope of this document as it is subject to a separate approval process under the *Mining Act 1971*.

The CEIP Infrastructure was declared a 'Major Development' pursuant to Section 46 of the *Development Act 1993*, as the project was considered to be of major environmental, social and/or economic importance to South Australia. The Development Assessment Commission (DAC) determined that the level of assessment for the CEIP Infrastructure was an Environmental Impact Statement (EIS).

The Guidelines for the Preparation of an Environmental Impact Statement for the Central Eyre Iron Project (DAC, 2014) require the EIS to include a draft environmental management plan (EMP) for construction and operational activities for all components of the development.

This draft Operational EMP has been developed in line with the Iron Road Environmental Policy, the environmental assessment and commitments to environmental management made in the EIS, and the Environmental Management System (EMS) being developed by Iron Road. A separate draft construction EMP is also provided in the EIS.

## 1.1 Purpose and Scope

This EMP describes how impacts associated with operation of the infrastructure corridor, port and long term employee village will be managed. If project approval is obtained, this plan will be revised to address approval conditions and any other licences or requirements, as well as any further management measures that may be identified during detailed design, construction and commissioning.

The Operational EMP is a working document that will be updated as the project progresses through review and amendment, to ensure that it reflects current best practice environmental management.

## 1.2 Project Description

The CEIP Infrastructure will operate 24 hours per day for 365 days per year. Table 1-1 provides an overview of the key operational activities for the CEIP Infrastructure.

Table 1-1 Summary of CEIP Infrastructure operational activities

Project Component	Description	
Infrastructure Corridor – Railway Line	<ul> <li>Railway line operations (three trains running two return trips each per day between the port site and the mine site)</li> <li>Operation and maintenance of active level crossing on the Birdseye Highway</li> <li>Maintenance of passive level crossings</li> <li>Track maintenance and breakdown assistance</li> <li>Waste management</li> </ul>	
Infrastructure Corridor – Water Supply	<ul> <li>Operation and maintenance of borefield, pump stations, transfer pipeline and break tank</li> <li>Waste management</li> </ul>	



Project Component	Description	
Port site	<ul> <li>Materials handling activities to unload the iron concentrate from the rail wagons, store it and then load it into vessels for export</li> <li>Maritime activities to manage ship arrivals and departures</li> <li>Maintenance (including port stacker and reclaimer, fender panel and mooring hook change-out and ship loader)</li> <li>Port site security</li> <li>Waste management</li> </ul>	
Long term employee village	<ul> <li>Accommodation (250 units)</li> <li>Administration</li> <li>Dining and kitchen operations</li> <li>Car parking</li> <li>Operation and maintenance of recreational facilities</li> <li>Waste management</li> </ul>	

## 1.3 Environmental Aspects

Iron Road has identified its company wide environmental aspects as part of its EMS, and these have been adopted as the structure for this Operational EMP. These are shown in Table 1-2. Environmental aspects describe the elements of the operation of the CEIP Infrastructure activities, products or services that can interact with the environment.

Most of the company wide environmental aspects apply to both construction and operations, while some aspects are specific to one project phase. This approach has been taken to minimise duplication of information presented in the EMP. Aspects specific to either construction or operations are identified in parentheses in Table 1-2.

Table 1-2 Environmental aspects and objectives

#### **Environmental Aspect Objectives** Land Disturbance (construction) Soil disturbance and Maintain the quality of land and soils so that the ecological and social changes to surface water environment values are protected. flows Manage the hydrological regimes of surface water so that existing and potential Vegetation clearance uses, including ecosystem maintenance, are protected. Potential disturbance of Minimise vegetation clearance required for Iron Road's activities and ensure it is heritage sites offset by long-term actions that deliver a significant environmental benefit. Marine disturbance Maintain representation, diversity, viability and ecological function of flora and fauna at the species, population and community/assemblage level. Prevent unauthorised disturbance to Aboriginal or Non-Aboriginal heritage. Maintain the structure, function, diversity, distribution and viability of coastal and marine communities and habitats at local and regional scales. **Interaction with Natural Resources** Potential introduction and Maintain representation, diversity, viability and ecological function of flora and spread of pest plants and fauna at the species, population and community/assemblage level. animals Maintain the quality and hydrological regimes of groundwater so that Fauna interactions environmental values, both ecological and social, are protected. Maintain the structure, function, diversity, distribution and viability of coastal and Groundwater drawdown marine communities and habitats at local and regional scales. and seepage to groundwater Manage ground, surface and marine water quality so that environmental values, Ship loading and shipping both ecological and social, are protected. activities (operations)



Environmental Aspect	Objectives				
Emissions from Industrial System	Emissions from Industrial Systems				
<ul> <li>Particulate emissions</li> <li>Noise and vibration generation (terrestrial and marine)</li> <li>Greenhouse gas emissions</li> </ul>	<ul> <li>Maintain air quality for the protection of the environment and human health and amenity.</li> <li>Manage noise and vibration generation for the protection of the environment and human health and amenity.</li> <li>Implement reasonable measures to minimise greenhouse gas emissions during development and operation of Iron Road's projects.</li> </ul>				
<b>Generation of Industrial Wastes</b>	and Discharges				
<ul> <li>Stormwater discharge (operations)</li> <li>Accidental release from chemical/hydrocarbon storage</li> <li>Waste generation</li> </ul>	<ul> <li>Manage ground, surface and marine water quality so that environmental values, both ecological and social, are protected.</li> <li>Ensure that human health and safety is not adversely affected.</li> <li>Maintain the quality of land, soils and surface water so that the environment values, both ecological and social, are protected.</li> <li>Minimise any adverse environmental impacts from wastes and to implement reasonable measures to minimise their generation, to maximise their reuse and recycling, and to ensure safe and lawful disposal of all waste.</li> </ul>				
Community Interactions					
<ul> <li>Employment and demand for business services</li> <li>Accommodation of employees/contractors</li> <li>Changes to land access</li> <li>Traffic generation</li> <li>Changes to visual amenity (operational)</li> <li>Fire risk</li> </ul>	<ul> <li>Contribute positively to the social and economic capital of the communities in which Iron Road operates.</li> <li>Maximise opportunities for local and regional businesses in Iron Road's operations.</li> <li>Treat other land users with respect, minimise impacts and compensate fairly where impacts are recognised and are unavoidable.</li> <li>Ensure that human health and safety is not adversely affected.</li> <li>Ensure that impacts to amenity are reduced to as low as reasonably practicable.</li> </ul>				

## 1.4 Implementation

The roles and responsibilities, training and communication mechanisms that underpin implementation of this plan are detailed in the following sections.

## 1.4.1 Responsibilities

All personnel involved in the project including Iron Road employees, contractors and sub-contractors, are required to undertake work in accordance with this EMP. Iron Road's General Manager is responsible for the effective implementation of the EMP through the Environment Manager. Specific roles and responsibilities for the operational phase of the project will be assigned to the senior management team when operational resourcing and management structures are confirmed.

#### 1.4.2 Training

All staff employed by Iron Road and contractors will be required to undertake training prior to any works being carried out. Induction training will address:

- Background to the CEIP Infrastructure project
- Approval conditions, and the role of the EMP
- Legislative requirements of the company and individuals
- Key personnel and roles
- Iron Road EMS
- Environmental issues at the site and relevant management plans and procedures



- Community issues related to the project and relevant management plans and procedures
- Penalties for non-compliance with required plans and procedures
- Hazard and Incident reporting and management procedure
- Emergency response plan.

Job-specific training will also be required. The General Manager is responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

## 1.4.3 Communication and Reporting

Iron Road will continue to implement a community engagement plan. Through this plan, Iron Road will report on the implementation of this Operational EMP, and its compliance with the performance indicators. Iron Road will also prepare an annual compliance report for government stakeholders.

In the event of an incident with the potential to result in serious environmental harm or the identification of site contamination, the notification requirements of the Environment Protection Act 1993 (Section 83 and 83a respectively) will be followed.

Exceptional or specific reporting requirements are addressed under the appropriate environmental aspect headings in this plan.

## 1.4.4 Emergency Response

Iron Road will develop an Emergency Response Plan to ensure effective control and clean-up following emergency situations. Personnel responsible for implementation of the Emergency Response Plan will be provided with appropriate training and resources, and response representatives will be made known to staff on site during inductions.

#### 1.5 Review

The Operational EMP is a dynamic document that is subject to regular review and continual improvement. Review of the Operational EMP will include a process of adaptive management whereby the effectiveness of environmental controls and procedures is continually assessed to ensure best practice environmental management. Such reviews will occur on an ongoing basis, with a formal review schedule to be developed as the project progresses. The following circumstances may also trigger a review of an EMP:

- Change in the scope and design of the project
- Changes in the EMS objectives
- Changes in regulatory standards
- Following environmental incidents, reported non-compliances or in response to complaints
- Subsequent to environmental audits where outcomes warrant improvement.

The process for approval and review of the Construction and Operational EMPs is shown in Figure 1-1.



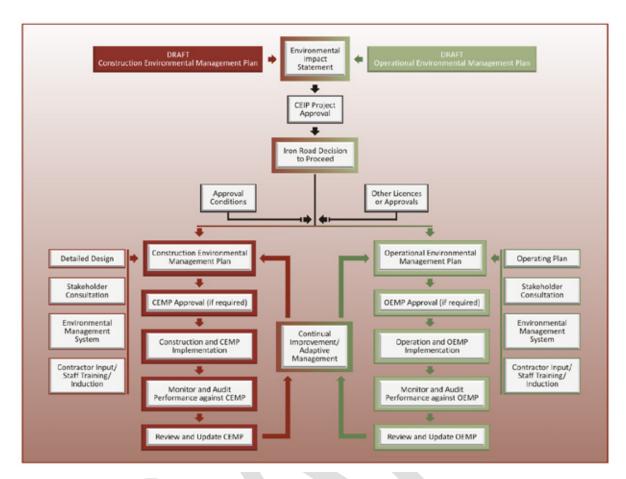


Figure 1-1 Approval and Review of EMPs



## 2 Interaction with Natural Resources

## 2.1 Potential Introduction and Spread of Pest Plants and Animals

Operation of the CEIP Infrastructure has the potential to result in the introduction, increase or spread of pest plants and animals. The establishment or spread of pest plants and animals can have a detrimental impact on the local environment, including loss of habitat and loss of native flora and fauna. An increase in pest animal species can also exacerbate or increase weed spread in an area (e.g., Foxes spread olives, rabbits and goats spread exotic grasses).

## 2.1.1 Legal and Other Guidance

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Native Vegetation Act 1991
- National Parks and Wildlife Act, 1972 (Schedules 7, 8 and 9 of the Act) (NPW Act)
- Natural Resource Management Act, 2004

#### 2.1.2 Values

The implementation of this EMP aims to protect the following environmental values:

- Flora and fauna species with National conservation significance, as listed under the EPBC Act
- Flora and fauna species with State conservation significance, as listed under the NPW Act
- Native vegetation communities and habitat value
- Common native fauna and flora

## 2.1.3 Objectives

Maintain representation, diversity, viability and ecological function of flora and fauna at the species, population and community/assemblage level.

## 2.1.4 Control and Management Actions / Environmental Management Measures

Table 2-1 Management Measures – Potential Introduction and Spread of Pest Plants and Animals

Control and Management Strategies	Identifier
Implementation of best practice weed management strategies, including periodic monitoring of the occurrence and extent of weed species, particularly following trigger events (e.g. seasonally after winter rains or following fire) and within areas adjacent or in close proximity to high value vegetation (e.g. Hambidge WPA). Adaptive management and control measures to be applied as required, particularly for Declared weed Buffel Grass.	PPA_O1
Weed hygiene practices to be followed during operation such as cleaning of plant, equipment and vehicles before and after access to known areas infested with Declared weeds.	PPA_O2
Pest species management for the site during operation to include periodic monitoring of pest flora particularly Declared species) and fauna species populations at the site. Adaptive management and control measures to be applied as required.	PPA_O3
Liaison with EP NRM Board, local councils and community regarding existing vertebrate pest control activities and strategies, and effective cat and dog management (particularly for the influx of workers and families to the region).	PPA_O4
Implementation of waste management practices and controls to be implemented to avoid attraction and exacerbation of existing pest animal problems, and to avoid attracting native fauna to the site.	PPA_O5



## 2.1.5 Performance Indicators and Monitoring

Table 2-2 Performance Indicators and Monitoring – Potential Introduction and Spread of Pest Plants and Animals

Performance Indicator	Monitoring	
<ul> <li>No evidence of increased pest animals in the areas managed by Iron Road</li> <li>No introductions of new environmental or declared weed species to the Project site</li> <li>No spread of existing weed species on the Project site.</li> </ul>	<ul> <li>Follow up surveys and regular monitoring to determine level of pest control required.</li> <li>Follow up surveys and periodic monitoring of weed species distributions to determine weed control effort required (e.g. annually or after trigger events – seasonal rainfall events, bushfire). Adaptive management and control measures to be applied as required.</li> </ul>	

## 2.1.6 Reporting

Results of survey programs to be documented. Any observed increases in weeds or pests to be reported to Environmental Manager.

#### 2.1.7 Non-Conformance

If a new species of weed or increase in abundance of existing weeds are identified on site, commence immediate control actions.

Control of pest animals will be undertaken where monitoring suggests that they are becoming established and threatening the environmental value of the area.

#### 2.2 Fauna Interactions

During operations, impacts to terrestrial fauna may occur due to:

- Operational lighting
- Noise from rail and port machinery operation
- Increased recreational disturbance to habitat from increased population
- · Direct or indirect mortality (general fauna and conservation significant species)

## 2.2.1 Legal and Other Guidance

- Environment Protection and Biodiversity Conservation Act 1999
- National Parks and Wildlife Act, 1972
- Natural Resource Management Act 2004

#### 2.2.2 Values

The implementation of this EMP aims to protect the following environmental values:

- Fauna species with National conservation significance, as listed under the EPBC
- Fauna species with State conservation significance, as listed under the NPW Act
- Common fauna
- Native vegetation and habitat value

## 2.2.3 Objectives

To maintain representation, diversity, viability and ecological function of fauna at the species, population and community level.



## 2.2.4 Control and Management Actions / Environmental Management Measures

Table 2-3 Management Measures –Fauna Interactions

Control and Management Strategies	Identifier
Operational lighting will be kept to a minimum to reduce light spill and potential impacts to fauna behaviour.	FI_01
Light spill will be reduced wherever practicable by managing the spread and direction of lighting, using screens and directional lighting, and avoiding high UV wavelength insect attracting light globes.	FI_02
Lighting pole heights will be as low as possible.	FI_O3
Improvements will be made to available habitat in the local region as part of Native Vegetation SEB offsets (e.g. rehabilitation activities to improve poor to moderate vegetation, establishment and protection of new native vegetation blocks).	FI_O4
Education regarding conservation significant flora and fauna for all staff, their families and contractors via awareness training (e.g. during site inductions, notice board fact sheets).	FI_05
Education regarding potential recreational impacts to regional flora and fauna as a result of increased population through awareness training of staff and families (e.g. during site inductions, notice board fact sheets).	FI_O6
Potential behavioural impacts to native fauna from noise emissions during operation will be managed through implementation of the Noise and Vibration Emission Operational EMP requirements (Section 3.2).	FI_07
Potential impacts to native vegetation from dust deposition during operation will be managed through implementation of the Particulate Emissions Operational EMP requirements (Section 3.1).	FI_08
Appropriate waste hygiene practices and controls to be implemented to avoid attraction and exacerbation of existing pest animal problems, and to avoid attracting native fauna to the site.	PPA_O5

## 2.2.5 Performance Indicators and Monitoring

Table 2-4 Performance Indicators and Monitoring – Fauna Interactions

Performance Indicator			Monitoring		
•	No preventable death or serious injury to native		Review of incident reporting and implementation		
	fauna during operational activities		of adaptive management measures where		
	Respond proactively to fauna interaction issues		required		
	raised by the community		Review of adherence to processes and timeframes		
			in Complaints Management Procedure		

## 2.2.6 Reporting

Any incidents of fauna death or injury that appear to be the direct result of the CEIP Infrastructure operations to be reported to the Environment Manager immediately for investigation.

Identified non-conformances and corrective actions will be recorded as part of the EMS

#### 2.2.7 Non-Conformance

Unusual fauna injury/deaths to be investigated and appropriate corrective action undertaken.



## 2.3 Groundwater Drawdown and Seepage to Groundwater

Groundwater drawdown will result from the abstraction of groundwater from the saline groundwater borefield near Kielpa to supply water for processing iron ore at the mine site. Permanent drainage at the base and perimeter of the excavation to accommodate the rail unloading facility will also result in a radius of influence that will reduce current groundwater level. Groundwater drawdown is not predicted to impact environmental values under normal conditions. This EMP addresses risks associated with groundwater drawdown.

## 2.3.1 Legal and Other Guidance

- Natural Resources Management Act 2004
- Environment Protection Act 1993
- Environment Protection (Water Quality) Policy

#### 2.3.2 Values

The implementation of this EMP aims to protect the following environmental values:

- The potential users of the groundwater (primarily stock wells)
- Agricultural values
- Driver River

## 2.3.3 Objectives

Maintain the quality and hydrological regimes of groundwater so that environmental values, both ecological and social, are protected.

Manage ground, surface and marine water quality so that environmental values, both ecological and social, are protected.

## 2.3.4 Control and Management Actions / Environmental Management Measures

Table 2-5 Management Measures – Groundwater Drawdown and Seepage to Groundwater

Control and Management Strategies	Identifier
Controlled and recorded abstraction of water in accordance with defined water requirements and approved abstraction volumes for the Keilpa borefield.	GD_O1
Visual inspection of the port rail loop excavation to ensure any seeping groundwater is being appropriately managed.	GD_O2
All hazardous materials (oils, fuels and chemicals) will be managed in accordance with relevant regulations and guidelines, including appropriate storage and bunding, material safety data sheets, spill response etc. as detailed in Section 4.2.	GD_O3

## 2.3.5 Performance Indicators and Monitoring

Table 2-6 Performance Indicators and Monitoring – Groundwater Drawdown and Seepage to Groundwater

Pe	rformance Indicator	Monitoring
	No long term change to the potential yield of groundwater resources as a result of construction groundwater use Abstraction of water in accordance with defined water requirements and approved abstraction volumes for the borefield	Monitoring of groundwater levels will be undertaken to assess compliance with predicted drawdown.



## 2.3.6 Reporting

The results of groundwater monitoring will be reported on a regular basis to the Environment Manager and summarised in the Annual Compliance Report.

Any non-conformances and corrective action undertaken will be documented in a monthly report.

#### 2.3.7 Non-Conformance

Non-conformances reported immediately to the Environment Manager and appropriate corrective action undertaken.

## 2.4 Ship Loading and Shipping Activities

A number of interactions with the marine environment may occur during ship loading and shipping activities at the port, including:

- Spillage of iron concentrate during ship loading
- Interaction with marine mammals during shipping operations
- Noise emissions
- Management of biofouling and ballast water
- Spills of contaminants from vessels
- Potential impacts associated with ship loading and shipping activities include:
- Reduced marine water quality
- Injury or death to marine fauna (via ship strike or changes to water quality)
- Altered behaviour of marine fauna including increased population of predator species
- Loss of seagrass
- Introduction and spread of marine pest species

The EMP management strategies for Ship Loading and Shipping Activities specifically address requirements for protection of marine fauna which are protected under the EPBC Act.

#### 2.4.1 Legal and Other Guidance

- Environment Protection and Biodiversity Conservation Act 1999 (Cth)
- Fisheries Management Act 2007 (SA)
- Environment Protection Act 1993 (SA)
- Environment Protection (Water Quality) Policy 2003
- ANZECC Guidelines for Fresh and Marine Water Quality 2000
- Australian Ballast Water Management Requirements 2011
- Australian Quarantine Act 1908
- Harbours and Navigation Act 1993 (SA)
- National Plan for Maritime Environmental Emergencies
- National Marine Oil Spill Contingency Plan 2011

## 2.4.2 Values

The implementation of this EMP aims to protect the following environmental values:

- Marine water quality
- Marine habitat (including seagrass)
- Benthic fauna



- Fish including protected species (predominantly pipefish or seahorse species with the other species of note likely to occur in this region the great white, shortfin make and perbeagle sharks)
- Protected marine megafauna

## 2.4.3 Objectives

Maintain the structure, function, diversity, distribution and viability of coastal and marine communities and habitats at local and regional scales.

Manage ground, surface and marine water quality so that environmental values, both ecological and social, are protected.

## 2.4.4 Control and Management Actions / Environmental Management Measures

Table 2-7 Management Measures – Ship Loading and Shipping Activities

Control and Management Charteries	Indonetifion
Control and Management Strategies	Identifier
<ul> <li>Develop and implement whale management procedures, incorporating:</li> <li>A description of all threats to the megafauna species expected in the area</li> <li>A monitoring plan for megafauna habitat use and behaviour, using appropriate survey techniques for mapping of potential threats to marine megafauna</li> <li>Identification and indication of noise sources and strategies to manage / mitigate noise impacts</li> </ul>	SL_01
Develop and implement waste management measures in accordance with South Australia's Waste Strategy to identify, separate and provide adequate waste disposal for all waste streams.	SL_02
Restrict vessel movements to designated manoeuvring areas. All large vessels will be manoeuvred into place by tugs within the port site.	SL_03
Anchorage areas for large cargo vessels are located in deep water (>20 m) and away from reefs and dense seagrass.	SL_O4
<ul> <li>Develop and implement a Marine Mammal Notice to Mariners, incorporating:</li> <li>An overview of when marine mammals are expected to be present within the study area and key shipping routes.</li> <li>Mandated reductions of speed in shipping lanes during periods of peak marine mammal movements (e.g. whale season, May to November).</li> <li>Mandatory reporting of marine mammals sightings to the appropriate authorities.</li> <li>Encouragement of appropriate caution in ship movements around marine mammals.</li> <li>Response procedures to be implemented should an entangled marine mammal be sighted, or a collision occur.</li> </ul>	SL_05
No discharge of high-risk ballast water as defined by the <i>Australian Ballast Water Management Requirements</i> (DAFF 2011).	SL_06
<ul> <li>Develop and implement procedures to minimise the spillage of oil, including:</li> <li>Ship movements will remain in existing shipping channels and will be restricted from shallow waters or reefed areas</li> <li>Ship movements will avoid traversing the marine park where practicable</li> <li>Where practical, activities with a risk of oil spill will be bunded (offshore and landside)</li> <li>Spill response materials and procedures will be established (offshore and landside)</li> </ul>	SL_07
<ul> <li>Light spill to the marine environment will be minimised through:</li> <li>Orienting lights appropriately and utilising shielding to minimise spillage, particularly on the jetty</li> <li>Use of the minimum amount of lighting required for safety and security purposes.</li> </ul>	SL_08
Management of marine noise so that it does not exceed 150 dB(M) re $1\mu$ Pa2.s at the nearest receptor, or use of an exclusion zone for the relevant activity if this cannot be met.	SL_09



Control and Management Strategies	Identifier
Regular monitoring of the marine study area would be undertaken for the detection of new marine species (including pests), allowing for an early response to the introduction of invasive marine species (IMS) if required. The marine monitoring would be compared back to the baseline marine survey to determine the introduction of any marine species or IMS.	SL_O10
Emergency response measures for fuel, oil or chemical spill will be consistent with the National Marine Oil Spill Contingency Plan 2011.	SL_011
There will be a low frequency of vessel trips (approximately average of 1 per day)	SL_012
All vessels will comply with relevant speed restrictions and exclusion zones at all times.	SL_013
<ol> <li>Response procedures should an entangled marine mammal be sighted, or a collision occur:         <ol> <li>The operator must immediately report the incident to the environmental site manager.</li> <li>The death or injury of the animal must be verbally reported within 24 hours to the appropriate state and Commonwealth authorities.</li> <li>A written incident report detailing the species injured, location where the incident occurred or the animal was found, nature of the injuries, and circumstances surrounding the incident will be provided to the appropriate authorities within five working days.</li> <li>In the event of a boat strike, the report to Department of the Environment will be submitted through the Australian Marine Mammal Centre: https://data.marinemammals.gov.au/report/shipstrike.</li> </ol> </li> </ol>	SL_O14

## 2.4.5 Performance Indicators and Monitoring

Table 2-8 Performance Indicators and Monitoring – Ship Loading and Shipping Activities

Performance Indicator	Monitoring	
<ul> <li>No significant impact to marine fauna due to port operations</li> <li>Maintain existing marine water quality (turbidity, total suspended solids, hydrocarbons)</li> <li>No introduction of marine pests as a result of port operations</li> </ul>	<ul> <li>Monitoring and reporting of whale sightings and ship strike</li> <li>Regular marine water quality monitoring (turbidity, total suspended solids, hydrocarbons)</li> <li>Regular monitoring of the marine study area would be undertaken for the detection of new marine species (including pests), allowing for an early response to the introduction of IMS (if required). The marine monitoring would be compared back to the baseline marine survey to determine the introduction of any marine species or IMS.</li> </ul>	

## 2.4.6 Reporting

Reporting of marine mammal sightings will occur in accordance with the Marine Mammal Notice to Mariners.

Whale strikes and/or the presence of marine pests to be reported to Environmental Manager, port operator and relevant authorities.

Water quality results reported to Environmental Manager and summarised in Annual Compliance Report.

#### 2.4.7 Non-Conformance

Non-conformances reported immediately to the Environment Manager and appropriate corrective action undertaken in conjunction with guidance from the authorities. Review of management procedures undertaken in the event of a whale strike.



# 3 Emissions from Industrial Systems

## 3.1 Particulate Emissions

Transport of the ore concentrate and materials handling activities at the port will generate dust. Excessive dust emissions have the potential to impact health and amenity values. Excessive dust deposition into the marine environment may also impact marine water quality, flora and fauna. Design controls to reduce dust emissions for the CEIP Infrastructure include covering of rail wagons; enclosed rail unloading facility and transfer stations; and maintaining the iron ore concentrate at a relatively high moisture content to limit dust generation potential. This EMP provides a framework for ongoing dust management to ensure that design controls are working effectively and facilitate adaptive management in response to unexpected conditions.

#### 3.1.1 Legal and Other Guidance

- Environment Protection Act 1993
- The National Environment Protection (Ambient Air Quality) Measure (NEPM) (National Environment Protection Council (NEPC) 2003)

#### **3.1.2** Values

The implementation of this EMP aims to protect the following environmental values:

- The good air quality experienced by the sensitive receivers and local communities within the vicinity of the CEIP Infrastructure prior to the development
- Community health and safety (e.g. visibility)

## 3.1.3 Objectives

Maintain air quality for the protection of the environment and human health and amenity.

## 3.1.4 Control and Management Actions / Environmental Management Measures

Table 3-1 Management Measures – Particulate Emissions

Control and Management Strategies	Identifier
Maintenance, inspection and verification requirements for dust control equipment and technology.	PE_O1
Regular maintenance of vehicles and rail wagons.	PE_O2
Monitoring programme to confirm compliance with the air quality criteria for the project as detailed in Table 3-2.	PE_O3
Active operational control informed by the air quality monitoring programme to manage dust emissions within the air quality criteria.	PE_O4



## 3.1.5 Performance Indicators and Monitoring

Table 3-2 Performance Indicators and Monitoring – Particulate Emissions

Performance Indicator	Monitoring
<ul> <li>Air quality from CEIP Infrastructure operations does not exceed the air quality criteria for the Project at sensitive receptor locations</li> <li>Respond proactively to dust issues raised by the community.</li> <li>Investigation of air quality complaints indicates no exceedance of project air quality criteria due to CEIP infrastructure activities.</li> </ul>	Monitoring programme to confirm compliance with the air quality criteria for the project. The dust monitoring programme will focus on the sensitive receivers with the greatest potential for air quality impacts.  Monitoring will also enable modification of activities in response to the following triggers:  Predicted increased dust emission risk from weather forecast information (e.g. very high wind speeds)  Warnings or exceedance alarms from real-time dust monitoring at selected sites around the port facility  Observations(s) of significant dust generation during visual monitoring  It is proposed that monitoring will be undertaken until such time as confidence in the performance of the system has been established and to allow for the implementation and/or application of reactive mitigation if criteria are exceeded.
	<ul> <li>Review of adherence to processes and timeframes in Complaints Management Procedure</li> </ul>

## 3.1.6 Reporting

Environmental Manager to report exceedance of licence conditions or breach of approval condition to regulator in writing within defined time.

Record and respond to complaints in accordance with the Complaints Management Procedure.

Summary of monitoring results and any complaints received to be included in annual environmental report.

#### 3.1.7 Non-Conformance

Should an exceedance of nominated criteria occur (identified through monitoring or investigation of a complaint) alteration of site practices should occur which may include but is not limited to ceasing work in windy conditions, increased operational controls (e.g. additional watering) or more rigorous monitoring.

## 3.2 Noise and Vibration Generation (Terrestrial)

Operation of the CEIP infrastructure will generate noise and vibration from rail movements, borefield operation and materials handling activities at the port.

Noise and vibration emissions have the potential to disturb the amenity of surrounding residents and affect the behaviour of fauna. Noise and vibration emissions from CEIP Infrastructure operations have been predicted to be well within relevant noise criteria, however it is acknowledged that operational noise (particularly rail movements) will be audible to some sensitive receivers.

This EMP provides a framework for:

- Minimising rail noise
- Verifying compliance with noise criteria during the operational phase



 Implementing adaptive management strategies in response to any detected exceedances of noise criteria

## 3.2.1 Legal and Other Guidance

- Environment Protection Act 1993
- Environmental Protection (Noise) Policy 2007
- Guidelines for the assessment of noise from rail infrastructure (EPA 2013)
- NSW Department of Environment and Conservation guideline titled Assessing Vibration: a technical guideline 2006

#### 3.2.2 Values

The implementation of this EMP aims to protect the existing high level of amenity in the vicinity of the CEIP Infrastructure as a result of a quiet, rural environment with no identified significant sources of vibration.

#### 3.2.3 Objectives

Manage noise and vibration generation for the protection of the environment and human health and amenity.

## 3.2.4 Control and Management Actions / Environmental Management Measures

Table 3-3 Management Measures - Noise and Vibration

Control and Management Strategies	Identifier
Train operation safety measures will require sounding of the train horn on the approach to crossings. The noise level due to the horns is highly dependent on driver operation (the noise generated can be up to 14 dB higher if the driver presses heavily on the horn) so train drivers will be trained to operate horns by 'tapping' lightly and work procedures put in place to minimise nuisance noise at nearby dwellings.	NV_01
Train schedules and potential noise impacts will be communicated widely to the local and regional community.	NV_O2
Vehicles, locomotives and rail wagons will be regularly maintained. Maintenance requirements for rail wagons will be determined and addressed to minimise rail noise through such procedures as regular inspections which may include wheel roughness, brake system set-up and bogie suspension-tracking operation, or installation of noise cameras to identify noisy rail wagons.	NV_O3
Monitoring programme will be developed in accordance with statutory requirements.	NV_O4

## 3.2.5 Performance Indicators and Monitoring

Table 3-4 Performance Indicators and Monitoring – Noise and Vibration

Performance Indicator	Monitoring
<ul> <li>Noise from CEIP Infrastructure operations does not exceed the relevant noise criteria at sensitive receptor locations</li> <li>Respond proactively to noise issues raised by the community</li> <li>Investigation of noise and vibration complaints indicates no exceedance of project noise and vibration criteria due to CEIP infrastructure activities</li> </ul>	<ul> <li>Post construction noise monitoring (developed in accordance with statutory requirements) to verify that operational noise complies with noise criteria.</li> <li>Review of adherence to processes and timeframes in Complaints Management Procedure</li> </ul>



## 3.2.6 Reporting

Environmental Manager to report exceedance of licence conditions or breach of approval condition to regulator in writing within defined time.

Record and respond to complaints in accordance with the Complaints Management Procedure.

Summary of monitoring results and any complaints received to be included in annual environmental report.

## 3.2.7 Non-Conformance

Should an exceedance of nominated criteria occur (identified through monitoring or investigation of a complaint) appropriate corrective action will be taken. This may include training, additional monitoring and review or altered site practices.

## 3.3 Greenhouse Gas Emissions

Energy use during the operation of the CEIP Infrastructure would result in scope 1, scope 2 and scope 3 emissions. Emissions will be released through the consumption of liquid fuels, purchased and consumption of electricity, switchgear gas leakage, workforce transport (Fly-In-Fly-Out), and disposal of solid waste. The potential impact of these activities would be an increase in greenhouse gas emissions into the atmosphere, resulting in further contribution to global climate change.

In addition to GHG management, this section of the Operational EMP includes management and monitoring measures for risks to the project associated with climate change.

#### 3.3.1 Legal and Other Guidance

- National Greenhouse and Energy Reporting (NGER) Act 2007
- Climate Change and Greenhouse Emissions Reduction Act 2007
- The World Business Council for Sustainable Development Greenhouse Gas Protocol (World Business Council for Sustainable Development 2004)
- Climate Change Sector Agreements

#### 3.3.2 Values

The implementation of this EMP aims to protect the global environment by minimising greenhouse gas emissions.

## 3.3.3 Objectives

Implement reasonable measures to minimise greenhouse gas emissions during development and operation of Iron Road's projects.



## 3.3.4 Control and Management Actions / Environmental Management Measures

Table 3-5 Management Measures – Greenhouse Gas Emissions

Со	ntrol and Management Strategies	Identifier
Gre	eenhouse Gas Emissions	
	value of the monitoring value of the monitoring vehicle speed limits will be managed in accordance with traffic management plans and site conditions to mitigate wheel generated dust  Maintenance, inspection and verification requirements for all of the mobile fleet to	
	enhance efficiency and reduce emissions.  Monitoring programme to detect whether CEIP construction and operations are exceeding required emissions levels for the project.  Energy and water audits to be conducted annually once operations have commenced to ensure project efficiencies.	GHG_O1
Enc	Energy Efficiency and Use of Renewable Energy  Energy efficient design elements will be incorporated within the accommodation, administration and workshop facilities to reduce electricity demands (including the use of energy-efficient fixtures, fittings and appliances, and the use of passive solar design elements within the plant and accommodation facilities).  The use of solar hot water systems and solar photovoltaic systems for powering the site administration, accommodation and workshop facilities, where practicable.	GHG_O2
	Stockpiling of topsoils during operations for subsequent use in rehabilitation activities.  Compensation for vegetation clearance by purchasing regional land for conservation purposes or payment into the Native Vegetation Fund (as part of Significant Environmental Benefit offset, as per requirements of the Native Vegetation Act).  Liaison with local and regional stakeholders to ensure sustainable and viable offsets are selected (e.g. use of local species for vegetation projects that are known to survive under harsh seasonal conditions).	GHG_O3
Cli	mate Change	
be	e amplified risk of bushfire and extreme whether events as a result of climate change will considered in development of the Emergency Response Plan and the Fire Prevention juirements of this Operational EMP (Section 5.6).	GHG_O7
giv rec	nsideration of the fire danger season and total fire ban days as declared by the CFS will be en when planning hot works and other high risk activities. Bushfire management measures commended by the CFS will be incorporated into the Fire Risk requirements of this erational EMP (Section 5.6).	GHG_O8
ext	pection of water retention ponds and stormwater management infrastructure following reme storm events to determine the integrity of dam walls, to monitor available capacity, d to determine whether the design capacity remains current.	GHG_O9
fav	onitoring the marine environment for build-up of invasive marine species which may be oured by an increase in sea temperatures and could influence the functionality of the port d the local marine environment.	GHG_O10



## 3.3.5 Performance Indicators and Monitoring

Table 3-6 Performance Indicators and Monitoring – Greenhouse Gas Emissions

Performance Indicator	Monitoring
Identify opportunities and implement associated actions to reduce greenhouse gases generated during operation of the CEIP Infrastructure.	<ul> <li>Develop a monitoring program to enable adequate accounting and reporting of greenhouse gas emissions to NGER requirements and to help identify opportunities to reduce greenhouse gases generated during development of the CEIP Infrastructure.</li> <li>Monitor to detect whether CEIP operations are exceeding required emissions levels for the project.</li> <li>Energy and water audits to be conducted annually once operations have commenced</li> <li>Review of monthly reporting shows that greenhouse gas efficiency measures are being identified and considered.</li> </ul>

## 3.3.6 Reporting

Identified greenhouse gas reduction opportunities to be documented in the monthly report. Emissions, energy and water audits and monitoring results will be reported to the Environmental Manager. Reporting in accordance with any conditions of approval and NGER requirements. Identified non-conformances and corrective actions will be recorded as part of the EMS.

#### 3.3.7 Non-Conformance

Research into additional opportunities and implementation of actions to further reduce greenhouse gas emissions where greenhouse gas emissions are significantly greater than originally expected.



# 4 Generation of Industrial Wastes and Discharges

## 4.1 Stormwater Discharge

The operation of the CEIP Infrastructure has the potential to alter surface water flow regimes, particularly during heavy rain events. Runoff from heavy rain events may erode soil, especially where that soil is exposed and unprotected. Erosion is most likely to occur at locations of uncontrolled flow concentration such as drainage gullies, near culverts and on slopes.

Surface water flows are also affected by the introduction of additional hardstand and roofed areas which increase the proportion of runoff. While a negligible impact is expected from reduced infiltration to soil, increased roofed areas create an opportunity for harvesting of rainwater.

Soil disturbance from clearance activities is not expected to occur during operations.

## 4.1.1 Legal and Other Guidance

- Environment Protection Act 1993
- Environment Protection (Water Quality) Policy
- Natural Resources Management Act 2004

#### 4.1.2 Values

The implementation of this EMP aims to protect the following environmental values:

- Agricultural production (grain cropping)
- Creek catchments intersected by the infrastructure corridor (Driver River, Dutton River and unnamed creek although highly degraded and affected by human disturbance).

## 4.1.3 Objectives

Manage the hydrological regimes of surface water so that existing and potential uses, including ecosystem maintenance, are protected.

Manage ground, surface and marine water quality so that environmental values, both ecological and social, are protected.

#### 4.1.4 Control and Management Actions / Environmental Management Measures

Table 4-1 Management Measures – Stormwater Discharge

Control and Management Strategies	Identifier
Rainfall runoff from undeveloped portions of the site will be allowed to flow to the natural low points and swales where it has historically evaporated / infiltrated. Where these flow paths are crossed by infrastructure, armoured channels and culverts will be installed to support natural flows.	SD_O1
Where monitoring identifies additional controls are required, standard environmental management practices will be implemented to minimise erosion during operation.	SD_O2
Where practical, rainfall runoff from the long term employee village will be directed into the existing Council stormwater management system for open space irrigation purposes. Where connection to the Council stormwater management system is not practicable, runoff would be directed to swales for infiltration and evaporation as per existing natural processes.	SD_03
Water sensitive urban design principles will be incorporated into the port and accommodation village sites including the collection of roof run-off in rainwater tanks for use on site.	SD_04



## 4.1.5 Performance Indicators and Monitoring

Table 4-2: Performance Indicators and Monitoring – Stormwater Discharge

Performance Indicator		Monitoring	
	No surface water discharged from disturbed areas		Regular inspection to identify localised erosion
	the CEIP Infrastructure site to surrounding		within the site boundary and confirm no surface
	land/waters.		water discharges are occurring.

## 4.1.6 Reporting

Environmental monitoring results will be reported to the Environmental Manager and documented within the annual compliance report. Identified non-conformances and corrective actions will be recorded as part of the EMS.

#### 4.1.7 Non-Conformance

Non-conformances reported immediately to the Environmental Manager and appropriate corrective action shall be undertaken in a prompt manner.

## 4.2 Accidental Release from Chemical / Hydrocarbon Storage

Operation of the CEIP Infrastructure will require chemicals and hydrocarbons to be stored and used on site. The accidental discharge of chemicals and hydrocarbons may result in contamination of soil or water resources.

## 4.2.1 Legal and Other Guidance

- Environment Protection Act 1993
- Natural Resources Management Act 2004
- Environment Protection (Water Quality) Policy 2003
- National Environment Protection (Assessment of Site Contamination) Measure 1999
- Bunding and spill management guideline (EPA 2012)
- AS 1940-2004: The storage and handling of flammable and combustible liquids

#### 4.2.2 Values

The implementation of this EMP aims to protect and maintain the condition of soil and water resources in the vicinity of the operational footprint.

## 4.2.3 Objectives

Ensure that human health and safety is not adversely affected.

Maintain the quality of land, soils and surface water so that the environment values, both ecological and social, are protected.



## 4.2.4 Control and Management Actions / Environmental Management Measures

Table 4-3 Management Measures – Chemical / hydrocarbon storage

Control and Management Strategies	Identifier
Keep the quantity of chemicals stored on site to a minimum.	CHS_C1
All hazardous materials (oils, fuels and chemicals) which are required to be located at the site to be stored on a bunded impervious base. The capacity of all bunds will accord with that required by the EPA guidelines.	CHS_C2
Safety Data Sheets will be readily available for all materials on site.	CHS_C3
Bins provided for disposal of industrial wastes. Waste disposal undertaken by licensed waste contractor.	CHS_C4
Designated equipment lay down areas will be established.	CHS_C5
All vehicle re-fuelling will be undertaken in a designated hardstand re-fuelling area which is bunded to contain refuelling nozzle leakages.	CHS_C6
Regular inspection of vehicles and machinery to identify and address leaks.	CHS_C7
Chemical and fuel storage, handling and emergency response procedures will be developed in accordance with AS 1940-2004.	CHS_C8
Contamination booms, spill kits and absorption materials (as appropriate) will be maintained on site to contain and recover any inadvertent spillage of fuels or chemicals.	CHS_C9

## 4.2.5 Performance Indicators and Monitoring

**Table 4-4 Performance Indicators and Monitoring** 

Performance Indicator	Monitoring	
<ul> <li>Spills/accidental releases of chemicals/hydrocarbons are contained.</li> <li>No long term reduction in soil and water quality attributed to accidental releases of chemicals/hydrocarbons.</li> </ul>	<ul> <li>Iron Road will develop and implement a regular inspection program to audit and monitor fuel and chemical storage areas to ensure integrity, housekeeping and correct use.</li> <li>Containment and clean-up of accidental spills will be monitored (against developed procedure)</li> </ul>	

## 4.2.6 Reporting

Results of inspection program to be documented and reported on a regular basis to the Environmental Manager. Identified non-conformances and corrective actions will be recorded as part of the EMS.

## 4.2.7 Non-Conformance

Non-conformances reported immediately to the Environmental Manager and appropriate corrective action shall be undertaken in a prompt manner.

## 4.3 Waste Generation

The operation of the CEIP Infrastructure will generate a significant amount of waste. Inappropriate management of waste may result in contamination of soil and water resources, reduced amenity or the attraction of pest animal species.

Effective waste management for the CEIP Infrastructure is also important in order to minimise the project's contribution to landfill.



## 4.3.1 Legal and Other Guidance

Environment Protection Act 1993

#### 4.3.2 Values

The implementation of this EMP aims to protect the following environmental values:

- Existing condition of soil and water resources
- Human health and safety
- Existing amenity and cleanliness of the project area
- Flora and fauna species (which may be impacted through the attraction of pest species)
- Capacity of local landfill facilities

## 4.3.3 Objectives

Minimise any adverse environmental impacts from wastes and to implement reasonable measures to minimise their generation, to maximise their reuse and recycling, and to ensure safe and lawful disposal of all waste.

## 4.3.4 Control and Management Actions / Environmental Management Measures

Table 4-5 Management Measures – Waste Generation

Control and Management Strategies	Identifier
Waste management arrangements will be in accordance with the principles of waste minimisation, containment, segregation and appropriate re-use, recycling, treatment and disposal.	WG_01
Site inductions will inform all site personnel of their responsibility to reduce waste where possible - all personnel will receive instruction on what waste materials can be recycled and the location of the appropriate bins.	WG_O2
Identification, separation and provision of adequate waste disposal for all waste streams including kitchen wastes, soil (from foundations and clearance), hazardous items (e.g. sewage) and hydrocarbons.	WG_O3
All waste, including recyclable waste, will be sorted and stored within controlled contained areas until it can be removed from site by a suitable waste disposal company.	WG_04
Bunding will be used to prevent leaching of soluble waste or stormwater run-off carrying pollutants into drains or groundwater, and ultimately the marine environment.	WG_05
Secure lids will be fitted to bins that store food waste to prevent scavenging by birds and animals.	WG_06
Iron Road will liaise with the Wudinna and Tumby Bay Councils to develop or upgrade transfer facilities for recyclable waste that can be shared with the community	WG_07
Waste material that could present an entanglement risk to marine birds and mammals will be avoided at the port where practicable or, if not, appropriate arrangements implemented to ensure its safe disposal/recycling.	WG_08



## 4.3.5 Performance Indicators and Monitoring

Table 4-6 Performance Indicators and Monitoring – Waste Generation

Performance Indicator		Monitoring	
	All waste material to be appropriately classified		Iron Road will develop and implement a regular
	and segregated for reuse, recycling or offsite		inspection program to monitor storage, handling
	disposal		and disposal of wastes on site and to ensure
١.	Waste to be disposed of lawfully		management is in accordance with this plan.
	No complaints received in relation to waste		Review of adherence to processes and timeframes
	management practices.		in Complaints Management Procedure

## 4.3.6 Reporting

All waste disposed of (whether it be for recycling/reuse or landfill disposal) will be recorded on forms which will be part of the project record.

Record and respond to complaints in accordance with the Complaints Management Procedure.

Results of inspection program to be documented. Identified non-conformances and corrective actions will be recorded as part of the EMS.

#### 4.3.7 Non-Conformance

Non-conformances (identified through monitoring or the investigation of a complaint) reported immediately to the Environmental Manager and appropriate corrective action shall be undertaken in a prompt manner.





# 5 Community Interaction

## 5.1 Employment and Demand for Business Services

The CEIP Infrastructure will provide increased opportunity for local and regional employment and business development. An associated social risk is that the CEIP has the potential to increase competition for workers, attracting them from other sectors of the economy, including agriculture and fishing. Experiences in other rural areas suggests the mining industry can compete with other industries for employees and drive up wages that other industries may find difficult to match. Another potential impact includes skills shortages at a local level as a result of growth in employment opportunities related to CEIP.

Operation of the CEIP also has the potential to provide direct and indirect supplier and services opportunities at the local, regional and state level. This also has the potential to result in increased competition for local and regional suppliers.

## 5.1.1 Legal and Other Guidance

Development Act 1993

#### 5.1.2 Values

The implementation of this EMP aims to protect and enhance the following social values:

- Enhanced opportunities for local and regional suppliers, employment and business development
- Economic diversity in the region

## 5.1.3 Objectives

Positively contribute to the social and economic capital of the local and regional communities. Maximise opportunities for local and regional businesses.

## 5.1.4 Control and Management Actions / Environmental Management Measures

Table 5-1 Management Measures – Employment and Demand for Business Services

Control and Management Strategies	Identifier
<ul> <li>Develop employment programs and strategies to facilitate the participation of local and regional employment in CEIP, including:</li> <li>Actively work with local and regional employment services and businesses to enhance opportunities and give preference to suitably qualified local and regional workers</li> <li>Provide family friendly work environments to facilitate women's entry into the mining workforce</li> <li>Develop flexible work practices where possible to accommodate the potential for farmers to gain employment within the CEIP, such as job sharing.</li> <li>Maintain the existing online data base/register of prospective employees.</li> </ul>	EBS_O1
Continue to work collaboratively with government, education and training providers, and other relevant organisations to train and up skill local and regional people to work on the project and to enhance business capacity among local and regional suppliers  - Consult with Wudinna TAFE about vocational and pre- vocational training programs to enhance local skills and support local entry to the mining workforce  - Consider supporting vocational education and training programs at Port Lincoln and Wudinna to address skills requirements of relevance to the project  - Implement a trainee and apprenticeship program as part of the project  - Take part in programs targeting skills development and job placement for local Aboriginal people (as per the Indigenous Land Use Agreement).	EBS_O2



Control and Management Strategies	Identifier
Continue to implement the Australian Industry Participation Plan developed for the Project to maximise opportunities for Australian businesses to participate in the CEIP.	EBS_O3
Work with the Industry Capability Network (ICN) South Australia, Regional Development Australia Whyalla and Eyre Peninsula (RDAWEP) and other regional development organisations to promote the participation of local, regional and South Australian businesses in the CEIP.	EBS_O4
Continue to maintain the existing register of businesses with an interest in supplying goods and services to the project	EBS_O5
Continue to collaborate with the Eyre Peninsula Mining Alliance, the SA Chamber of Mines and Energy and other mining companies to provide information on careers in the Eyre Peninsula mining industry	EBS_O6
Continue to identify contract packages that could potentially be let locally or regionally	EBS_O7
Work with other members of the Eyre Peninsula Mining Alliance to create long term business benefits to Eyre Peninsula communities.	EBS_O8
Liaise with the South Australian Government's Resources Infrastructure Taskforce and the Eyre Peninsula Mining, Oil and Gas Community Development Taskforce to provide information on the CEIP, facilitate strategic planning and promote sustainable regional growth	EBS_O9
Work with local and regional industry and associations to plan regional supply and employment requirements and identify opportunities to collaborate to minimise potential for supply and skills shortages.	EBS_10
As part of the Indigenous Land Use Agreement (ILUA) between Iron Road and the Barngarla Aboriginal Corporation, a Liaison Committee will be formed to ensure that all employment opportunities and apprenticeships relating to the CEIP are noted on a register and available for both Barngarla or other indigenous people.	EBS_11
Where possible, provide third party access to infrastructure, including maintenance tracks and port facility to support existing regional industry.	EBS_12
Jointly investigate the export of grain via the proposed port (subject to necessary upgrades and regulatory approvals) under an MoU that has been signed with a global grain handling company.	EBS_13
Upon closure of the CEIP, existing CEIP Infrastructure will be left in place if it will benefit stakeholders. Prior to project completion, and as part of the CEIP closure plan, Iron Road will work with stakeholders, including future land users, to have a coordinate approach to accessing infrastructure upon project completion.	EBS_14

## 5.1.5 Performance Indicators and Monitoring

Table 5-2 Performance Indicators and Monitoring – Employment and Demand for Services

Performance Indicator	Monitoring	
<ul> <li>Participation of local and regional workforce, businesses and suppliers</li> <li>Collaboration with local and regional bodies to address potential for supply and skills shortages</li> </ul>	<ul> <li>Participation of local and regional workforce, businesses and suppliers</li> <li>Regular monitoring of stakeholder feedback, including feedback regarding demand for services, particularly through regional supply planning sessions</li> </ul>	

## 5.1.6 Reporting

Annual reporting of progress against socio-economic commitments developed in conjunction with stakeholders.



#### 5.1.7 Non-Conformance

Should objectives and targets not be met, alternative measures to meet them shall be explored in consultation with stakeholders.

## 5.2 Accommodation of Employees and Contractors

As the operational workforce will be housed at the long term employee village provided by Iron Road, impacts on local housing and accommodation will be negligible. An increase in population associated with the operational workforce has the potential to disrupt existing community interactions and values. This EMP provides a framework for managing the integration of the workforce with the existing community.

## 5.2.1 Legal and Other Guidance

Development Act 1993

#### 5.2.2 Values

The implementation of this EMP aims to maintain and enhance social cohesion and social interactions within the community.

#### 5.2.3 Objectives

Positively contribute to the social and economic capital of the communities in which Iron Road operates.

To ensure that community health and safety is not adversely affected.

## 5.2.4 Control and Management Actions / Environmental Management Measures

Table 5-3 Management Measures – Accommodation of Employees and Contractors

Control and Management Strategies	Identifier
Continue to liaise with local council and Government agencies as the project develops and provide regular information on expected workforce numbers and arrangements to allow them to plan appropriately.	AEC_O1
Develop policies and/or offer incentives to encourage the CEIP Infrastructure's operational workforce to reside locally.	AEC_O2
Develop corporate volunteering programs to bolster the membership base of volunteer organisations and to provide opportunities for workers to engage with the local community.	AEC_O3
Participate in planning initiated by the South Australian Government, Wudinna District Council and other service providers to plan for future social services and facilities requirements.	AEC_O4
Collaborate with key agencies, including local government, to support the provision of appropriate and sustainable services and amenities that benefit existing and incoming residents and LDC workers in Wudinna.	AEC_O5
Design the long term employee village in Wudinna to be aesthetically pleasing, locally appropriate and enhance perceptions of the town.	AEC_O6
Support the preparation of a Structure Plan at Wudinna to integrate the long term employee village within the existing township (process to be led by local Council).	AEC_O7
Collaborate with the Wudinna DC and South Australian Government in planning for new residential development, including the provision of strategic infrastructure, to ensure housing demand does not out-strip supply.	AEC_O8
Liaise with tourist accommodation providers to manage the potential effect of accommodation demand arising from the operation of the port on the availability of short term accommodation in Tumby Bay and Port Neill.	AEC_O9



Control and Management Strategies	Identifier
Work with the Wudinna DC to develop strategies to strengthen social cohesion and social interactions between non-residents, incoming residents and existing residents. The development of these strategies would be informed through regular surveys of workers and residents attitudes and perceptions.	AEC_O10
Continue to provide support to local community groups and community-based activities, including volunteer programs and sponsorships.	AEC_O11
Develop induction procedures and information that includes an orientation into the values and expectations of the local community.	AEC_O12
Require workers (including contractors) to sign a 'Code of Conduct', linked to their employment contract, outlining behavioural expectations applicable to accommodation villages and in local towns	AEC_O13
Implement workforce inductions to communicate safety and security expectations.	AEC_O14
Undertake regular drug and alcohol testing of all workers to monitor alcohol and drugs and ensure workplace safety	AEC_O15
Liaise with police and provide regular updates of workforce schedules to ensure adequate police resources would be available	AEC_O16
Work with police, local councils, residents and other stakeholders to develop and implement community-based safety awareness programs and strategies to reduce the potential for crime and fear of crime	AEC_O17

## 5.2.5 Performance Indicators and Monitoring

Table 5-4 Performance Indicators and Monitoring – Accommodation of Employees and Contractors

Pe	rformance Indicator	Monitoring
	No adverse impact on existing residents during operations	Regular monitoring of stakeholder feedback.
	Collaboration with police, local councils, residents and other stakeholders to address potential	
	workforce and accommodation integration issues	

## 5.2.6 Reporting

Regular reporting of progress against socio-economic commitments developed in conjunction with stakeholders.

#### 5.2.7 Non-Conformance

Non-conformances reported immediately to the Project Manager and appropriate corrective action shall be undertaken in a prompt manner. Should objectives and targets not be met, alternative measures to meet them shall be explored in consultation with stakeholders.

## 5.3 Changes to Land Access

Development of the CEIP Infrastructure will result in changes to land access from the introduction of linear infrastructure across the agricultural landscape. Altered land use practices during operation of the CEIP Infrastructure may impact on access to and availability of land within the proposed CEIP Infrastructure footprint and adjoining areas. This EMP provides a framework for minimising potential impacts and risks resulting from these land access changes



## 5.3.1 Legal and Other Guidance

- Development Act 1993
- Local Government Act 1999
- Road Traffic Act 1961
- Roads (Opening and Closing) Act 1991

## 5.3.2 Values

The implementation of this EMP aims to maintain and protect:

- The road linkages between towns and regional cities on Eyre Peninsula serve local and regional communities, freight and commercial vehicles (used to transport grain, mineral resources, freight, food product and other commodities), tourists and other road users.
- The capacity of agricultural landholders to use the land for crop production.

## 5.3.3 Objectives

Treat other land users with respect, minimise impacts and compensate fairly where impacts are recognised and are unavoidable.

## 5.3.4 Control and Management Actions / Environmental Management Measures

**Table 5-5 Changes to Land Access** 

Control and Management Strategies	Identifier
<ul> <li>Continue the programme of active engagement and consultation with local communities:</li> <li>Provide regular and timely information to local residents and the community about the project and planned works to assist in reducing disruptions and complaints.</li> <li>Continue to operate a toll free phone hotline and complaints and ideas management system with targets for the time taken to respond to / take action on complaints and ideas.</li> </ul>	LA_01
Provide advance notice of the movement of over dimensional loads on the road network	LA_02
Avoid wherever possible the movement of over-dimensional loads during peak traffic or agricultural periods, e.g. harvesting during daytime.	LA_O3
Liaise with local schools to discuss any impacts to bus routes due to operation of the proposed railway line.	LA_O4
Provide a regular bus service to transport employees to work at the mine.	LA_05
Continue to deliver a community development program to enhance amenity and deliver positive social outcomes in the districts.	LA_06
Maintain effective, regular and transparent communication with affected landholders and provide accurate and comprehensive information about the project and its potential impact on their property.	LA_07
Always engage with landholders with respect and in accordance with the law.	LA_08



## 5.3.5 Performance Indicators and Monitoring

Table 5-6 Performance Indicators and Monitoring – Changes to Land Access

Performance Indicator	Monitoring
<ul> <li>Direct land access impacts to agricultural landholders are identified and agreements lawfully negotiated</li> <li>Collaboration with local councils, residents and other stakeholders to address potential land access issues</li> </ul>	Regular monitoring of stakeholder feedback.

#### 5.3.6 Reporting

Regular reporting of progress against socio-economic commitments developed in conjunction with stakeholders. Identified non-conformances and corrective actions will also be reported.

#### 5.3.7 Non-Conformance

Non-conformances reported immediately to the Project Manager and appropriate corrective action shall be undertaken in a prompt manner. Should objectives and targets not be met, alternative measures to meet them shall be explored in consultation with stakeholders.

#### 5.4 Traffic Generation

Operation of the CEIP Infrastructure will generate traffic above existing levels which may impact the existing traffic and transport environment on the Eyre Peninsula. The project will introduce new rail movements and associated changes to the local road network. Risks associated with operational traffic include increased potential for collisions (between vehicles, trains and stock) and the potential for long delays at rail crossings. This section of the EMP provides a framework for addressing impacts and risks associated with traffic generated by the CEIP Infrastructure.

#### 5.4.1 Legal and Other Guidance

- Austroads Guide to Traffic Management
- Highway Capacity Manual (HCM) volume 2, chapter 15 methods for analysis of two lane highways (TRB 2010)
- Operational Instruction OI 7.9 Railway Level Crossing Treatments for Restricted Access Vehicles by the Department of Planning, Transport and Infrastructure (DPTI)

#### 5.4.2 Values

The implementation of this EMP aims to maintain and protect the following values:

- The low traffic volumes on the local road network and rural highways which are well below capacity thresholds
- Community safety
- Capacity to move freight effectively by road and rail
- Existing road pavement condition.

## 5.4.3 Objectives

Treat other land users with respect, minimise impacts and compensate fairly where impacts are recognised and are unavoidable.

Ensure that human health and safety is not adversely affected.



## 5.4.4 Control and Management Actions / Environmental Management Measures

Table 5-7 Management Measures - Traffic Generation

Control and Management Strategies	Identifier
Schedule shift changeovers away from current peak hours	TG_01
Designated delivery transport routes for heavy vehicle and light vehicles accessing the port site	TG_O2
Implementation of incident reporting system for the management of and implementation of traffic improvement measures	TG_O3
Development of pavement monitoring, management and rehabilitation plan in consultation with DPTI. This will identify different types of possible road and pavement damage, inspection frequencies, intervention levels and required treatments.	TG_04
Where required, the railway line will be fenced on both sides to prevent livestock from crossing the line, however final fencing details will be negotiated with each landowner.	TG_05
Train operation safety measures will require sounding of the train horn on the approach to crossings.	TG_06
Regular maintenance and inspection of rail wagons.	TG_07

## 5.4.5 Performance Indicators and Monitoring

Table 5-8 Performance Indicators and Monitoring – Traffic Generation

Performance Indicator	Monitoring
<ul> <li>Minor traffic delays as a result of rail movements (maximum of 60 seconds delay at passive crossings and 100 seconds delay at the Birdseye Highway active level crossing)</li> <li>No accidents during CEIP operations which are attributed to negligence of contractors/workers</li> </ul>	<ul> <li>Visual surveillance by site staff to review implementation of control measures and verify performance indicators.</li> <li>Regular monitoring of stakeholder feedback/complaints.</li> <li>Pavement condition monitoring and verification remedial works to pavements in conjunction with DPTI.</li> </ul>

## 5.4.6 Reporting

Traffic infringements associated with or as a result of the project to be reported to the Project Manager.

Record and respond to traffic and transport related complaints in accordance with the Complaints Management Procedure.

Results of visual surveillance program to be documented. Identified non-conformances and corrective actions will be recorded as part of the EMS.

#### 5.4.7 Non-Conformance

Non-conformances reported immediately to the Project Manager and appropriate corrective action shall be undertaken in a prompt manner.



## 5.5 Changes to Visual Amenity

Activities undertaken during operation of the CEIP Infrastructure will result in changes to the existing environmental values and visual amenity of the area. The operation of the CEIP Infrastructure will impact the landscape and visual amenity of the immediate locality as a result of:

- Dust emissions
- Existence of buildings and infrastructure in contrast to the surrounding environment
- · Lighting to allow 24 hour operation
- Increase in the number of people, vehicles and machinery

## 5.5.1 Legal and Other Guidance

Development Act 1993

#### 5.5.2 Values

The implementation of this EMP aims to protect the existing scenic and aesthetic values of the project area which is characterised by dryland farming, with isolated patches of vegetation scattered throughout the landscape.

## 5.5.3 Objectives

Ensure that impacts to amenity are reduced as low as reasonably practicable.

## 5.5.4 Control and Management Actions / Environmental Management Measures

Table 5-9 Management Measures – Changes to Visual Amenity

Control and Management Strategies	Identifier
Establishment of native vegetation to the east of North Coast Road adjacent to the port site to provide visual screening of the port site.	VA_01
Where practicable, buildings and structures will be of muted, earthen tones consistent with dominant colours in the landscape; highly reflective materials will be avoided to avoid glare and reduce the visibility of buildings and structures.	VA_02
Landscaping will be incorporated in association with each project component utilising locally endemic species. The landscaping will be used to manage surface water runoff as part of broader Water Sensitive Urban Design measures, and to provide visual relief and partial screening of the CEIP Infrastructure.	
The impacts to visual amenity as a result of visible dust will be managed through implementation of the Particulate Emissions Operational EMP requirements (Section 3.1).	VA_04

## 5.5.5 Performance Indicators and Monitoring

Table 5-10 Performance Indicators and Monitoring – Changes to Visual Amenity

Performance Indicator	Monitoring
<ul> <li>Respond proactively to visual amenity issues raised by the community.</li> <li>Investigation of visual amenity complaints indicates impacts are consistent with EIA visual amenity assessment.</li> </ul>	<ul> <li>Review of adherence to processes and timeframes in Complaints Management Procedure</li> <li>Regular site inspection and visual monitoring of activities likely to cause amenity issues including rubbish and site tidiness, and visible dust.</li> <li>Periodic monitoring to review effectiveness of screening along North Coast Road.</li> </ul>



## 5.5.6 Reporting

Record and respond to complaints in accordance with the Complaints Management Procedure. Summary of monitoring results and any complaints received to be included in annual compliance report.

#### 5.5.7 Non-Conformance

Should unanticipated visual amenity impacts associated with the CEIP Infrastructure be clearly observed and complaints received, Iron Road will consider implementation of visual screening, additional site clean-up, equipment storage, and other corrective actions on a case-by-case basis.

#### 5.6 Fire Risk

Bushfires are a natural occurrence; however increased incidence of bushfires may occur as a result of human activity. Increased incidence of bushfire poses a risk to life and property and can have ongoing impacts on the ecology of an area, particularly where the habitat is already fragmented through adjacent land use practices such as farming.

Bushfire is considered a project risk, as it is not expected as part of the normal construction of the CEIP Infrastructure. Bushfires can result from:

- Failure of management controls
- External weather conditions, lightning strike, recreational activities
- System failure
- Inadequate emergency response
- Proximity of vegetation near transmission line towers and wires, if unmanaged
- Use of equipment that produces sparks
- Welding and other hot works activities
- Use of petrol vehicles close to pasture stubble, native or exotic grasses

#### 5.6.1 Legal and Other Guidance

- Fire and Emergency Services Act 2005
- National Parks and Wildlife Act, 1972 (Schedules 7, 8 and 9 of the Act) (NPW Act)
- · Natural Resource Management Act, 2004 (NRM Act)
- Native Vegetation Act, 1991

#### 5.6.2 Values

The implementation of this EMP aims to protect:

- Community health, safety and amenity
- · Flora and fauna species of National and State conservation significance
- Common native flora and fauna species
- Public infrastructure and services

## 5.6.3 Objectives

Ensure that human health and safety is not adversely affected.



## 5.6.4 Control and Management Actions / Environmental Management Measures

Table 5-11 Management Measures - Fire Prevention

Control and Management Strategies	Identifier
Bushfire management and emergency response procedures will be developed to consider the amplified risk of bushfire and extreme weather events as a result of climate change.	BF_01
Regular best practice inspection and maintenance of transmission line and rail to reduce fire risk (e.g. vegetation proximity, systems failure, spark potential).	BF_O2

## 5.6.5 Performance Indicators and Monitoring

Table 5-12 Performance Indicators and Monitoring – Fire Prevention

Performance Indicator	Monitoring
<ul> <li>Bushfire management planning activities are implemented.</li> <li>No fires attributed to operation of the project.</li> </ul>	<ul> <li>Safety audits to review implementation of fire reduction measures.</li> <li>Review of independent bushfire investigation findings.</li> </ul>

## 5.6.6 Reporting

Any person (Iron Road or Contractor staff) who causes or becomes aware of a fire incident that has occurred on or within the CEIP Infrastructure must report it immediately to the Project Manager, with response procedures followed as described in the Emergency Response Plan.

Bushfire incident information will be recorded, documented, investigated and assessed as described in the Emergency Response Plan. Bushfire Management strategies will be reviewed in light of any fire incidents and annually reviewed to ensure practices are up to date.

#### 5.6.7 Non-Conformance

Corrective action to re-establish compliance should be taken as soon as possible.



# 5.7 Glossary

Acronym/Abbreviation/Term	Definition
AIP	Australian Industry Participation
CEIP	Central Eyre Iron Project
CFS	Country Fire Service
DC	District Council
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
Environmental Aspect	Describes the elements of the operation of the CEIP Infrastructure activities, products or services that can interact with the environment.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
EP NRM Board	Eyre Peninsula Natural Resources Management Board
ICN	Industry Capability Network South Australia
IMS	Invasive marine species
NGER	National Greenhouse and Energy Reporting
NPW Act	National Parks and Wildlife Act 1972 (SA)
NSW	New South Wales
RDAWEP	Regional Development Australia Whyalla and Eyre Peninsula
SA	South Australia
WPA	Wilderness Protection Area



#### 5.8 References

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