NOWA NOWA IRON PROJECT

ATTACHMENT 12 :

SOCIO-ECONOMIC AND HEALTH BASELINE AND EVALUATION

Prepared for Eastern Iron Limited by Earth Systems

REVISION 1

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EASTERN IRON LIMITED

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Executive Summary

Eastern Iron Limited ('Eastern Iron'), through its wholly owned subsidiary Gippsland Iron Pty Ltd, proposes to develop the Nowa Nowa Iron Project (hereafter 'the Project'). The Project is a greenfield development of a high grade magnetite/hematite deposit generally referred to as 'Five Mile'. It is located approximately 7 km north of the township of Nowa Nowa, which is situated on the Princes Highway between Bairnsdale and Orbost in East Gippsland, Victoria.

Earth Systems has been commissioned by Eastern Iron to prepare this *Socio-Economic and Health Baseline and Evaluation* to support a referral to the Minister for Planning for advice as to whether an Environment Effects Statement is required for the Project pursuant to the *Environment Effects Act* 1978 ('EES Referral').

The objective of this study is to identify the potential socio-economic and health effects of the Project in Victoria and develop an appropriate management and mitigation framework to minimize potential adverse socio-economic, health and safety effects and maximize potential socio-economic benefits to the local, regional and State economy.

Local and Regional Baseline

The proposed mine site for the Project is located approximately 7 km north of the township of Nowa Nowa and 18 km northeast of Lakes Entrance in East Gippsland, Victoria. Nowa Nowa is located on the Princes Highway which is the major transport route within East Gippsland. The broader region of influence for the Project is primarily the East Gippsland Shire, with a sub-regional focus on Lakes Entrance and District.

East Gippsland Shire is one of 6 Local Government Areas (LGAs) of the Gippsland Region. It is a predominantly rural area, with regional settlements concentrated around the coastal areas of Gippsland Lakes in the south-west, and relatively sparsely settled areas elsewhere. The majority of the Shire is held in National and State reserves and land use is characterised by pastoral and agricultural uses, particularly forestry and grazing. Nature-based tourism is also an important and growing industry.

No residential areas are located in the area directly surrounding the mine site, with the closest residential areas located approximately 4 km away. The nearest communities to the mine site are the small township of Nowa Nowa and the farming hamlet of Wairewa (approximately 20 dwellings) located approximately 7 km to the south and 4 km to the southeast of the mine site, respectively. In 2011, Nowa Nowa township had a population of approximately 147 residents while the combined population of Wairewa and its surrounding communities was 231 residents. While no residences occur in the area directly surrounding the proposed mine site, a number of isolated farmhouses occur on agricultural land in the broader area. The nearest isolated residence to the mine site is a single farmhouse on agricultural land adjacent to Bruthen-Buchan Road approximately 3.6 km west of the processing plant and 4 km west of the open pit.

In general, the demographic profile of the study area and surrounding sub-region is characterised by an aging population and a relatively high Indigenous population. Following the steady decline of the sub-regions' timber industry, the Nowa Nowa area is ranked in the top 10% of disadvantaged areas in Victoria, according to the Australian Bureau of Statistics Index of Relative Socio-economic Disadvantage (IRSD).

The health status of the population in the vicinity of the mine site is fairly consistent with the overall health status of the residents of Victoria with cancers and cardiovascular disease being among the primary causes of mortality. Access to health services in the study area is relatively limited, with only one

community health centre located in Nowa Nowa. The closest hospitals are in Bairnsdale (approximately 54 km away) and Orbost (approximately 35 km away). The nearest ambulance services are in Lakes Entrance, approximately 22 km from the mine site, with additional ambulance services also located in Orbost.

Tourism is a growing sector in East Gippsland, with the Ramsar listed wetlands, lakes, forests, rivers and the Alps key attractions. Hikers and cyclists are attracted to the East Gippsland Rail Trail which follows the disused Bairnsdale-Orbost railway, passing through Nowa Nowa.

Impact and Opportunities

A risk assessment approach was used to identify and rank the potential socio-economic and health effects attributable to the Project. The assessment considered both positive and negative aspects of the Project, with the most significant aspects likely to be associated with:

- Economic and employment benefits;
- Traffic volumes;
- Impacts on tourism;
- Safety and amenity impacts associated with increased heavy vehicle traffic; and
- Potential impact on downstream water quality.

Economic Development and Employment

The Project will generate significant economic benefit to the local, regional and State economy. Key economic indicators of the Project include:

- The provision of up to 120 FTE jobs within the local and regional economy during operations;
- Direct spend of up to $700 Million in the State and regional economy over an 8-10 year period;
- Additional flow on benefits to the local economy in terms of services and employment; and
- Additional taxes and royalties to contribute to State revenue.

More broadly, the Project will contribute significantly to maintaining the viability of the South East Fibre Exports (SEFE) wharf at the Port of Eden, in light of a downturn in the forestry industry. Anecdotal evidence suggests that this may represent long term security for up to 700 direct and indirect jobs in Victoria and New South Wales.

Communities likely to benefit the most from the Project include Nowa Nowa, Wairewa, Lakes Entrance and the town where the transportation depot is located (possibly Orbost or Newmerella). Development of the Project will also promote Victoria's image as mining friendly, encouraging exploration investment in the State.

Traffic Volumes

The potential increase in traffic volumes on the existing road network is assessed in the ***Traffic Impact Assessment*** (EES Referral Attachment 7). It is anticipated that the Project will result in a maximum increase of 128 light vehicles and 6 heavy vehicles per day on Project access routes during construction and a maximum of 216 light vehicles and 368 heavy vehicles per day during operations (assuming 1 Mt of product is exported in a given year). During operations, vehicle trips would be distributed between Victoria and New South Wales.

The ***Traffic Impact Assessment*** concludes that the existing road network is able to accommodate the increase in traffic attributable to the Project and that no upgrades are required, other than those proposed at the intersection of the mine access road and Bruthen-Buchan Road (EES Referral Attachment 7).

Further, the transportation route by-passes most residential areas further minimizing the impact of the increased traffic volumes.

Tourism

Tourism in the study area is dependent on the nature and conservation values in the region particularly around Lake Tyers. As currently designed, the Project is unlikely to have any significant impact on key nature and conservation values in designated recreational and tourist areas.

Amenity

Potential amenity impacts (air quality, noise, vibration, light pollution and visual amenity) associated with the Project are not expected to be significant. The nearest private land and residences are over 3 km from the mine site (with the nearest settlement being Wairewa located 4 km away) and are separated by State forest.

The most significant potential impact of the Project on amenity is likely to be due to increased traffic volumes along the product transport route via the Princes Highway to the Port of Eden. This will need to be effectively managed in accordance with the measures proposed as part of the Project.

Community Health and Safety

The most significant potential exposure of communities to health or safety hazards associated with the Project will be the increased risk of traffic accidents associated with the increase in vehicle traffic, including heavy vehicles. If managed effectively, this risk is likely to be low as the transport route for the Project is approved for B-Double use, managed by VicRoads and by-passes most residential areas. Risks associated with road traffic are addressed in the ***Traffic Impact Assessment*** (EES Referral Attachment 7).

Other potential community health and safety risks and effects (e.g. associated with air quality, water quality, unauthorised access to Project facilities and hazardous materials) are expected to be suitably managed through Project design.

Management and Monitoring

A socio-economic and health management and monitoring strategy for the Project has been outlined consistent with relevant legislation and best practice for mining operations. The proposed measures will be incorporated into the *Environmental Management Plan* (EMP) for the Project.

As part of the social management strategy for the Project, social impact monitoring will be used to identify and quantify the direct and indirect impacts of the Project on the surrounding community. Social monitoring will also ensure that existing management measures are effective, and will identify the need for improved or additional measures.

If managed appropriately, the Project has the potential to provide substantial support for broad based growth in the local economy, particularly through civic infrastructure support and the provision of employment opportunities for local communities, without significantly compromising the broader environment.

1 Introduction

1.1 Background

Eastern Iron Limited ('Eastern Iron'), through its wholly owned subsidiary Gippsland Iron Pty Ltd, proposes to develop the Nowa Nowa Iron Project ('the Project'). The Project is a greenfield development of a high grade magnetite/hematite deposit generally referred to as 'Five Mile'. It is located approximately 7 km north of the township of Nowa Nowa, which is situated on the Princes Highway between Bairnsdale and Orbost in East Gippsland, Victoria.

Earth Systems has been commissioned by Eastern Iron to prepare this *Socio-Economic and Health Baseline and Evaluation* to support a referral to the Minister for Planning for advice as to whether an Environment Effects Statement is required for the Project pursuant to the *Environment Effects Act* 1978 ('EES Referral').

The overall objective of this study is to identify the potential socio-economic and health effects of the Project and develop an appropriate management and mitigation framework to minimize potential adverse socio-economic, health and safety effects and maximize potential socio-economic benefits to the local, regional and State economy.

More specifically, the study aims to:

- Describe the policy context of the region;
- Characterise the demographic and social characteristics of local communities in the vicinity of the Project;
- Characterise social and community infrastructure and services, including health, education, housing and recreation;
- Describe local, regional and State economic conditions, including key employment and income generating industries and employment statistics;
- Identify and evaluate the potential socio-economic and health and safety impacts and benefits of the Project; and
- Describe proposed management and mitigation measures to minimise potential adverse socio-economic and health impacts and maximise benefits of the Project.

1.2 Brief Project Description

The Project is a greenfield development of a high grade magnetite/hematite deposit generally referred to as '5 Mile'. It is located approximately 7 km north of the township of Nowa Nowa, which is situated on the Princes Highway between Bairnsdale and Orbost in East Gippsland, Victoria. The site is wholly within the Tara State Forest (Figure 1-1).

The Project involves an open cut mining operation from a single pit with dry processing at the site to upgrade the material to a saleable product. It is anticipated that the Project will produce up to 1Mt of ore

per annum, over an initial mine life of 8-10 years. The mine will be operated using a mining contractor and local employees (i.e. no onsite accommodation).

It is proposed to transport the processed ore by road to the existing South East Fibre Exports (SEFE) wharf at the Port of Eden in Edrom, NSW. The majority of the transport route between the mine and the Port is via the Princes Highway. The material will be temporarily stockpiled before being loaded onto 50-60,000 t vessels and exported to international markets.

The main components of the Project at the mine site will include:

- Open Pit;
- Mine Infrastructure (includes the Run of Mine (ROM) pad, processing plant and Mine Operations Centre);
- Waste Rock Dump;
- Temporary Low Grade Ore Stockpile;
- Water Storage Infrastructure;
- Mine Access and Haul Roads; and
- Ancillary Infrastructure.

These components are depicted at Figure 1-2, whilst further details of the Project are provided in the ***Project Description and Proposed Mine Plan*** (EES Referral Attachment 1)

1.3 Project Proponent

The Proponent is Eastern Iron Limited ('Eastern Iron'), through their wholly owned subsidiary Gippsland Iron Pty Ltd. Eastern Iron is a minerals exploration and development company that was listed on the ASX in May 2008 (ASX:EFE). Eastern Iron has its main office in New South Wales, Australia and has the objective of discovering and delineating iron ore projects in eastern Australia.

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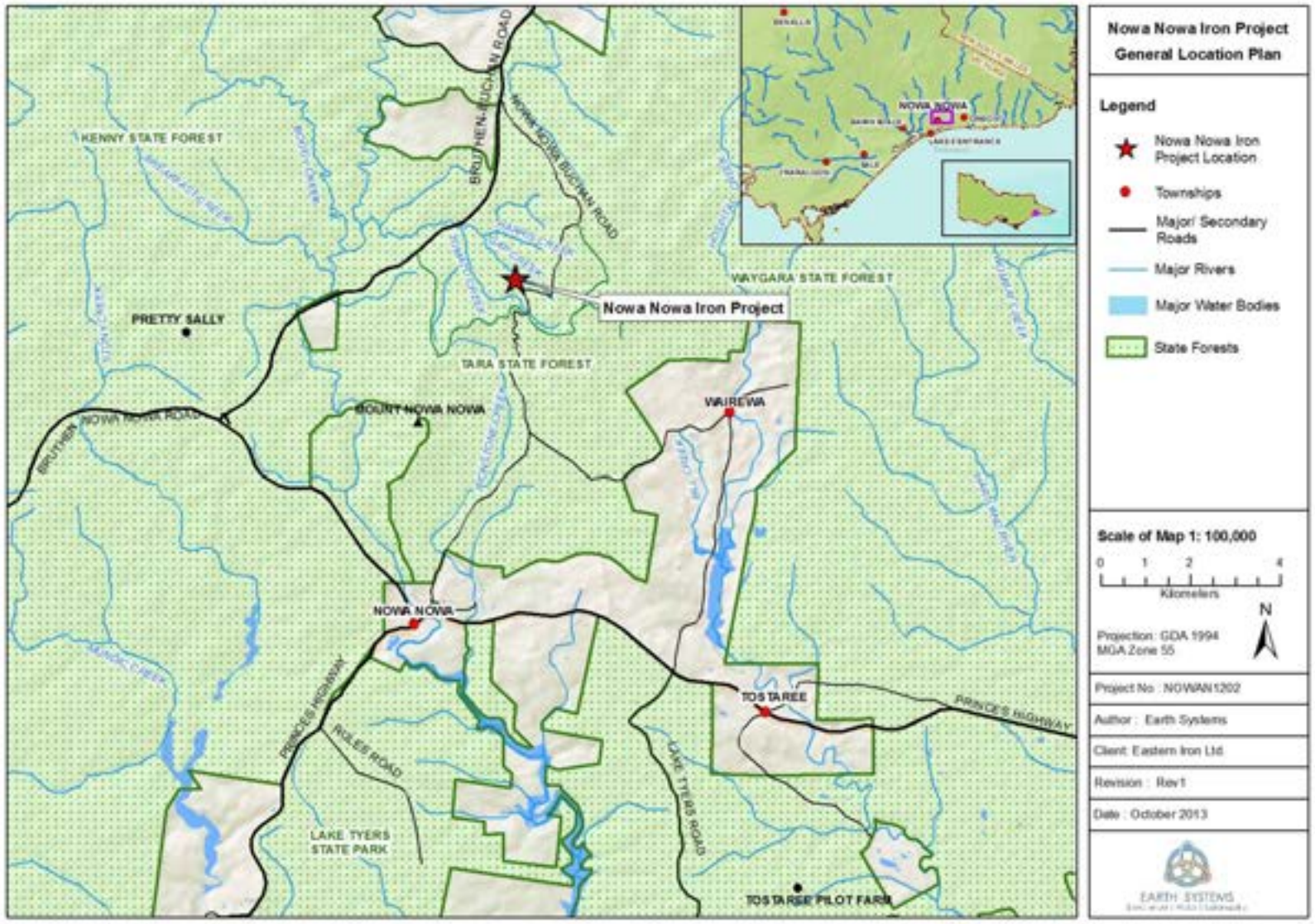

Figure 1-1 Project Location.

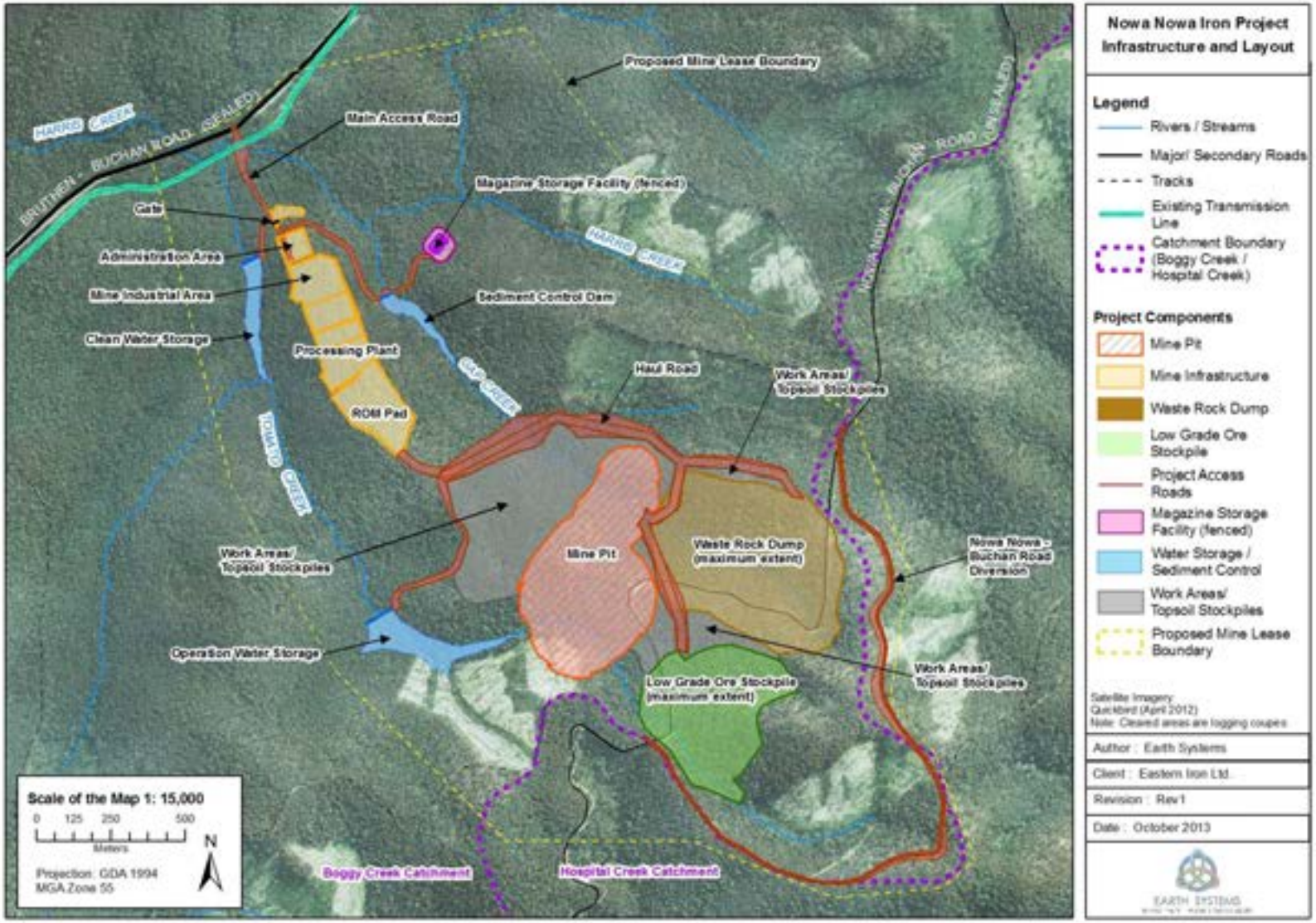

Figure 1-2 Project Infrastructure and Layout

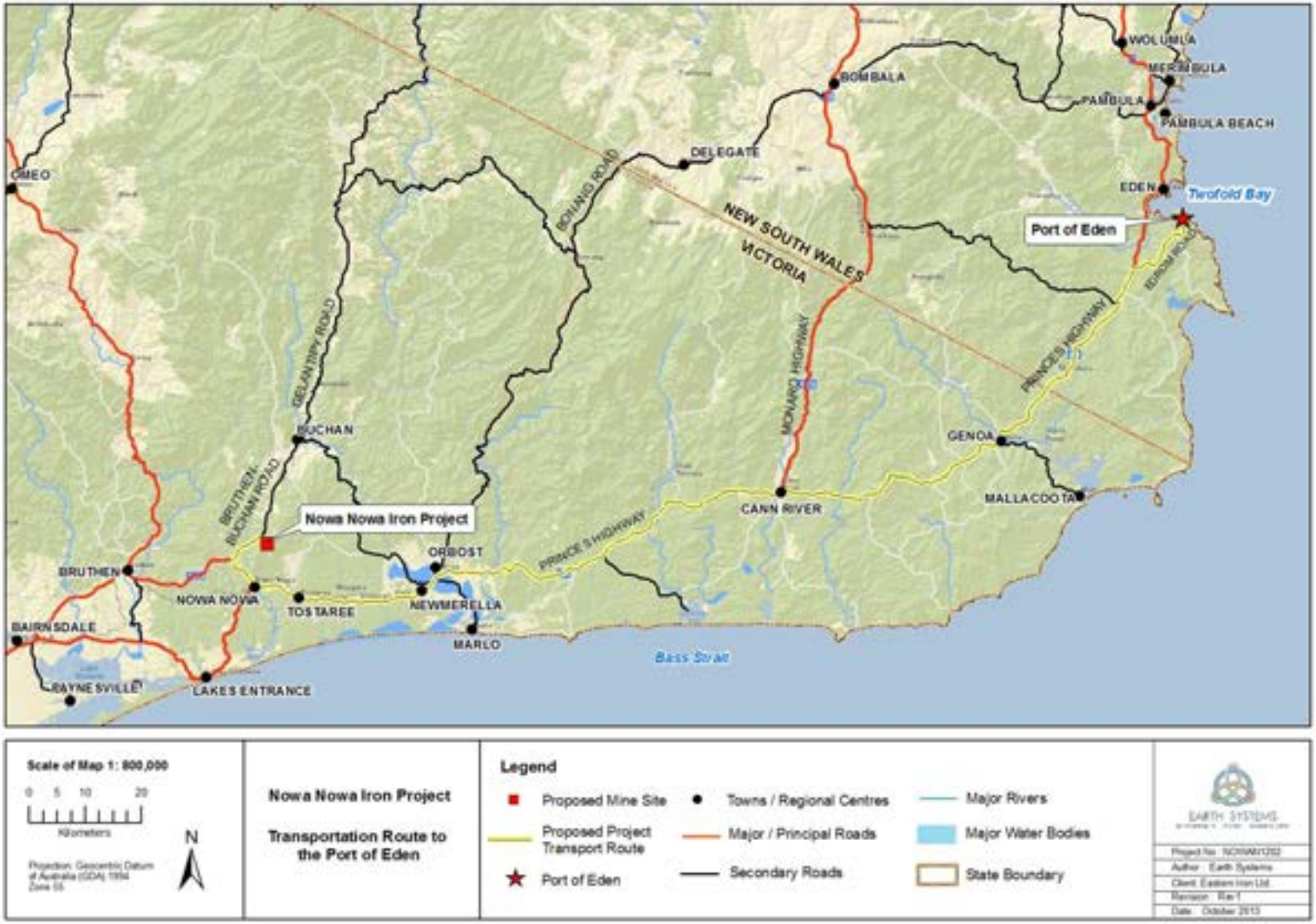

Figure 1-3 Proposed product transportation route

1.3.1 Environment and Social Setting

Environmental Setting

The proposed mine is in East Gippsland within the Tara State Forest, which is Crown Land that has primarily been managed for logging activities. The deposit is upstream of Lakes Tyers which forms part of the Gippsland Lakes Ramsar Site. The low-lying region has gently undulating hills flanked by coastal plains, dunefields and inlets. The hills rarely reach over 320 m elevation with several tributaries feeding the Gippsland Lakes system. Directly to the north are tablelands and mountains up to 1400 m elevation.

Social Setting

There are no nearby residences in the area surrounding the mine site. The nearest communities to the mine site are the small township of Nowa Nowa and the farming hamlet of Wairewa (approximately 20 dwellings) located approximately 7 km to the south and 4 km to the southeast, respectively (Figure 1-1). In 2011, Nowa Nowa township had a population of approximately 147 residents (DPCD 2011) while the combined population of Wairewa and its surrounding communities was 231 residents.

While no residences occur in the area directly surrounding the proposed mine site, a number of isolated farmhouses occur on agricultural land in the broader area. Those nearest to the mine site are:

- Single farmhouse on agricultural land associated with Wairewa hamlet just over 4 km southeast of the pit and 3.5 km southeast of the mine footprint; and
- Single farmhouse on agricultural land adjacent to Bruthen-Buchan Road approximately 3.6 km west of the processing plant, 4 km west of the pit and 3.3 km west of the mine footprint.

Lakes Entrance has a resident population of over 7000, and is 37 km by road southwest of the mine site. The small town of Buchan is some 28 km by road to the north.

1.3.2 Project Socio-Economic Details

Economics

Over the 8-10 year life of mine, it is anticipated that the Project will generate significant economic activity within the local, regional and State economy. Based on initial estimates (EIL 2013):

- Total capital investment for the Project is expected to be in the order of $37 million (including Victorian and NSW expenditure);
- Operating costs of approximately FOB (port)[1] $70 per tonne of product (or approximately $70 million per annum assuming 1 MT per annum of product);
- Annual revenue is expected to exceed $80 million per year; and
- Direct spend of up to $700 Million in the State and regional economy over an 8-10 year period.

The estimated 8-10 year life of mine is based on current resource estimates, depending on mining rates. However, there is potential for additional resource to be identified, which would extend the life of mine.

Workforce

The Project will endeavour to source employees, contractors and suppliers from the local region, as far as reasonably possible.

[1] Cost includes transportation of the goods to the port of shipment, plus loading costs.

Construction Workforce Assumptions

The Project will provide significant employment opportunities for the region. During the 8-10 month construction phase of the Project, it is estimated that approximately 37 full time equivalent (FTE) employees and contractors will be required, with a total of 70 employees.

In addition to the workforce estimates above, there will also be a requirement for construction crews at the Port of Eden in NSW. The manning schedule for the port activities has not been developed, however it is estimated that a total workforce of approximately 30 people will be required during the construction phase.

It is expected that the construction workforce would be predominantly sourced from the local region. A proportion of 'non-local hires' (those not living in the local/sub-regional study area, including accompanying partners or families) may need to temporarily relocate to the region, however it is expected that they will be accommodated within local and nearby communities.

Operational Workforce Assumptions

The operational workforce for the Project is likely to be approximately 120 FTE employees. The operations workforce will be predominantly 'local hires' (i.e. those currently residing within the local study area). A relatively small proportion of 'non-local hires' or specialist contractors may be required during operations, particularly in the early years of the Project.

There will be no Fly-In/Fly-Out (FIFO) workers or accommodation camp constructed for the Project. Eastern Iron's preference is that any 'non-local hires' settle in the broader sub-regional study area in either permanent or short-term accommodation, so as to establish a Drive-In/Drive-Out (DIDO) workforce.

Infrastructure

The Project seeks to utilise existing infrastructure already available to the site including the Princes Highway to export the product from the mine site. The Princes Highway will be accessed via the Bruthen-Buchan Road and Bruthen-Nowa Nowa Road.

Further details in relation to infrastructure required to support the Project are provided in the ***Project Description and Proposed Mine Plan*** (EES Referral Attachment 1).

Services and Supplies

The Project will require a range of services and supplies, many of which can be sourced locally. Services and supplies likely to be available locally or in the broader region include: mechanical services, accommodation services, food suppliers, and fuel and lubricant suppliers.

Community Investment

Eastern Iron is committed to working with the local community to maximise the return benefit of the Project to the local economy. This has been demonstrated through the exploration phase of the Project.

1.4 Report Structure

The format of the report is as follows:

- **Chapter 1:** Summary of the proposed Project, the proponent, and objectives of the report;
- **Chapter 2:** Report scope and assessment methodology;
- **Chapter 3:** Legislative and policy context for socio-economic and health evaluation

- **Chapter 4:** Regional and local baseline – community characteristics, economic conditions, recreation and leisure;
- **Chapter 5:** Evaluation of potential project impacts and opportunities;
- **Chapter 6:** Management and monitoring; and
- **Chapter 7:** References.

2 Scope and Assessment Methodology

2.1 Study Area and Scope of the Assessment

Administratively, the Project is located within the East Gippsland Shire which is one of the largest local government areas in Victoria covering over 21,000 km^2 and stretching from west of Bairnsdale to the NSW border.

The purpose of this *Socio-Economic and Health Baseline and Evaluation* is support a referral to the Minister for Planning for advice as to whether an Environment Effects Statement is required for the Project pursuant to the *Environment Effects Act* 1978 and, therefore, the focus of the report is on the components of the Project within Victoria. The Project components and activities at the Port of Eden will be subject to NSW State and local planning approval.

This report therefore focuses on the zones of influence around the mine site, as well as the transport route between the mine site and the Victoria-NSW border. The transport depot required for the Project will be subject to separate approval, at which time socio-economic and health impacts will be considered.

The *Socio-Economic and Health Baseline and Evaluation* focuses on the following geographic areas of influence of the Project:

- **Mine site** – area within the Project boundary at the mine site, including the mine access road which connects to the Bruthen-Buchan Road and the proposed diversion of Nowa-Nowa Buchan Road;
- **Immediate zone of influence around the mine site** – Nowa Nowa and Wairewa, being 7 km south and 4 km southeast, respectively.
- **Main service towns** – Lakes Entrance and Buchan, which can be described as part of the 'service catchment' for the Project region, providing health, education and community services to the residents in the immediate zone of influence;
- **Towns along the product transportation route** – Nowa Nowa, Tostaree, Newmerella, Orbost, Cann River and Genoa;
- **Downstream areas** – Lake Tyers (part of the Gippsland Lakes Ramsar Site); and
- **Broader region** – East Gippsland Shire and the State of Victoria.

The key stakeholders in these areas are outlined as part of the ***Stakeholder Engagement Plan*** (EES Referral Attachment 3).

2.2 Baseline Development Methodology

The methodology for the development of the socio-economic and health baseline for the study included:

- Literature Review, including analysis of Federal, State and local government policy, community planning reports and socio economic studies;

- Demographic analysis, based on data from the 2011 Census, East Gippsland Shire Council community profiles and State Government population projections;
- Site assessment and documentation of existing conditions, community facilities and services;
- Stakeholder consultation (refer EES Referral Attachment 3); and
- Identification and evaluation of potential impacts.

2.2.1 Data Analysis and Sources

The socio-economic and demographic analysis of the study area is based on 2011 Australian Bureau of Statistics (ABS) census data and East Gippsland Shire Council community profiles. An explanation of data categories is outlined below and summarised in Table 2-1 .

- ***2011 Census*** – For the 2011 Census, the ABS implemented the Australian Standard Geography Standard (ASGS), replacing the Australian Standard Geographical Classification (ASGC). To allow comparison with previous censuses, 2011 Census data is available for both standards. This report has used the ASGC standard, specifically the State Suburb levels of Nowa Nowa and Bete Bolong for the local population profile (Section 4.3.1) and the comparative demographic analysis (Section 4.3.2). ABS-derived Tourism Region (TR) data provide the basis for the tourism accommodation profile (Section 4.5.1).
- ***Community profiles from the East Gippsland Shire Council -*** East Gippsland Shire Council has created a series of Community Profiles for the region, based on 2011 Census data and estimations compiled by population experts. The Council has also created district level areas based on LGA services areas which are not geographical units from the Census. This data has also been utilised for the socio-economic and demographic baseline for this report.

Table 2-1 Summary of key spatial areas/data categories referred to in the current study

Area	Summary
East Gippsland Shire	Local government area (LGA)
Nowa Nowa State Suburb	Locality, including township of Nowa Nowa and communities of Toorloo Arm and Lake Tyers Beach
Bete Bolong State Suburb	Locality; including hamlet of Wairewa and communities of Tostaree, Wombat Creek, Waygara and Bete Bolong
Lakes Entrance and District	District-level administrative area based on council services areas
Lakes Tourism Region	Tourism Victoria classification (area is consistent with the East Gippsland Shire LGA boundary)
Gippsland Lakes Region	Sub-region of Lakes Tourism Region; includes attractions of Lakes Entrance and Lake Tyers

2.3 Evaluation Approach

A risk assessment approach was used for the study consistent with *AS/NZS ISO31000 Risk Management — Principles and Guidelines, 2009* and *ISO31010 Risk Management – Risk Assessment Techniques, 2009*.

Key risks and opportunities were identified covering each of the following aspects:

- Social aspects:
  - General social management risks;
  - Demographics and housing;
  - Amenity;
  - Land use; and
  - Cultural heritage.
- Economic aspects:
  - Economic development and employment; and
  - Tourism.
- Public health and safety.

Cultural heritage risks and aspects are discussed in detail in the ***Aboriginal Cultural Heritage Management Plan Interim Report*** (EES Referral Attachment 10), and are therefore not discussed in this report.

The risk assessment is initially conducted for the development scenario assuming implementation of Project 'controls' (risk avoidance/control measures integrated into the preferred Project design), but prior to any additional management and mitigation measures being applied. The goal of this process is to identify the most significant potential risks in the absence of additional mitigation. Following the assessment of the initial risk ranking, additional measures are identified to avoid or minimise the identified risks according to the level of risk, and a revised risk ranking is provided for residual risks. Measures focus on either reducing the likelihood of occurrence or decreasing the magnitude of the consequence. As a result, the expected residual risk is typically significantly lower than the initial risk ranking.

For each risk, a semi-quantitative evaluation of the level of the risk exposure for each risk identified was conducted. Risks were evaluated by allocating a 'Level of Likelihood' and 'Level of Consequence' to each of the risks. Risk exposure for potential adverse effects (threats) and potential positive effects (opportunities) are identified as either Low, Moderate, High or Very High as per Table 2-2 and Table 2-3.

Table 2-2 Risk Matrix (Threats)

Likelihood		Consequence (Adverse)				
		1	2	3	4	5
		Negligible	Minor	Moderate	Major	Extreme
5	Certain	Medium	Medium	High	Very High	Very High
4	Almost certain	Medium	Medium	High	High	Very High
3	Likely	Low	Medium	Medium	High	High
2	Unlikely	Low	Low	Medium	Medium	High
1	Rare	Low	Low	Low	Medium	Medium

Table 2-3 Risk Matrix (Opportunities)

Likelihood		Consequence (Beneficial)				
		1	2	3	4	5
		Negligible	Minor	Moderate	Major	Extreme
5	Certain	Medium	Medium	High	Very High	Very High
4	Almost certain	Medium	Medium	High	High	Very High
3	Likely	Low	Medium	Medium	High	High
2	Unlikely	Low	Low	Medium	Medium	High
1	Rare	Low	Low	Low	Medium	Medium

2.3.1 Definitions

Risk

As per AS/NZS ISO13000, 'Risk' is defined as the "effect of uncertainty on objectives", noting that an 'Effect' is a deviation from that which is expected and can be either positive and/or negative. In the case of the current Project, the risk of uncertainty lies in the ability to achieve the Project objectives as defined in Section 1.4 of the ***Project Description and Proposed Mine Plan*** (EES Referral Attachment 1).

Further definitions in relation to risk as per AS/NZS ISO13000 include:

- 'Residual Risk' is defined herein as the 'risk remaining after risk treatment'.
- 'Risk Source' is the 'element which alone or in combination has the intrinsic potential to give rise to risk'.
- A 'Risk Event' is the 'occurrence or change of a particular set of circumstances', noting that an event can be one or more occurrences, and can have several causes. In the case of the Project, this refers to the possible events/hazards (and their consequent effects) that could occur as a result of implementing the proposed Project.

Consequence

As per AS/NZS ISO13000, 'Consequence' is defined as the "outcome of an event affecting objectives".

As outlined in the ISO standards:

- An event can lead to a range of consequences. A consequence can be certain or uncertain and can have positive or negative effects on objectives.
- Consequences can be expressed qualitatively or quantitatively.
- Initial consequences can escalate through knock-on effects.

The descriptions of each numerical consequence rankings used are described in their respective economic, social and public safety and contexts in Table 2.5 below.

Likelihood

As per AS/NZS ISO13000, 'Likelihood' is defined as the "chance of something happening". In risk management terminology, the word 'likelihood' is used to refer to the chance of something happening, whether defined, measured or determined objectively or subjectively, qualitatively or quantitatively, and described using general terms or mathematically (such as a probability or a frequency over a given time period).

Descriptors for each likelihood rank are outlined in Table 2.4 below.

Table 2.4 Likelihood Description

Likelihood		Summary
1	Rare	**Highly unlikely to occur.** The aspect / event may occur in very exceptional circumstances.
2	Unlikely	**May occur at some time over the Project life.** The aspect / event has happened elsewhere under similar conditions.
3	Likely	**Expected to occur.** The aspect / event occurs in most circumstances.
4	Almost Certain	**Very likely to occur within a 12 month timeframe.** The aspect / event regularly occurs elsewhere under similar conditions.
5	Certain	**Will occur.** The aspect / event is certain based on the current Project description, or as near to certainty as makes no significant difference.

Controls

'Controls' are defined in AS/NZS ISO13000 as "the measure that is modifying risk". Controls include any process, policy, device, practice, or other actions which modify risk. For this risk assessment, controls have been further defined specifically as the existing features of the proposed Project that are intended to act to minimise negative risk or enhance positive opportunities.

These include the features of the proposed Project design and layout (refer EES Referral Attachment 1), the requirements for a mining project set out in applicable legislation and policy, as well as standard operating procedures (e.g. for construction equipment).

Additional management measures to be implemented in addition to the controls are defined separately below.

Management and Mitigation Measures

For the purposes of this risk assessment, management and mitigation measures are defined as additional measures to be implemented in addition to the Project 'controls' (refer above). These may include measures to further avoid, manage, or monitor certain aspects to minimise negative risk or enhance positive opportunities.

Table 2.5 Consequence Description

Consequence		Economic	Social	Public Health and Safety
1	Negligible	Very minor localised and/or short term impacts. No significant effect on local or regional businesses. Reduction in tourist visitation within normal variation.	Temporary or slight impact on community wellbeing in local area. Written / verbal complaint from community. Immediately recoverable with no lasting effects.	Minor injury or illness for 10 or less individuals over Life of Mine.
2	Minor	Short term impacts on local or regional businesses recoverable within 1 year. Short term but detectable reduction in tourist visitation beyond normal yearly variation. Recovery in less than 1 year.	Short term impact on community health / wellbeing in local area or region. Partial and/or localised impact on one or more Aboriginal heritage sites. Activities temporarily restricted in a localised area. Functional recovery in less than 1 year.	Medical Aid Injury with no risk of permanent impacts. Minor injury or illness for 10-100 individuals over Life of Mine.
3	Moderate	Significant impact on local	Significant impacts on community health /	Long-term medical

Consequence		Economic	Social	Public Health and Safety
		and/or regional businesses. Moderate reduction in tourist visitation. Recovery within 1-5 years.	wellbeing in local area or region. Recoverable without significant lasting reputational or relationship impacts. Substantial impact / removal of one Aboriginal heritage sites. Permanent restriction of activities in a localised area. Functional recovery in 2-5 years.	treatment required for an individual. Some hospitalisation. Minor injury or illness for 100-1000 individuals over Life of Mine.
4	Major	Major impact on economic viability of local and/or regional businesses. Substantial reduction in tourist visitation. Not easily recoverable. Recovery expected within 5-10 years.	Major impact on community health / wellbeing in local area or region. Community perception that Project areas have been significantly damaged. Substantial impact / removal of numerous Aboriginal heritage sites. National and/or international concerns. NGO / stakeholder activism resulting in reputational damage. Difficult to resolve quickly. Functional recovery in 5-10 years.	Single fatality. Multiple extensive injuries / industrial diseases requiring significant hospitalisation. Permanent severe life altering impact on one person.
5	Extreme	Major permanent impact on economic viability of businesses affected. Permanent loss of iconic tourist sites. Permanent flow on effects for local and regional businesses. Recovery in greater than 10 years if at all.	Complete breakdown of relationship with one or more key stakeholders. Sustained negative media coverage on a national or international level. Cessation or severe restriction of operations. Public outrage. Destruction of numerous Aboriginal heritage sites across multiple areas. Functional recovery in greater than 10 years, if at all.	Multiple fatalities. Permanent severe life altering disabilities for multiple people. Large number of people requiring long term hospitalisation. Minor injury or illness for >1000 individuals over Life of Mine.

3 Legislative and Policy Context

3.1 State and Local Planning Policy

The *Planning and Environment Act* 1987 establishes the objectives for planning in Victoria and provides the legislative framework for assessment of potential social and socio-economic effects associated with the Project.

The Act is 'enabling' legislation and does not precisely define the scope of planning. These and other detailed matters are dealt with by subordinate instruments under the Act.

The East Gippsland Planning Scheme is the relevant subordinate instrument for the assessment of the Project. The East Gippsland Shire Council is the responsible authority for administering the Planning Scheme.

The State and local planning policy frameworks of the East Gippsland Planning Scheme establish strategic land use and development policies and practices which promote community benefits and sustainable development.

Relevantly, Clause 13 of the State planning policy framework requires that:

> *'Planning should adopt a best practice environmental management and risk management approach which aims to avoid or minimise environmental degradation and hazards. Planning should identify and manage the potential for the environment, and environmental changes, to impact upon the economic, environmental or social well-being of society'.*

Further assessment and approvals under the *Planning and Environment Act* 1987 are subject to the Minister's determination of the EES Referral.

3.2 Health Policy

Victorian Health Priorities Framework 2012–2022: Rural and Regional Health Plan

The *Victorian Health Priorities Framework 2012–2022* provides the blueprint for planning and development priorities for the State healthcare system for the coming decade. The framework provides the foundation for the Rural and Regional Health Plan, which develops key actions to deliver responsive services in rural and regional Victoria. The Rural and Regional Health Plan builds on key actions outlined in the Metropolitan Health Plan and tailors specific strategies to ensure they are applicable to the rural and regional context.

Eleven profile areas (following local government boundaries) across rural and regional Victoria have been identified for the purposes of analysis and service planning. Based on the plan, the priorities for rural and regional Victoria include:

- Developing a system that is responsive to people's needs;
- Improving every Victorian's health status and health experiences;
- Expanding service, workforce and system capacity;

- Increasing the system's financial sustainability and productivity Implementing continuous improvements and innovation Increasing accountability and transparency; and
- Utilising e-health and communications technology.

National Environmental Health Strategy

The National Environmental Health Strategy 2007-2012 identifies the national health sectors' role in developing and supporting infrastructure for health protection. The strategy applies a risk assessment and management approach to address issues such as increasing the capacity of the environmental health workforce and ensuring planning responses are developed for critical public health issues. The strategy covers key environmental health risks in Australia, including:

- Emergencies and disasters;
- Climate change;
- Increasing pressure on drinking water supplies;
- The intensity of urban development; and
- The lack of effective environmental health infrastructure in Aboriginal and Torres Strait Islander communities.

3.3 Tourism Policy

Regional Tourism Action Plan (2009 – 2012)

The Regional Tourism Action Plan (2009 – 2012) provided the strategic direction for regional tourism for the three years to 2012. The plan focuses on attracting investment, destination marketing and promoting skills and services. Consultation is currently ongoing for the *Regional Tourism Strategy (2013-2016)* which will build upon the strategies of the previous plan. In regard to priorities for Gippsland, the plan states that the major tourism opportunity for the region is supporting investment that enhances nature based experiences.

3.4 Coastal Policies

Victorian Coastal Strategy 2002

The Victorian Coastal Strategy 2002 provides an integrated management framework for the coast of Victoria. The strategy was established under the Coastal Management Act 1995. The Act directs the Victorian Coastal Strategy to provide long-term planning for the Victorian coast to ensure environmental protection of significant features, provide direction for future use of coastal and marine areas and identify associated suitable development opportunities.

Coastal Spaces Landscape Assessment Study 2004

The Coastal Spaces Landscape Assessment Study was commissioned as part of the *Coastal Spaces Initiative,* which responds to planning challenges associated with coastal development. The assessment focuses on strategic coastal areas, including Gippsland (Bass Coast to the NSW border). The study was designed to implement the objectives of the *Coastal Management Act 1995* and the *Victorian Coastal Strategy 2002*. The study identifies and maps individual landscape characteristics within these coastal

regions, and provides a framework to assist local governments to manage impacts from coastal developments.

3.5 Gippsland Regional Policies

Gippsland Regional Plan (2010)

The Gippsland Regional Plan (GRP) is a long-term strategic plan that aims to manage the emerging challenges in the Gippsland Region and provide a strategy for the future. The plan outlines 10 priority areas for improving liveability, productivity and sustainability in the region, which are:

1. Gippsland Low Carbon Economy Transition Plan
2. Post Secondary Education
3. Gippsland's Gateways
4. Centre for Sustainable Technologies
5. Gippsland Lakes Sustainable Development Framework
6. Health and Wellbeing Outcomes
7. Gippsland Integrated Land Use Plan
8. Gippsland's Water
9. Broadband Connectivity
10. Tourism Infrastructure

Each regional priority consists of recommended projects, plans and/or policy support actions.

3.6 East Gippsland Shire Plans and Guidelines

Relevant plans and guidelines from the East Gippsland Shire include:

- East Gippsland Shire Council Social Impact Assessment Guidelines for Development Applications 2011
- East Gippsland Shire Council Council Plan 2009-13 (updated for 2012/2013)
- East Gippsland Shire Council Council Plan 2013 – 2017 (draft)
- Unlocking the Future–Long Term Community Vision 2030 (2012)
- East Gippsland Economic Development Strategic Plan, 2010
- East Gippsland Community Wellbeing Plan 2009-2013
- 10 Point Plan for East Gippsland, 2011

East Gippsland Shire Council Social Impact Assessment Guidelines for Development Applications 2010

- The key objective of the East Gippsland Shire Council Social Impact Assessment Guidelines is to 'ensure that social considerations are a core part of any proposed development, significant change in policy and/or infrastructure development' in the Shire. The Guidelines outline the

process for meeting the social objectives of land use and development planning, in accordance with the Planning and Environment Act (Victoria, 1987).

- The Guidelines outline the following: the definition of Social Impact Assessments (SIAs); the rationale and for undertaking SIAs; principles and functions of SIAs; trigger criteria for SIAs; roles of key stakeholders; the process for undertaking SIAs; assessment criteria; guidelines for completing a SIA; and processes for managing social impacts in the community over time.

East Gippsland Shire Council - Council Plan 2009-2013

The Council Plan 2009-2013 has been developed using the principles documented in the community's long-term vision "*Unlocking the Future – Long Term Community Vision 2030*". The vision was developed through a stakeholder consultation forum in 2008 and is centred on themes which have been used to build the four Council Plan strategic objectives: liveability, sustainability, productivity and governance.

East Gippsland Tourism Policy, 2013

The *East Gippsland Shire Council Tourism Policy* 2013 outlines how the Council will support and develop the Shire's tourism sector. East Gippsland Shire Council's vision for tourism is:

"The East Gippsland region will be increasingly recognised amongst targeted domestic and international market segments as a highly appealing visitor destination. The recognition will be based on its competitive advantages in natural attributes, water-based activities, supporting infrastructure and a strong culture of providing excellent customer service. Tourism will create sustainable growth and be a major contributor to East Gippsland's economy".

East Gippsland Strategic Tourism Plan 2006- 2011

The objectives of East Gippsland Strategic Tourism Plan 2006 – 2011 is to "*generate increased visitation, yield, length of stay and visitor dispersal (geographic and seasonal) driven by strong industry leadership and commitment from across the region".* The plan is based around four pillars for sustainable growth including marketing and brand; infrastructure; product and industry development; and management. It focuses on the hub of East Gippsland and its communities with different spokes for tourism including the Princes Highway (Melbourne Sydney coastal drive), the Great Alpine Road (as one of Victoria's great drives) and the Snowy River Valley (investment in returning environmental flows to the Snowy River).

Nowa Nowa, Wairewa & Lake Tyers Aboriginal Trust Community Plan 2012-2016

The community-planning process is supported through a Shire-wide project being progressively delivered across the East Gippsland Shire's communities. The *Nowa Nowa, Wairewa & Lake Tyers Aboriginal Trust Community Plan 2012-2016* is a collaborative effort between the Council and the local community to develop a strategy to assist Nowa Nowa and District to build support and focus resources to promote its local community. The Plan was informed by a series of community consultations and activities undertaken in 2011-2012. The Plan outlines four core thematic areas – Liveability, Sustainability, Productivity and Governance, with objectives, strategies and actions designated accordingly. The implementation of the community plan will take place with reference to and support from Council's broader strategic initiatives.

4 Regional and Local Baseline

The proposed mine site for the Project is located in the East Gippsland Shire in the south-east of Victoria, approximately 250 km east of Melbourne. East Gippsland Shire is one of 6 Local Government Areas (LGAs) of the Gippsland Region. It is a predominantly rural area, with settlement concentrated around the coastal areas of Gippsland Lakes in the south-west, and relatively sparsely settled areas elsewhere. The majority of the LGA is held in National and State reserves and land use is characterised by pastoral and agricultural uses, particularly forestry and grazing. Nature-based tourism is also an important and growing industry.

East Gippsland Shire has 15 district level areas based on Shire services areas, which are not necessarily geographical. The Project mine site is located within service area of 'Lakes Entrance and District'. Lakes Entrance and District covers an area of approximately 587 km^2 and includes the townships and communities of Kalimna, Lake Bunga, Lake Tyers, Lake Tyers Beach, Lakes Entrance, Nowa Nowa, Toorloo Arm, Tostaree and Wairewa.

This baseline focuses specifically on the local population in the vicinity of the mine site, but the broader region of influence is also considered. The local population in the immediate area of influence for the Project is the township of Nowa Nowa and hamlet of Wairewa, located approximately 7 km to the south and 4 km to the southeast of the mine site respectively. The broader region of influence for the Project is primarily the East Gippsland Shire, with a sub-regional focus on Lakes Entrance and District (refer Section 2.1).

4.1 Historical Context

The traditional land owners of Gippsland, including the study area, are the Gunaikurnai people. The Gunaikurnai people are made up of five major clans (GLaWAC, 2013):

- **Brabralung** people in Central Gippsland. Mitchell, Nicholson, and Tambo rivers; south to about Bairnsdale and Bruthen;
- **Brataualung** people in South Gippsland. From Cape Liptrap and Tarwin Meadows east to the mouth of Merriman Creek; inland to near Mirboo; at Port Albert and Wilsons Promontory;
- **Brayakaulung** people around the current site of Sale. Providence Ponds, Avon and Latrobe rivers; west of Lake Wellington to Mounts Saw Saw and Howitt;
- **Krauatungalung** people near the Snowy River. Cape Everard (Point Hicks) to Lakes Entrance; on Cann, Brodribb, Buchan, and Snowy rivers; inland to about Black Mountain; and
- **Tatungalung** people near Lakes Entrance on the coast. Along Ninety Mile Beach and about Lakes Victoria and Wellington from Lakes Entrance southwest to mouth of Merriman Creek, also on Raymond Island in Lake King.

While Aborigines have occupied East Gippsland for at least 18,000 years, the history of the Shire prior to European settlement has been poorly documented (DAFF 1999). Prior to commencement of the *Aboriginal Heritage Act* 2006, a number of regional and local archaeological studies had been conducted in East Gippsland, although few in the vicinity of the Project (refer EES Referral Attachment 10).

A large proportion of the East Gippsland region is set-aside for forestry, much of it within State Forest crown land (refer to the ***Land and Water Use Study***, EES Referral Attachment 11). The development of Gippsland's timber industry began in the 1850s. Within a decade, sawmilling had spread along the south coast between Wilsons Promontory and Port Albert, with the river systems of the Gippsland Lakes providing an opportunity for sawmilling to spread inland (DAFF 1999).

The construction of the Main Gippsland Railway in the 1870s and extension to Nowa Nowa township in 1914, provided access to previously inaccessible forests. By the 1920s, timber was the main industry in Nowa Nowa. With the advent of rail links, the township also became a key transport hub - shipping limestone from the Buchan area and timber out of the local region (Plate 4-5). A busy township developed, with mill workers living locally in huts and cabins and local mills providing an importance source of direct employment for Nowa Nowa and the surrounding townships (DAFF 1999). Since the 1990s, forestry activity in the region has significantly reduced, resulting in the closure of a number of local timber mill operations and leading to a decline in employment opportunities in Nowa Nowa and the surrounding area.

4.2 Economic Profile

4.2.1 State and Regional Economy

Victoria has a highly diversified economy with the service sector (e.g. retail trade, health, education and social assistance) and manufacturing accounting for a majority of employment (DBI, 2011). The Gross State Product (GSP) in Victoria in 2012 was approximately $329 million, which accounted for about 23% of the total GDP of Australia (slightly below Victoria's share of the national population – 25%).

The 'earth resources' sector (comprised of petroleum, mining and extractives industries) is recognised as constituting a small but valuable component of the Victorian economy (Parliament of Victoria 2012). Over the 2009–2010 period, the sector contributed $5.9 billion, or some 2% towards Victoria's Gross State Product. As highlighted by the Minerals Council of Australia (MCA), in 2009 the sector invested approximately $1 billion in capital works for mining operations in Victoria and an additional $60 million on exploration activities (Parliament of Victoria 2012).

While Australia recorded a trade surplus of $4.8 billion in 2012, the State of Victoria, with significantly more imports than exports, had a trade deficit (DFAT, 2013, refer to Table 4-1). Exports from Victoria currently account for only 11% of exports from Australia. Strategic objectives for economic growth of the State include increasing exports and / or replacing imports and increasing new investment to help generate jobs (DBI, 2013).

While employment remained steady in Victoria in 2011-2012, the number of unemployed persons rose as vacancies declined. In 2006, approximately 75% of the jobs in Victoria were based in Melbourne with only 25% in Regional Victoria (including East Gippsland). In regional Victoria, in 2011, employment in retail (including tourism services), construction and health care and social assistance increased, while employment in agriculture and manufacturing declined. At the regional level, the Gippsland region has historically maintained key linkages to export ports in Melbourne and New South Wales (NSW). The Gippsland Regional Plan 2010 identified top sectors in terms of regional exports as: manufacturing, mining, energy supply (electricity, gas and water), agriculture/forestry/fisheries and construction. In 2010, these sectors collectively represented $9.46 Billion (88.3% of total regional exports) – with mining constituting some 25%, at $2.42 Billion (Regional Development Victoria 2010). In terms of employment growth in the region, sectors with the highest relative growth in percentage terms in recent years have been Government Administration & Defence (144.3%), Construction (141.2%) and Mining (133%). While

agriculture has been a key sector in the regional economy, the sector has seen rising unemployment over an extended period, with a further decline of an estimated 1000 jobs over the five year period 2006-2010 (Regional Development Victoria 2010).

Table 4-1 Select economic indicators for Victoria.

Selected Indicators	Victoria
GSP (Annual $ Million 2011-2012)	328,595
Proportion of Australian GDP (%)	23%
Real GSP growth (%)	2.7
Real GSP growth per head (%)	1.3
Unemployment rate (%)	5.3
Exports (A$ million)	33,843
Imports (A$ million)	74,204
Balance of trade (A$ million)	- 40,361
Share of Australian Exports (%)	11%
Share of Australian Imports (%)	25%

Source: DFAT, 2013

In 2013, Council budgets across Victoria are projected to lift rates by some 4.8% to address critical cost pressures, include ongoing maintenance and replacement costs of ageing community infrastructure (Municipal Association of Victoria 2013). Accordingly, investment from the resource sector, particularly in civic-infrastructure partnership programs is increasingly being recognised an important part of supporting broad-based economic growth in rural and regional areas (Mining for Development Conference 2013).

Significant industries in East Gippsland include primary industries and tourism, as well as manufacturing and services such as health, education and retail trade. In 2012, the Shire's GDP was $1,349 million or an estimated 0.5% of Victoria's GDP (East Gippsland Shire Council, 2013). While primary industries have historically been significant employers in the Shire, the last decade has seen significant structural change in the drivers of the East Gippsland economy. Specifically, decline in the timber and agriculture sectors has led to economic hardship, particularly apparent in rural townships dependent on timber milling and associated services (East Gippsland Shire Council 2013).

4.2.2 Local Industries and Employment

Relative to the broader local government area, there is a strong 'trades and labourers' trend in Lakes Entrance and District. Analysis undertaken in 2011 of jobs held by the resident population in Lakes Entrance and District identified the top occupations as: technicians and trade workers, labourers, followed by salaried professionals and managers. Collectively, these occupations accounted for over half (58%) of the employed resident population.

At the 2011 census, unemployment levels were higher in Nowa Nowa State Suburb (6.8%) relative to Bete Bolong State Suburb (2.7%). However, unemployment levels in the Indigenous population for Lakes Entrance and District were significantly higher overall (16.3%) (East Gippsland Shire, 2013 online).

Primary employers in Bete Bolong were the livestock and grain industries, employing approximately 15% of the workforce. In Nowa Nowa, primary employers included education, hospitality, construction and accommodation sectors. The local economy in Nowa Nowa was originally driven by timber milling, and two (2) timber mills continue to operate. General trends indicate declining forestry employment in the sub-region and residents that are not employed locally, commute to neighbouring Bairnsdale, Orbost, Bruthen and Lakes Entrance.

The most common occupations identified in Nowa Nowa State Suburb were broadly characterised as salaried 'professionals' and labourers (equally 19.1%). In Bete Bolong, salaried professionals and technicians/trade workers (equally 15.3%) were also common occupations, however relative to Nowa Nowa, there were more managers (29.7%). The greater proportion of managers in Bete Belong can likely be attributed to its livestock and agribusiness focus. For the Indigenous population of Lakes Entrance and District over a quarter were community and personal service workers (26.2%), followed by technicians/trades workers and labourers (equally 14.5%).

In 2010, incomes in East Gippsland were below average for Victoria with approximately 65% of individuals earning less than $400 per week (compared with 52% for the rest of Victoria) and 36% of households earning less than $600 per week (compared with 24% for the rest of Victoria) (State of Victoria, 2010).

4.3 Community and Health Profile

4.3.1 Population and Demographics

East Gippsland Shire

Consistent with broader regional Victoria, East Gippsland is characterised by an ageing population with a steady out-migration of school leavers and young professionals to Melbourne (Gippsland Regional Plan, 2010). In 2011, East Gippsland Shire was comprised of a population of approximately 42,193 residents (East Gippsland Shire, 2013). Bairnsdale is the largest commercial centre and Lakes Entrance, located along the coast, is the largest tourist centre in East Gippsland. At the 2011 Census, there were approximately 17,662 households, consisting primarily of couples without children (33.2%), lone persons (27.6%) and couples with children (22.3%).

Aboriginal and Torres Strait Islander people comprise approximately 3% of the East Gippsland region population, relative to 0.6% for Victoria.

Lakes Entrance and District

As of 2011, Lakes Entrance and District has a total population of approximately 7,691 people, of which approximately 5% were Indigenous (East Gippsland Shire, 2013).

Communities in the Vicinity of the Project

The local population in the immediate area of influence for the Project is the township of Nowa Nowa and the hamlet of Wairewa, located approximately 7 km to the south and 4 km to the southeast of the mine site respectively. The population of Nowa Nowa is approximately 147 (ABS, 2011). Nowa Nowa State Suburb encompasses the township of Nowa Nowa and communities of Toorloo Arm and Lake Tyers Beach. In 2011, Nowa Nowa State Suburb had a population of approximately 341 residents; with Indigenous persons comprising approximately 4% of the local population (ABS, 2011). The population in this State Suburb fell by 35% over a 15 year period from 1991 – 2006, but has since grown steadily to achieve its current population, which now exceeds the population in 1991.

The small hamlet of Wairewa is comprised of approximately 20 dwellings, however statistics regarding the population of this settlement are not available. In 2011, Bete Bolong State Suburb (which includes the farming hamlet of Wairewa and communities of Tostaree, Wombat Creek and Waygara) had a population of approximately 231 residents, with a relatively equal gender distribution. The Indigenous population of the State Suburb comprised an estimated 1% of the local population (ABS, 2011).

Indigenous Groups and Residents of Lake Tyers Reserve

The Gunaikurnai Land & Waters Corporation (GLaWAC) are the native title holders for the area and the traditional owners of Gippsland. There are approximately 3,000 Gunaikurnai people, and the native title agreement area extends from west Gippsland near Warragul, east to the Snowy River and north to the Great Dividing Range. Under the 2010 native title agreement, 10 national parks and reserves (including Gippsland Lakes Coastal Park) were transferred to the Gunaikurnai to be jointly managed by the Gunaikurnai and the State.

There is limited demographic information available for Lake Tyers Reserve, due to the small population for the area. At the 2011 census, there were 127 residents (54% males and 46% females), in a characteristically young community relative to the surrounding area (median age of 29 years, compared with 47 years for Nowa Nowa State Suburb).

Residents Along Transporation Routes

Communities located along the proposed transport route to the Port of Eden are summarised in Table 4-2.

Table 4-2 Communities located in vicinity of proposed transport route to the Port of Eden

Township/Regional Centre	Population	Description	Proposed route to bypass town centre (Y/N)
Orbost	2,493	Regional centre– service centre for primary industries and growing tourism base (proximity to national parks)	**Y**
Tostaree		Rural suburb ~ 10 km east of Nowa Nowa	**-**
Newmerella	441	Township ~ 5km west of Orbost	**Y**
Cann River	168	Township – proximity to national parks; popular stopping point for interstate travellers using the Princes Highway	**N**
Genoa	304	Township – access point to national parks	**Y**

Sources: Compiled with data from the East Gippsland Shire Council, 2013 online and 2011 Census

With the exception of Cann River, most town centres are bypassed by the Princes Highway and are thus not directly located along the proposed transport route.

Other townships in the vicinity of the Project include the town of Buchan, located approximately 16 km to the north of the Project in the Rural Far East District. In 2011, the Buchan State Suburb (including Buchan South) had a population of approximately 385 residents. The regional centre of Orbost, with a population of approximately 2,493 (ABS, 2011), is the largest town along the transportation route to the Port of Eden and is located 35 km to the east of Nowa Nowa.

4.3.2 Comparative Demographic Analysis

Age Profiles and Population Projections

Based on East Gippsland Shire Council analysis, the largest proportion of the population in Lakes Entrance and District are 'parents and homebuilders' (ages 35-49) and 'empty nesters and retirees,' (aged 60-69), accounting for some 35% of the districts' population, in relatively equal proportion (18% and 17% respectively).

In Nowa Nowa and Bete Bolong State Suburbs, children (<14 years) and retirees (65+ years) constituted the largest proportion of the local population – with children accounting for some 20% of the resident population in both areas, and retirees comprising over 15%. Statistics indicate that in Indigenous

population, the number of young people increases – with approximately 40% of the Indigenous population of Lakes Entrance & District under 17 years old.

Over the next two decades, the estimated resident population of East Gippsland LGA is projected to steadily increase by an estimated 28%, to 56,184 in 2036 (East Gippsland Shire, 2013 online) with the number of those aged 65+ expected to grow by over 50%. The population of Lakes Entrance and District is expected to follow a similar trend to the broader LGA with the largest population growth expected to occur in the retiree population. In a similar trend to regional Australia, there is a migration of young adults from the Shire to Melbourne for education, employment and lifestyle reasons.

Index of Relative Socio-economic Disadvantage (IRSD) Ranking

Nowa Nowa has an IRSD score of 934 and is ranked in the 1st decile for Victoria, making it one of the top 10% most disadvantaged areas in the State.[2] In contrast, the population in Bete Bolong is significantly less disadvantaged, ranking in the 5th decile for Victoria (Table 4-3).

Table 4-3 Index of relative socio-economic disadvantage for the study area

Area	Index of relative socio-economic disadvantage	Decile Ranking (within Victoria)
Bete Bolong State Suburb	1010	5th decile
Nowa Nowa State Suburb	934	1st Decile
Lakes Entrance and District	931.7	n/a
East Gippsland Shire	958.2	3rd Decile
Regional Victoria	977.7	n/a

Source: Australian Bureau of Statistics, 2011b

In 2006, it was estimated that approximately 26% of children in East Gippsland lived in households with an income of less than $650 per week – significantly more than in the whole of Victoria, where only 18% of children lived in households with incomes below $650.

Education and Resident Mobility

The proportion of the population in Lakes Entrance and District with vocational or tertiary qualifications is consistent with the Shire average but moderately lower than the State average. Specifically, some 35% of the Lakes Entrance and District population (>15 years) hold educational qualifications. Of the total population in Lakes Entrance and District who had educational qualifications, some 7% had a Bachelor degree (compared to 10% in East Gippsland Shire and some 20% in Victoria), 6% had an Advanced Diploma and 20% had vocational qualifications.

Resident mobility, as a measure of migration within a population, can also be a broader indicator of workforce mobility. Resident mobility is somewhat lower in both Nowa Nowa and Bete Bolong, relative to the regional average for East Gippsland Shire. Specifically, over 60% in Nowa Nowa and close to 80% in

[2] The Index of Relative Socio-economic Disadvantage (IRSD) is derived from census variables that reflect disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles. Scoring on the index is inversely related to the level of disadvantage, whereby a higher score on the index means a lower level of disadvantage and vice versa. The lower deciles also correspond to the most disadvantaged populations.

Bete Bolong reside at the same address as five years ago (2006), compared to 57% in East Gippsland Shire (ABS, 2011).

Origin and Religious Affiliation of Residents

Lakes Entrance and District is characterised by a large population of Australian-born residents and a mixture of predominantly English, Scottish and Irish ancestries and smaller segments of the population with Italian, German and Dutch backgrounds. Consistent with this pattern, the majority of the population in Nowa Nowa and Bete Bolong were born in Australia and speak only English at home. According to 2011 census data, the majority of Aboriginal and Torres Strait Islander people in East Gippsland (Indigenous Location) also speak only English at home. Other languages spoken include Kanai and Yorta Yorta (equally 0.4%).

Similar to East Gippsland Shire and regional Victoria, Lakes Entrance and District has a predominately Christian population (over 60%), with an estimated 25% indicating no religious affiliation. This is consistent with Nowa Nowa and Bete Bolong.

4.3.3 Health Status

Life expectancy for males in East Gippsland is approximately 78, while for females it is 83, which is slightly lower than the average life expectancy for males and females in Victoria (80 and 84, respectively). The percent of overweight men and women is significantly higher in East Gippsland than the rest of Victoria, with approximately 60% of men being overweight and 30% of women (compared with 40% of men and 24% of women in Victoria) (State of Victoria, 2010).

In 2010, the top five (5) causes of death in East Gippsland were: malignant cancers, cardiovascular diseases, chronic respiratory disease, unintentional injuries and neurological and sense disorders. The top five (5) causes of disability included: neurological and sense disorders, mental disorder, malignant cancers, chronic respiratory disease and cardiovascular disease (State of Victoria, 2010).

Accessibility to Health Sevices

The Gippsland region is serviced by a network of regional, sub-regional and local health services and hospitals with the regional hospital located in the Latrobe Valley. According to the Gippsland Regional Growth Plan (2010), there are approximate 1.13 GPs per 1,000 residents in East Gippsland (fairly consistent with Victoria overall, which as 1.18 GPs per 1,000 residents).

In general, the percentage of residents in East Gippsland receiving immunization and cancer screens is consistent with (or exceeds) that of the rest of Victoria (State of Victoria, 2010). Inpatient separations per 1,000 people are higher in East Gippsland (590.4 per 1,000 compared with 425.5 per 1,000), though length of hospital stay tends to be shorter – 2.7 days compared with 3 days for the rest of Victoria. The rate of avoidable hospitalisations is higher in East Gippsland than in the rest of Victoria, most of which are associated with diabetes complications (consistent with the Victoria).

Access to health services in the study area is relatively limited, with only one community health centre located in Nowa Nowa (refer Section 4.4 and Figure 4-1 below). The closest hospitals are in Bairnsdale (estimated 54 km away) and Orbost (estimated 35 km away). The nearest ambulance services are in Lakes Entrance, an estimated 22 km away with ambulance services also located in Orbost. Indigenous health services are centred in Lake Tyers.

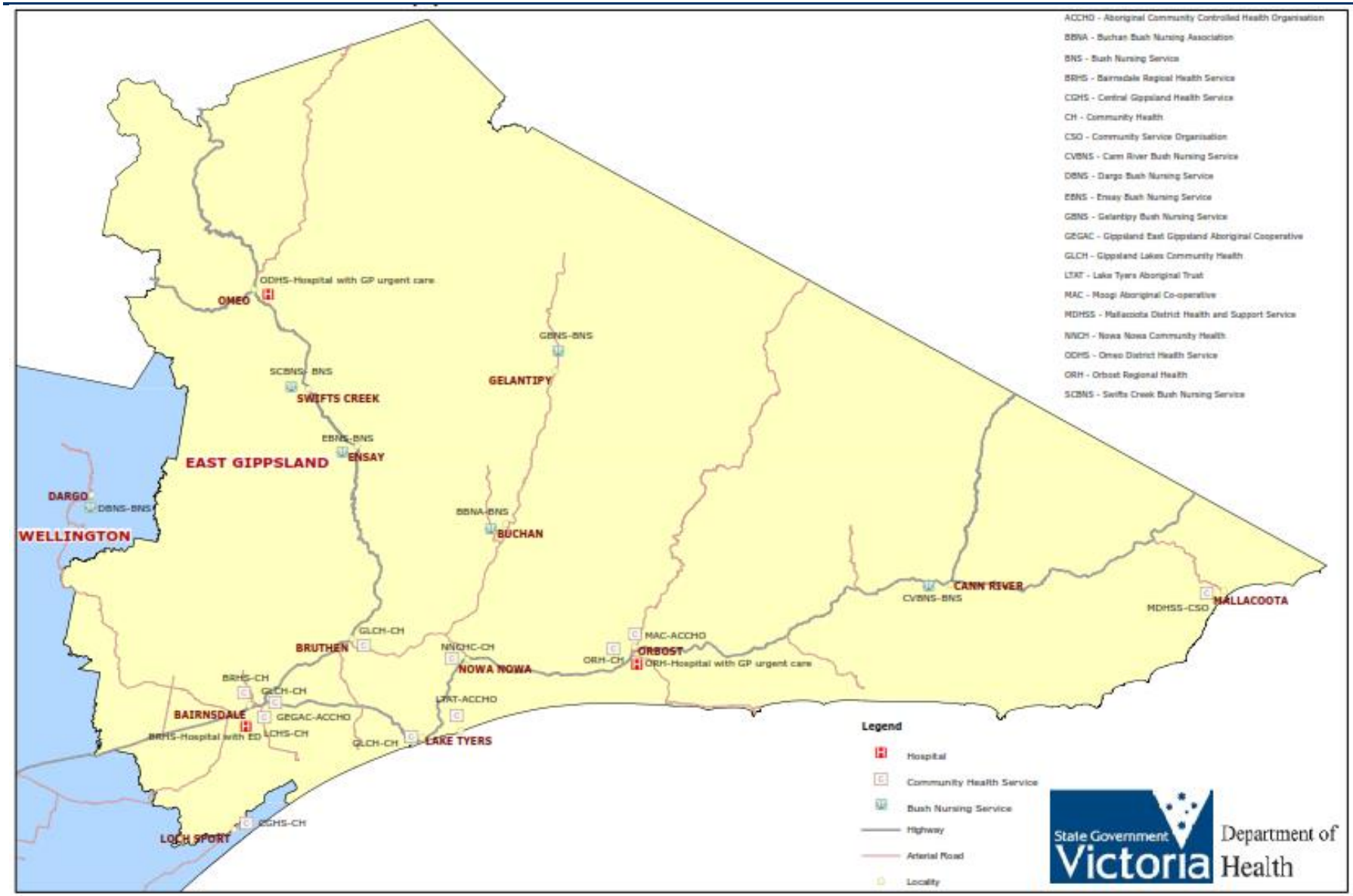

Figure 4-1 Health services in the East Gippsland Catchment (State of Victoria, 2010)

4.3.4 Housing and Accommodation

In Lakes Entrance, approximately 30% of the population live in rental accommodation, while the remaining 70% own their property (Real Estate Investor Australia, 2013). The median listing price for houses in Lake Entrance is $349,000, for units is $305,000 and for townhouses is $489,000. Over the past 2 years, median prices have dropped by approximately 3% for houses and units and 7% for townhouses. The average time to sell a house or townhouse is 308 days, while the average unit takes 148 days to sell. Houses rent for an average of $260 per week, while units rent for $220 per week. The vacancy rate for rental properties is 1.31% (there are approximately 24 rental houses, townhouses and units currently available), and there are hundreds of properties currently listed for sale in Lakes Entrance (Real Estate Investor, Australia, 2013).

At the 2011 Census, there were 137 occupied private dwellings in Nowa Nowa and 80 in Bete Bolong, with the majority of dwellings being detached houses (no semi-detached houses, townhouses, flats or apartments were recorded). Approximately 15% of the population in Nowa Nowa and some 10% of Bete Bolong live in rental accommodation, while the remaining approximately 80% own their homes. The median house price in Nowa Nowa is $375,000 with a median price decrease of some 40% over the past 2 years (Real Estate Investor, 2013). In the past month, 5 properties in Nowa Nowa were listed on the market, of which 1 property was sold. Only 2 properties were listed in the past month in Bete Bolong, and there have been no recent home sales. Most homes were owned outright or owned with a mortgage with less than 20% in both areas. Weekly rent and mortgage repayments were significantly lower in Nowa Nowa than in Bete Bolong. Specifically, median rental prices in Nowa Nowa ($70/week) were less than half Bete Bolong ($200/week), while mortgage repayments were similarly lower in Nowa Nowa ($867/week) compared to Bete Bolong ($1500/week).

A generally accepted measure of housing affordability is that housing costs should not consume more than 30% of a household's income. At any proportion higher than 30%, housing may be considered unaffordable.[3] Based on the 2011 census, the proportion of households with rental payments that may be considered unaffordable was lower in Bete Bolong (3.9%) compared to Nowa Nowa (5.4%). However, for households with mortgage repayments, levels of housing affordability were consistent in both areas, with approximately 10% of households with repayments that may be considered unaffordable.

Table 4-4. Housing affordability in the study area and surrounding region.

Area	Median Weekly Rent ($)	Median Weekly Mortgage Repayments ($)	Rental payments: proportion of households where payments may be considered unaffordable	Mortgage payments: proportion of households where payments may be considered unaffordable
Bete Bolong State Suburb	200	1,500	3.9%	10.3%
Nowa Nowa	70	867	5.4%	10.5%

[3] Based on the Housing Industry Association's housing affordability index methodology:

http://economics.hia.com.au/media/Affordability%20Index%20Methodology.pdf. This figure is also used in the ABS census data.

Area	Median Weekly Rent ($)	Median Weekly Mortgage Repayments ($)	Rental payments: proportion of households where payments may be considered unaffordable	Mortgage payments: proportion of households where payments may be considered unaffordable
East Gippsland Shire	180	1,296	7.9%	7.1%
Victoria	277	1,700	9.1%	10.1%

4.4 Social and Health Infrastructure

In 2008, 75% of the population of East Gippsland reported that they felt that the area had "good facilities and services like shops, childcare, schools and libraries" (State of Victoria, 2010). A detailed evaluation of existing social and infrastructure in the study area is provided in Annex A and capacity issues are outlined below.

While some infrastructure and services are available locally in the immediate vicinity of Nowa Nowa and Wairewa, the closest "service towns", where more comprehensive services can be accessed are Lakes Entrance and Bairnsdale.

Children and Essential Health Services

Childcare and education facilities in the study area include a charity-funded kindergarten and government primary school in the immediate vicinity of Nowa Nowa and Wairewa (Plate 4-6). These are currently only able to cater to a relatively small population catchment of Nowa Nowa, Wairewa and Lake Tyers communities. Key issues associated with childcare services include:[4]

- Limited day care facilities
- Limited school-coordinated transport for after-school activities (primary and secondary school level)

Essential health services availability in the immediate vicinity of the mine site include the Nowa Nowa community Health Centre and a health and childrens' services clinic for the aboriginal community in Lake Tyers. Given population projections for Lakes Entrance and District, improving essential health services is a key issue. Given the relatively large resident Aboriginal population, working with and responding to broader indigenous health needs is also an important consideration. Maternal and child health services in the immediate vicinity of the Project are also limited to the Nowa Nowa community health centre, where a doctor is available on-site one day/week.

Bairnsdale Regional Hospital is the closest facility for higher order health services. Rapid response treatment of emergency needs (industrial, road accidents, etc) is currently constrained in the immediate vicinity of the mine site.

[4] As identified in the Nowa Nowa, Wairewa and Lake Tyers Aboriginal Trust Community Plan 2012 -16

Sports and Recreation Planning and Maintenance

Sports and recreation facilities in the study area include Nowa Nowa Recreation Reserve, Nowa Nowa Mountain Bike Park and local tennis courts in Wairewa. Funding for sport and recreation facilities across East Gippsland Shire are coordinated and managed through the Councils' Parks and Open Space Development unit. Council has committed to funding a range of development and open space upgrades over 2013-2017 throughout the Shire.

At the local level, issues and interests identified through the community planning process for Nowa Nowa, Wairewa and Lake Tyers include:

- Need to develop a Masterplan for Nowa Nowa Recreation Reserve;
- Need for maintenance improvements for the bike track network;
- Nowa Nowa tennis court maintenance;
- Increased organised sporting activities for school children.

Overall, East Gippsland Shire Council is responsible for the management of the local road network, including sealed and unsealed roads, bridges, footpaths, bicycle paths and other related physical assets. The Councils' Asset Renewal program is largely focused on the Shires' bridge and road network.[5]

At the local level, capacity issues identified through the community planning process were focused on supporting safe pedestrian and vehicular access. Specifically:

- Need to improve and develop existing footpath network and safe access points in the township and at school;
- Maintenance of road reserves to improve visibility at highway intersections;
- Need to improve essential services to support older residents living in community.

Needs of an Ageing Population

Supporting the needs of an aging population is an important consideration for Lakes Entrance and District. These needs extend beyond improving essential health services, to retirement housing options and associated transport services. As detailed in Section 4.3.2, East Gippsland Council population projections to 2026 forecast the most significant increases (in the resident population of Lakes Entrance and District) in the combined age bracket of 70-84 year olds.

Accordingly, there will be an increased need for variable retirement housing options, ranging from independent living units to low and high care accommodation options. Support transport services, including neighbourhood bus shuttle services and accessible public transport will likely also need to be a consideration in social infrastructure planning for the District.

Coastal Activities and Seasonality Issues

Visitation to East Gippsland peaks in the summer, with the Shire seeing significantly higher summer period visitation relative to regional Victoria and significantly lower winter period visitation. The region is actively seeking to promote-year round tourism as seasonality issues make it difficult to recruit and retain trained staff (refer Section 4.5.3).

This is consistent at the Lakes Entrance and District-level, where coastal activities include boating, kayaking, water-skiing and shore-based recreational fishing. Key capacity issues include[6]:

[5] http://www.eastgippsland.vic.gov.au/Services/Council_Property_Management

- Limited boating infrastructure (identified need for improved access to fuelling facilities and pump out facilities); and
- Lack of regulation on boating speed limits on the Gippsland Lakes (BECA 2008).

4.5 Tourism and Recreation

Tourism is a growing sector in East Gippsland, with the Ramsar listed wetlands, lakes, forests, rivers and the Alps key attractions. Hikers and cyclists are attracted to the East Gippsland Rail Trail which follows the disused Bairnsdale-Orbost railway, passing through Nowa Nowa.

Regional tourist sites are provided in Figure 4-4. There are no designated recreation areas within or near to the mine site. Downstream of the mine site, Lake Tyers is an important recreational fisheries reserve. The Lake Tyers Forest Park which extends to Mount Nowa Nowa is a destination for shore-based activities including bushwalking and camping.

East Gippsland is classified as the Lakes Tourism Region (TR), according to Tourism Victoria's campaign region boundaries, with data focused on the townships of Bairnsdale, Lakes Entrance, Orbost, Paynesville and the villages between Bruthen to Omeo.[7] East Gippsland Shire is comprised of four tourism sub-regions, each with its own thematic tourism focus. The study area is located at the junction of three Tourist Regions - Great Alpine Road Region, Gippsland Lakes and Snowy River Country regions with the most significant nearby tourist attractions of Lakes Entrance and Lake Tyers and Nowa Nowa and Wairewa located within the Gippsland Lakes Region (Figure 4-3).

7 Tourism Regions (TRs) are constructed from allocations of Statistical Area 2 (SA2s) and as a result have changed from the 2006 Census. For some TRs, including Lakes TR, changes are minimal and the TR is consistent with the LGA boundary.

Figure 4-2 Regional tourist sites

Figure 4-3 East Gippsland Tourist Region Boundaries (East Gippsland Victoria 2013)

4.5.1 Tourist Profile

East Gippsland has traditionally been competitive in attracting the 'Conventional Family Life (CFL) segment' – categorised as a lower yield, long stay, single destination market, attracted by camping, fishing and river or beach activities.[8] East Gippsland also attracts a significant car touring market, comprised of both domestic and international visitors, on trips ranging from 'short tours' (1 week) to 'grand tourers' (1 – 6 months).

In 2012, East Gippsland recorded 586,000 day trip visitors and 608,000 overnight visitors (an increase of 17% from the previous year). A majority of visitors were from other parts of Victoria (approximately 80%) or Australia (primarily New South Wales), with only 26,000 being international tourists (East Gippsland, 2013). International tourists were primarily from the UK and Germany. The most common reason of visit for both day trip and overnight visitors to East Gippsland was 'Holiday or Leisure' (approximately 60%) in 2012, followed by 'Visiting Friends/Relatives' (about 30%).

Of domestic visitors, approximately 50% of visitors were between 45 and 64 years of age, while 20% were over 65 years. International visitors tended to be slightly younger with almost 50% being between 25 and 44 years of age and 25% being between 15 and 24 years.

4.5.2 Accommodation, Attractions and Activities

There are a total of 23 accommodation establishments in the region, comprised of five (5) hotels/resorts, fifteen (15) motels, private hotels/guesthouses and three (3) serviced apartments (ABS 2012). Collectively, these account for 398 rooms and 1,137 bed spaces in total (ABS 2012). Further, 18% of residential dwellings in East Gippsland (or 4,027 dwellings) are considered holiday homes. The majority of tourism establishments are concentrated in Lakes Entrance and Bairnsdale, with accommodation in Nowa Nowa limited to one (1) motel and two (2) caravan parks. In 2012, the room occupancy rate in the region was 46% (down 5% from the previous year) (East Gippsland, 2013).

Attractions of the LGA include its nine (9) national parks, four (4) marine national parks, and various state forest drives and walks – including food and wine themed trails.

Regional arts events include the Creative Gippsland Arts Festival, Bruthen Blues & Arts Festival, and various farmers markets. Sports events of the Shire are generally water-based, including paddling, fishing and power boat racing competitions.

In Nowa Nowa, visitors are attracted by natural amenity values – hikers and cyclists are attracted to local trails while the Lake Tyers Forest Park which extends to Mount Nowa Nowa is a destination for bushwalking and camping. Various cycling and walking tracks have been upgraded and extended in recent years, through state and federal funding programs. Organised events and festivals in Nowa Nowa are somewhat limited – although there is a growing local arts movement, with the township and the region hosting various local arts events.[9]

[8] Tourism Victoria segments the national market in a number of ways - the 'Roy Morgan' Value Segments in particular have been used by Tourism Victoria to distinguish markets with the highest yield potential and to summarise their holiday needs.

[9] Events include the Nowa Nowa Nudes Art Show and the regional 'Froute' - an East Gippsland Arts Alliance project.

4.5.3 Seasonality of Visitation

Visitation to East Gippsland (including the Gippsland Lakes region) is highly seasonal and peaks in summer. In the Gippsland Lakes region, the average length of stay over October - December 2012 was 1.5 nights (ABS 2012). Occupancy rates for the December quarter were highest in Lakes Entrance (59%) and lowest in Bairnsdale (35%) (ABS 2012). Coastal camping and caravan park options are also popular in the Gippsland Lakes region with peak visitation largely associated with summer holiday periods.

4.5.4 Recreational Activities

Recreational activities in the East Gippsland Shire vary with the geography of the region – from alpine walks and skiing in the mountains areas, to driving, cycling, motor biking and horse riding throughout the Shire and water-based activities on the inland lakes and along the coast. The Gippsland Lakes region is comprised of a network of inland waterways extending from the hinterland to the coast. Yachting, kayaking, kite-boarding and water-skiing are popular activities along the inland waterways that culminate in Gippsland Lakes Coastal Park. Analysis undertaken by the Gippsland Coastal Board found that the most popular destinations for recreational boat users included Loch Sport, Paynesville, Metung, Lakes Entrance, Bunga Arm and McLennan Strait.[10]

The Gippsland Lakes region is the largest recreational fishery in Victoria for black bream (*Acanthopagrus butcheri*) producing between 20-50% of the total recreational bream catch in Victoria (DPI 2010).[11] Other fish species targeted by recreational fishers include estuary perch, flathead, snapper, whiting and squid, as well as prawns (DPI 2010). Lake Tyers Beach is an important recreational fisheries reserve and is a popular fishing destination year round for Gippsland residents. The Lake is also popular through the summer months for anglers visiting from other parts of Victoria as well as interstate.

The Gippsland Lakes region promotes a range of cycling, walking and horse-riding trails, linking to broader routes through the East Gippsland Shire. The East Gippsland Rail Trail is a recreational and conservation reserve, running from Bairnsdale to Orbost, along the disused Bairnsdale-Orbost railway. A track connects to the Gippsland Lakes Discovery Trail, which retraces the route of a historic rail tramway between Bairnsdale and Lakes Entrance. The trail crosses Boggy Creek and Ironstone Creek, passing through Nowa Nowa, before extending on-road to Lakes Entrance. Destination Gippsland has identified walks of interest through broader Gippsland –including the 'Nowa Nowa Walk' which includes various trails along the edge of Lake Tyers.

Nowa Nowa is home to one (1) dedicated mountain bike park, located approximately 1 km north of Nowa Nowa township, the park includes 35km of trails (20 km of mountain bike trails and 15 km of dual purpose walking and cycling tracks).

[10] A recreational boat user survey was sent to 1,345 recreational boaters. 152 responses were received. This provided a qualitative analysis of boat user aspirations and demands for boating infrastructure on the Gippsland Lakes.

[11] http://www.gippslandlakes.net.au/wp-content/uploads/2013/04/Theme-21.pdf

4.5.5 Capacity for Growth and Income Generation

In 2012, there were 1,504 jobs in tourism in East Gippsland, and tourist expenditure was approximately $307 million. Analysis undertaken for East Gippsland's Strategic Tourism Plan Report identified that the Shire is seeing a progression towards higher quality and niche accommodation and experiences (i.e. backpacker options, cultural tours) associated with shorter breaks from metropolitan centres, and increased competition within the traditional holiday market. The report identified the following target market segments, listed in order of projected capacity for growth:

1. *Short break (1-3 nights)*: identified as a key growth market, with high-yielding inner city residents; Princes Highway road improvements and Gippsland Lakes infrastructure investment identified as important to support growth in this segment.
2. *Beach Holiday or Getaway:* classic beach holiday segment, with strong repeat visitation; Infrastructure development, including boating infrastructure, identified as important to support growth in this segment.
3. *Big Tour:* up to two weeks touring, multi-destination stays mostly by car but also includes coach trips
4. *Small Tour:* up to one week touring, comparatively small domestic segment but growth prospects associated with aging population
5. *Day Trip:* accounts for close to 40% of all Gippsland visitors in 2004
6. *Special Events & meetings:* up to 1 week away for festivals, conferences, sports events; conference & meetings; identified as a growing opportunity with an initial focus required on facility investment
7. *Visiting Friends & Relatives:* low cost holiday

Plate 4-1 Nowa Nowa township

Plate 4-2 Houses and farming land at Wairewa

Plate 4-3 Boat ramp No.2, Lake Tyers (Ward 2013)

Plate 4-4 Cycling near Mt Nowa Nowa (Nowa Nowa Arts Group 2013)

Plate 4-5 Nowa Nowa railway yards, circa 1915 (Museum Victoria 2013)

Plate 4-6 Nowa Nowa Primary School, Junior Landcare Project (Junior Landcare 2013)

5 Evaluation of Potential Project Impacts and Opportunities

A risk assessment approach was used to identify and rank the potential socio-economic and health effects resulting from the development of the Project. If managed appropriately, the Project has the potential to significantly support broad based growth in the local economy, through civic infrastructure support and the provision of employment opportunities for local communities. Accordingly, economic development, employment and health are considered the most significant potential effects, followed by tourism/recreation considerations.

5.1 Evaluation Matrix

A risk evaluation was undertaken of the potential socio-economic and health effects and benefits of the Project (Table 5-1). The methodology used for the risk evaluation is described in Section 2.3. Key risks and opportunities were identified covering each of the following aspects:

- Social aspects:
  - General social management risks;
  - Demographics and housing;
  - Amenity;
  - Land use; and
  - Cultural heritage.
- Economic aspects:
  - Economic development and employment; and
  - Tourism.
- Public health and safety.

Cultural heritage aspects of the Project are discussed in the ***Aboriginal Cultural Heritage Management Plan Interim Report*** (EES Referral Attachment 10) and are therefore not covered in detail in this report.

Table 5-1 Evaluation of potential socio-economic and health risks

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
Social Risks and Aspects											
General Social Management	Lack of understanding among local communities regarding potential impacts and benefits of mine	Construction	Lack of adequate engagement and disclosure with local communities	Stakeholder Engagement Plan	2	3	Medium	Establishment of information points. Disclosure of Project information and stakeholder engagement as per the Stakeholder Engagement Plan.	1	2	Low
		Operations			2	3	Medium		1	2	Low
		Closure			2	3	Medium		1	2	Low
	Community dissatisfaction with complaints and feedback process	Construction	Project does not respond adequately or quickly enough to complaints; redress / response is not communicated to community; Residents feel that the Project is not listening.	Stakeholder Engagement Plan; Complaints and Feedback Mechanism	2	3	Medium	Regular engagement to identify community attitudes and expectations and determine the effectiveness of the complaints and feedback mechanism	1	3	Low
		Operations									
		Closure									
	Community dissatisfaction with general environmental management of the mine	Construction	Environmental management program not properly implemented; Poor stakeholder engagement;	Design of Project to minimise environmental effects; Stakeholder Engagement Plan	2	2	Low	EMP implementation over Project life, Ongoing consultation and management of complaints / feedback, environmental monitoring	2	2	Low
		Operations									

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
		Closure	Management program does not allow early identification of issues.	Stakeholder Engagement Plan	2	2	Low	Development of Rehabilitation and Closure Plan in consultation with community. Complaints and feedback mechanism; Ongoing stakeholder engagement	1	2	Low
Demographics and housing	Detrimental changes to population dynamics, networks and fluctuating demand for population-based services	Construction	Minor population growth expected in Nowa Nowa and Lakes Entrance	No Project accommodation camp	3	2	Medium	Ongoing stakeholder engagement; Project support for community activities and participation in local business networks	2	2	Low
		Operations			3	2	Medium		2	2	Low
		Closure	Population decline as mine employees move elsewhere for work.		4	2	Medium		2	2	Low
	Detrimental changes to housing demand and house prices for prospective buyers and rental tenants.	Construction	Rental prices may increase as demand for short-term housing increases	No Project accommodation camp	2	2	Low	Ongoing consultation and management of complaints / feedback	2	2	Low
		Operations	As demand increases, property prices may increase		2	2	Low		2	2	Low
		Closure	House prices may decrease in the short term as a large		2	2	Low		2	2	Low

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
			number of houses enter the market at the same time								
Amenity	Community dissatisfaction due to increased traffic (and associated, noise, dust and exhaust) along route and at transport depot.	Construction	128 light vehicles and 6 heavy vehicles added to the road per day.	Mine site located over 3 km from nearest residences and all main access roads to site approved for heavy vehicle use.	3	2	Medium	Complaints and feedback mechanism; ongoing stakeholder engagement; environmental mitigation measures (e.g. dust suppression at mine site)	3	2	Medium
		Operations	216 light vehicles and 368 heavy vehicles added to the road per day; trucks at transport depot.	Route by-passes most residential areas. Use of Princess Highway. Placement of depot away from residential areas.	3	3	Medium		3	3	Medium
		Closure	Decrease in road activity, with approximately 600 vehicles per day removed from the road.	NA	2	2	Low		2	2	Low
	Significant adverse effects on downstream water use - recreation and tourism	Construction	Run-off from Project activities, including pit dewatering, waste dumps and low grade stockpile resulting in increased turbidity and other water	Project designed to minimise potential impacts on water quality and hydrology (see above), Environmental Protection Act; EPBC Act; Ramsar Convention; Water regulations (see above)	2	3	Medium	Environmental monitoring program; Ongoing community engagement; Complaints and feedback mechanism; Development of Rehabilitation and Closure Plan in	2	3	Medium
		Operations			2	3	Medium		2	3	Medium

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
		Closure	quality impacts downstream		2	3	Medium	consultation with stakeholders	2	3	Medium
	Light pollution causing nuisance impacts for local residents at night time.	Construction	24-hour operations resulting in light pollution at the pit and process facilities.	As currently designed, there are no residences or scenic areas with direct sight lines to the Project	1	2	Low	Ongoing community engagement; Complaints and feedback mechanism	1	2	Low
		Operations			1	2	Low		1	2	Low
		Closure	NA	NA	NA	NA	NA	NA	NA	NA	NA
	High visual impact of mine, resulting in adverse impacts on tourism and amenity for local communities	Construction	Land clearance and construction of Project facilities.	As currently designed, there are no residences or scenic areas with direct sight lines to the Project. Progressive revegetation legislated.	1	2	Low	Monitoring of revegetation; complaints and feedback mechanism	1	2	Low
		Operations			1	2	Low		1	2	Low
		Closure			1	2	Low		1	2	Low
Land Use	Impact on residential land forcing relocation of residents	Construction	None	Project designed to avoid impact on residential areas	NA	NA	NA	NA	NA	NA	NA
		Operations	None		NA	NA	NA	NA	NA	NA	NA
		Closure	None		NA	NA	NA	NA	NA	NA	NA
	Adverse impact on recreational areas and	Construction	No known designated recreational areas will be affected; 4 apiaries may require	Project designed to avoid impact on designated recreational areas	2	1	Low	Ongoing stakeholder engagement; complaints and feedback mechanism	2	1	Low
		Operations			2	1	Low		2	1	Low

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
	other use areas, including apiaries		relocation								
		Closure	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cultural Heritage	Impact on cultural heritage site(s)	Construction	One Aboriginal site is expected to be directly impacted by mine access road. Land disturbance and inappropriate cultural heritage management, Lack of implementation of chance find procedures, Increased access to areas of cultural heritage significance.	CHMP completed prior to construction. Mine footprint minimised. Ensure compliance with the Aboriginal Heritage Act 2006 and its Aboriginal Heritage Regulations 2007.	5	3	High	Minimisation of land disturbance, Implement Chance Find Procedure, Staff education and awareness programs.	5	3	High
		Operations			2	3	Medium		1	2	Low
		Closure	Increased access to areas of cultural heritage significance.		2	1	Low	Stakeholder engagement regarding closure criteria for access tracks.	1	1	Low
	Stakeholder	Construction	Lack of agreed	CHMP completed prior to	1	2	Low	Complaints and feedback	1	1	Low

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
	dissatisfaction due to impacts on cultural heritage site(s)	Operations	CHMP, lack of community understanding of cultural heritage management process.	construction. Ensure compliance with the Aboriginal Heritage Act 2006 and its Aboriginal Heritage Regulations 2007.	1	2	Low	mechanism, Monitoring of implementation of CHMP, Ongoing engagement.	1	1	Low
		Closure			1	2	Low		1	1	Low
Economic Risks and Aspects											
Economic development and employment	Changes to unemployment rates in the vicinity of the Project	Construction	37 full-time equivalent employees and contractors, with a peak manning number of 70. Plus spin-off jobs.	No onsite accommodation. Employees required to lived locally.	4	4	High	Complaints and feedback mechanism, Ongoing engagement; participation in local business networks	4	4	High
		Operations	120 full-time equivalent jobs and between 120 and 240 spin-off jobs created by the Project		4	4	High		4	4	High
		Closure	Reduction in employment opportunities at closure	NA	4	3	High		3	3	Medium

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
	Changes in consumer activity affecting local businesses	Construction	Increased consumer activity and increased demand for services driving growth of local businesses.	No onsite accommodation. Employees required to lived locally.	4	4	High	Complaints and feedback mechanism, Ongoing engagement.	4	4	High
		Operations			4	4	High		4	4	High
		Closure	Decreased consumer activity and demand for services resulting in general slow down of the local economy	NA	4	3	High		3	3	Medium
	Ongoing viability of SEFE wharf and Port of Eden	Construction	Use of the SEFE wharf will ensure that it remains operational saving direct and spin-off jobs in Eden and further justifying Masterplan spending	Use the SEFE Wharf at Port of Eden	4	4	High		4	4	High
		Operations			4	4	High		4	4	High
		Closure	Reduction in use of the SEFE wharf at closure		3	3	Medium		3	3	Medium
	Failure to meet community expectations	Construction	Increase in demand for food and other resources cause inflation, Sourcing of	Project employment requirements. Project requirement for procurement of goods and services	3	3	Medium	Ongoing stakeholder engagement; Project support for community activities and participation	2	3	Medium
		Operations			2	2	Low		2	2	Low

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
	regarding economic improvement for region	Closure	goods and services from other areas, real or perceived lack of employment and training opportunities.	NA	1	1	Low	in local business networks; complaints and feedback mechanism	1	1	Low
Tourism	Community investment and improved services leading to increased tourism.	Construction	Improved services associated with improved economic conditions and Government income resulting from the Project will increase the capacity of the area to cater to tourists	NA	3	3	Medium	Ongoing stakeholder engagement	3	3	Medium
		Operations		NA	3	3	Medium		3	3	Medium
		Closure		NA	3	3	Medium		3	3	Medium
	Adverse impact on tourism due to increased transportation	Construction	See 'Amenity' above	See 'Amenity' above	2	2	Low	See 'Amenity' above	2	2	Low
		Operations			2	2	Low		2	2	Low
		Closure			2	2	Low		2	2	Low
	Adverse impact on tourism due to presence of mine site	Construction	See 'Amenity' above	See 'Amenity' above	1	2	Low	See 'Amenity' above	1	2	Low
		Operations			1	2	Low		1	2	Low
		Closure			1	2	Low		1	2	Low

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
Public Health and Safety Risks and Aspects											
Public Health and Safety	Increased road accidents due to increase traffic on Project access routes	Construction	128 light vehicles and 6 heavy vehicles added to the road per day.	Upgrade of intersection of mine access road and Bruthen-Buchan Road. Legislative requirements.	4	4	High	Driver training and enforced 'Driver Code of Behaviour'	3	4	Medium
		Operations	216 light vehicles and 368 heavy vehicles added to the road per day.		4	4	High		3	4	Medium
		Closure	Decrease in road activity, with approximately 600 vehicles per day removed from the road.	NA	NA	NA	NA	NA	NA	NA	NA
	Improper management of explosives leading to incident / security breach	Construction	Improper storage and/or handling of explosives	Location of mine site over 3 km from nearest residences. Legislative requirements for storage of explosives. Location of access road to Magazine Storage Facility controlled by gate.	1	4	Medium	Restricted access to site; Safety education and training	1	4	Medium
		Operations									
		Closure	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Health and	Construction	May be due to lack of	Risk will be minimised by the	1	4	Medium	Restrictions on entry to	1	4	Medium

Risk / Aspect		Project Phase	Likely Primary Causes (due to Project)	Key Controls	Pre Additional Management/Mitigation Measures			Additional Key Management / Mitigation Measures	Post Additional Management/Mitigation Measures		
					Likelihood	Consequence	Risk Ranking		Likelihood	Consequence	Risk Ranking
	safety risk to public gaining unauthorised access to Project facilities	Operations	appropriate signage, fencing or lack of community safety awareness programs.	fairly remote nature of the site. Access to site will be restricted.				mine at gate, Signage, Community safety awareness programs, Provision of on site medical services.			
		Closure		Proper design of waste rock dumps and low grade storage piles; Proper closure and decommissioning of pit and infrastructure.	2	4	Medium	Community safety awareness; signage	2	4	Medium
	Physical Injury/death from fly rock	Construction	Inappropriate blasting procedures. Lack of mitigation measures for flyrock. Lack of appropriate signage, fencing or lack appropriate management of flyrock exclusion zone.	Location of mine site over 3 km from nearest residences. Legislative requirements for blasting.	1	4	Medium	Development and implementation of Blasting Management Plan; Montoring.	1	4	Medium
		Operations			1	4	Medium		1	4	Medium
		Closure	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Regional Economic Development and Employment

The Project will generate economic benefits in local communities, Lakes Entrance and District, East Gippsland and the State of Victoria. Direct benefits include:

- Employment:
    - The Project will provide 120 FTE jobs over 8-10 years of operations. It is estimated that for every job directly created by the mine, a further 1 – 2 indirect jobs will be created in the wider economy – most of these in the local area (Parliament of Victoria, 2012). This equates to an additional 120 to 240 jobs within the local and regional economy. Up to 70 jobs would also be created during the 8-10 month construction phase.
    - It is expected that the majority of the workforce will be sourced locally, and as no accommodation will be constructed for the Project (no FIFO workforce), any employees will have to live locally.
    - The Project will ensure that accessible recruitment pathways for Indigenous community members are utilised.
    - The Project will undertake specialised training programs for Indigenous staff to improve employee retention.
- Procurement of goods and services:
    - Mining projects tend to spend 70-80% of their total expenditure in the State where the Project is located (Parliament of Victoria, 2012). While the majority of this spending would be associated with the development of the mine site in Victoria, a proportion would also be in NSW due to the location of the Port.
    - The Project has committed to sourcing goods and services locally as far as reasonably possible.
- Injection of income into the local, regional and State economy (EIL 2013):
    - Total capital investment for the Project in the order of $37 million (including Victorian and NSW expenditure).
    - Taxes and mineral royalties from life of mine revenues of over $800 million.
    - Direct spending of up to $700 Million over an 8-10 year period (based on FOB cost of around $70/t).
    - State and local Government budgets will receive financial inflows from taxes and royalties associated with the Project.
- Maintaining the viability of the South East Fibre Exports (SEFE) wharf at the Port of Eden:
    - Potentially critical to maintaining existing wharf employment in Victoria and NSW in light of a downturn in the forestry industry.
    - Anecdotal evidence suggests that this may represent long term security for up to 700 direct and indirect jobs, including SEFE employees, logging contractors, truck drivers, and indirect positions which support the industry.

In-direct benefits from the development Project are also likely to be realised, including:

- Improving Victoria's image in the mining industry, thereby encouraging exploration investment in the State. Victoria is currently seen as an unattractive place for exploration investment because there is the perception that it is generally unwelcoming to the mining industry. Investors believe that it is too difficult to move a project from exploration into development (Parliament of Victoria, 2012). "No new mines coming on stream" was identified as a key part of the 'vicious cycle' preventing mineral investment in Victoria.
- Encouraging greenfield exploration and development. Though greenfield exploration and development is recognised as important to sustain mineral production over the long-term, there is currently a trend of declining investment in this area – particularly in Victoria (Parliament of Victoria, 2012).
- Increase Victoria's share in the benefits of the resources boom. The resources boom has led to a 'two-speed' economy in Australia, where resource-rich states have sustained strong economic growth and low unemployment, while economic conditions have remained relatively weaker in the non-resource states, such as Victoria. The development of resource projects, then, would allow Victoria to increase its share in Australia's overall economic growth.

Communities likely to benefit the most from the Project include Nowa Nowa, Wairewa, Lakes Entrance and the town where the transportation depot is located.

Detrimental impacts on economic activities may include:

- The potential for local businesses to lose staff to the Project, which is likely to pay higher wages; and
- Requirement for relocation of some apiary sites in the vicinity of the Project (four have been identified within 500 m of the mine footprint).

These impacts are not considered significant in the context of the potential socioeconomic benefits of the Project.

5.3 Community Demographics, Housing and Services

As there will be no onsite accommodation for the Project, the workforce will be required to live locally. Given the recent decline in the forestry industry and associated unemployment, there are likely to be a sufficient number of skilled local residents available to meet a majority of the Project's employment needs. The provision of skilled employment in the study area also has the potential to encourage young people to stay in the region, rather than leaving to seek employment elsewhere.

Employment of some non-locals is likely to be required, particularly for specialist and professional roles. Non-local employees will be expected to live locally, as the Project does not include any proposal for accommodation facilities. As a result, the Project will likely result in some minor population growth in the local area, particularly in Nowa Nowa and Lakes Entrance.

Current information on housing indicates that there is only limited capacity for growth in Nowa Nowa (few houses for sale), however there is significant capacity to cope with an increased population in Lakes Entrance (sufficient supply currently available on the market).

Increased demand in Nowa Nowa may result in increased house and rental prices, as there is only limited supply, but given the supply in Lakes Entrance, the minor increase in demand created by the Project is unlikely to significantly affect house and rental prices.

The required changes to population based public services are also likely to be minor. If families moving to the area require child care, this may be difficult to find in the short-term, but in the longer term, additional child care options are likely to arise to meet this demand. Project investment and support of community services, as well as tax revenues from the Project being used to further develop social services, may result in improved social services in the vicinity of the mine site.

5.4 Community Health and Safety

The most significant potential exposure of communities to health or safety hazards associated with the Project will be the increased risk of traffic accidents associated with the increase in vehicle traffic, including heavy vehicles. If managed effectively, this risk is likely to be low as the transport route for the Project is approved for B-Double use, managed by VicRoads and by-passes most residential areas. Risks associated with road traffic are addressed in the ***Traffic Impact Assessment*** (EES Referral Attachment 7).

Other potential community health and safety risks and effects (e.g. associated with air quality, water quality, unauthorised access to Project facilities and hazardous materials) are expected to be suitably managed through Project design. Potential air quality effects of the Project are considered in the ***Air Quality, Noise and Vibration Study and Monitoring Plan*** (EES Referral Attachment 13). The mine site occurs approximately 15 km upstream of Lake Tyers, which is a popular recreational area. Protection of downstream water quality to ensure no significant impacts on this area will therefore need to be a key management focus of the Project.

5.5 Tourism and Recreation

Tourism is considered an important growth sector in the Project region and is dependent on the nature and conservation values in the region, particularly around Lake Tyers.

As currently designed, the Project is unlikely to have any significant impact on key nature and conservation values in designated recreational and tourist areas. Recreational use of the mine site area and downstream is further discussed in the ***Land and Water Use Study*** (EES Referral Attachment 11). Potential effects on conservation values are also considered in EES Referral Attachments 8 and 9.

5.6 Amenity

Potential amenity impacts include impact on air quality and noise, visual amenity, traffic and water quality.

Air Quality and Noise

A separate ***Air Quality, Noise and Vibration Study and Monitoring Plan*** (EES Referral Attachment 13) has been prepared for the Project. The results of the study indicate that there is unlikely to be any significant generation of nuisance dust, exhaust, noise or vibration resulting from the mine site at sensitive receptors such as residential properties or within the local townships.

Light Pollution

The Project is proposed to operate 24 hours per day, 7 days per week. As a result, light emissions from the operation during the night have the potential to be a nuisance to local residents. However, as there are no sensitive receptors (residences, tourist areas) with a direct sight line to the Project, there is not anticipated to be any significant impact from light pollution.

Visual Amenity

Visual impacts will vary over the life of the Project, with pre-construction and construction impacts primarily associated with land clearing, stockpiling of topsoil and spoil disposal, all of which will be progressively rehabilitated over time. Operations impacts will be primarily built infrastructure, the creation of the pit, waste rock dump and other stockpiles, which will remain permanent features over the life of the Project. Post-closure, most of the Project's built infrastructure is expected to be removed and other disturbed areas rehabilitated to minimise permanent disturbance to visual amenity.

There are no sensitive receptors (e.g. towns, tourist sites, scenic view points) with a direct view of the mine site. The Project is not anticipated to have a significant impact on the visual amenity of the local area or region.

Traffic

The potential increase in traffic volumes on the existing road network is assessed in the ***Traffic Impact Assessment*** (EES Referral Attachment 7). Trip generation and distribution calculations were undertaken for both the construction and operational phases of the project, and include workforce vehicles arriving to and departing the mine site. It is anticipated that the Project will result in a maximum increase of 128 light vehicles and 6 heavy vehicles per day on Project access routes during construction and a maximum of 216 light vehicles and 368 heavy vehicles per day during operations (assuming 1 Mt of product is exported in a given year). During operations, vehicle trips would be distributed between Victoria and New South Wales.

The ***Traffic Impact Assessment*** concludes that the existing road network is able to accommodate the increase in traffic attributable to the Project and that no upgrades are required, other than those proposed at the intersection of the mine access road and Bruthen-Buchan Road, and that amenity impacts can be appropriately managed through the implementation of a 'Truck Driver Code of Behaviour' (EES Referral Attachment 7). Further, the transportation route by-passes most residential areas further minimizing the impact of the increased traffic volumes.

Water Quality and Quantity

Management of downstream water quality and hydrology is an important component of overall environmental management of the Project, especially given the presence of Lake Tyers approximately 15 km downstream of the mine site, which is a popular recreational area due to its scenic and biodiversity values. Potential effects and management measures to minimise impact on water quality/hydrology are discussed in the ***Surface and Ground Water Baseline and Assessment*** (EES Referral Attachment 5).

5.7 Cumulative Effects

There are no large-scale existing or proposed industrial developments in close proximity to the mine site. Figure 5-1 below was prepared by the DPI (2013) and indicates the sizes and progress of major developments and operating projects in Victoria. Logging and sawmills are present in the surrounding area, but the Project is not anticipated to significantly affect the viability of the forestry industry (or vice versa).

The most significant potential cumulative impact of the Project is associated with the addition of vehicle traffic along Project access roads (i.e. during construction, the Project will add up to 128 light vehicles and 6 heavy vehicles per day and during operations, a maximum of 216 light vehicles and 368 heavy vehicles per day). The ***Traffic Impact Assessment*** found that the addition of Project vehicles to current traffic volumes is well within the design operational capacity of the roads (EES Referral Attachment 7). Safety risks associated with increased traffic volumes, particularly heavy vehicle traffic will need to be carefully managed. These risks and proposed management measures are discussed above and in the ***Traffic Impact Assessment***.

More broadly, the Project will add cumulatively to the socio-economic benefits associated with increased economic activity in East Gippsland Shire.

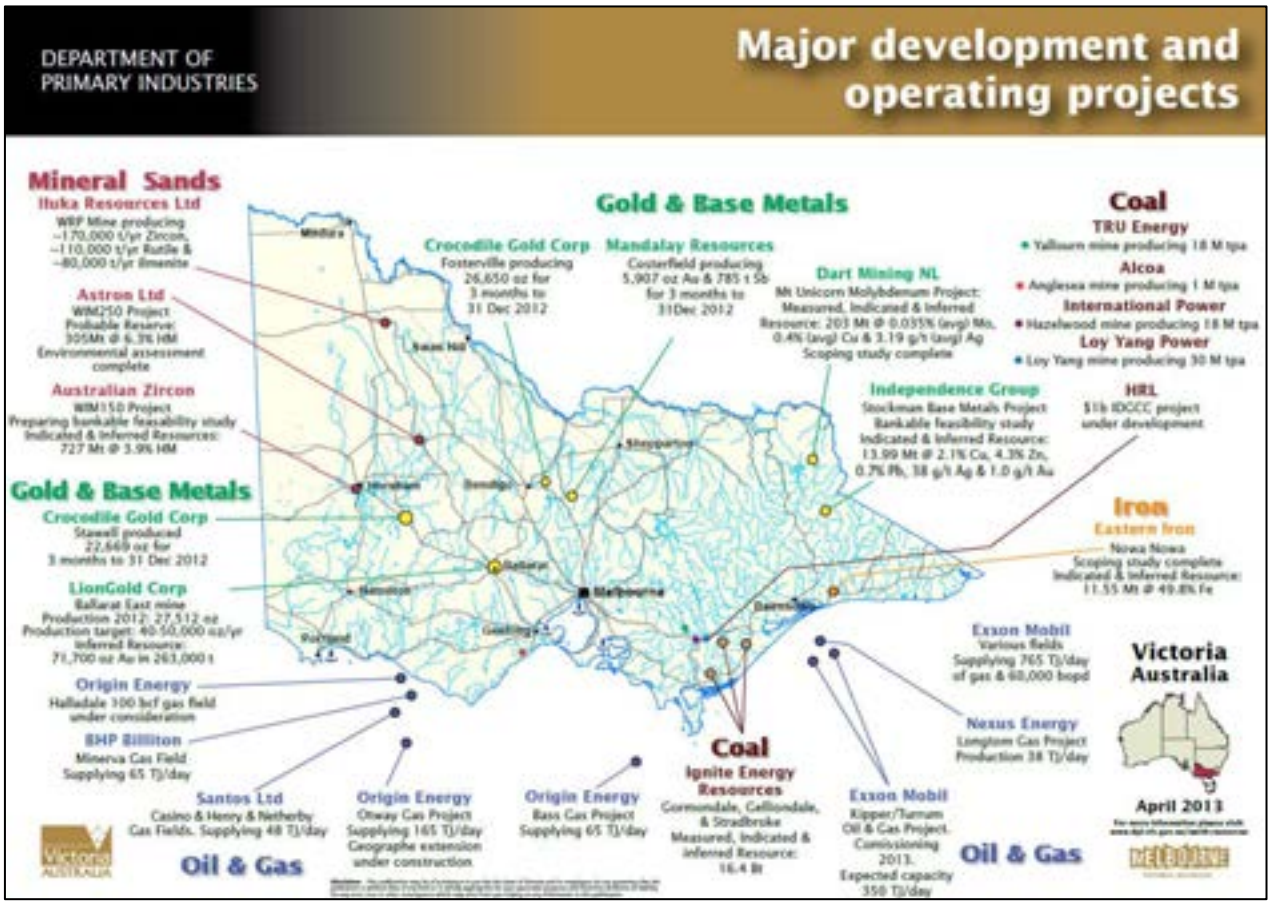

Figure 5-1 Major Development and Operating Projects in Victoria (DPI, 2013).

6 Management and Monitoring

This section outlines a socio-economic and health management and monitoring strategy for the Project consistent with relevant legislation and best practice for mining operations. The proposed measures will be incorporated into the *Environmental Management Plan* (EMP) for the Project.

Eastern Iron will also establish an Environmental Management System (EMS) for the Nowa Nowa Iron Project consistent with international standards of environmental management (e.g. ISO14001). This system will provide Eastern Iron with a procedural framework for implementing, achieving, reviewing and maintaining the Company's environmental and community policies and all environmental and social management targets.

Management of socio-economic and health impacts for the Project should be based on the following objectives:

- Avoid, minimise or mitigate adverse socio-economic, health and safety impacts;
- Maximise socio-economic and health benefits; and
- Maintain community support for the Project.

6.1 Social Management Program

Key management measures recommended to maximise benefits and / or minimise adverse impacts include:

- Develop and implement a social monitoring program (see Section 6.2);
- Develop and implement a Stakeholder Engagement Plan, including engagement with local communities and service providers;
- Provide employment opportunities for local residents including apprenticeships for young people;
- Provide training and skills development for local residents interested in seeking employment with the Project;
- Monitor housing conditions in the local area and aid employees to find suitable accommodation;
- Contribute to community development and social cohesion such as through sponsoring local events and involving the Company in business forums;
- Manage public health and safety risks in accordance with relevant legislation, design and operational procedures;
- Manage traffic in accordance with the measures outlined in the ***Traffic Impact Assessment*** (EES Referral Attachment 7);
- Implement appropriate management and mitigation measures to protect downstream water quality and hydrology; and
- Mine site lighting, vibration, air quality and noise should be managed and monitored as per standard Victorian regulations and guidelines.

6.2 Social Monitoring Program

As part of the social management strategy for the Project, monitoring will need to be used to identify and quantify the direct and indirect impacts of the Project on the surrounding community. Social monitoring will also ensure that existing management measures are effective, and will identify the need for improved or additional measures. Social impact monitoring should include the parameters as outlined in Table 6-1. Social monitoring during closure will need to be detailed as part of the Closure Plan.

A baseline for all social monitoring parameters should be established prior to the Construction Phase. Monitoring should then be conducted on a regular basis (at least every 2 years) and reported against the performance evaluation criteria.

Table 6-1 Social monitoring parameters.

Aspect	Impact Categories	Monitoring Parameters	Performance Evaluation Criteria
Employment / Economic development	Employment	Workforce/income statistics	Number of jobs provided. Proportion of workforce from local communities.
	Employee skills development	Number of staff completing different training / skills development programs.	Training opportunities provided to workforce.
	Local Businesses / Tourism	Attitudes of local business owners	Continued community support for the Project; community complaints and suggestions addressed.
Community health and safety	Accidents / injuries	Project related accidents / injuries	Number of incidents
	Air quality/Noise/Vibration	see Air Quality, Noise and Vibration Assessment (EES Referral Attachment 13)	see Air Quality, Noise and Vibration Assessment for assessment criteria
	Water quality	see Surface and Ground Water Baseline and Assessment (EES Referral Attachment 5)	see Surface and Ground Water Baseline and Assessment for assessment criteria
Amenity	Community attitudes	Community attitudes and expectations for Project	Continued community support for the Project; community complaints and suggestions addressed.
	Air quality / odour	No. of complaints / suggestions	
	Noise / Vibration		
	Traffic		
	Visual amenity		
Cultural Heritage	Cultural heritage sites and artefacts	Refer Aboriginal Cultural Heritage Management Plan (EES Referral Attachment 10)	Culturally significant sites and artefacts appropriately managed

6.3 Community Engagement

Ongoing community engagement will be critical for the success of the Project. Eastern Iron should ensure participation and dialogue with the affected communities and other stakeholders on both environmental and social aspects during all phases of mining activities. Stakeholders should be clearly informed about the potential impacts and socio-economic benefits of the Project.

A *Stakeholder Engagement Plan* will need to be developed for the Project, which sets out a plan and schedule for consulting with the local community, as well as identifying the process for considering community issues and concerns.

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Annex A
Evaluation of Social Services and Infrastructure

Annex A. Community/Social Infrastructure in the Study Area

Facility	Benchmark[12]	Existing Community
Early Learning Centres – Children's' Services		
Kindergarten (place)	1 place: 2.2 children aged 4 years (assumes 90% of demand is met by 1 dedicated Council preschool)	1 kindergarten – non-government funded (Save the Children); other early learning centres located in Bruthen, Lakes Entrance and Bairnsdale
Maternal and Child Health (session and place)	1 equivalent full-time nurse: 140 infants (0 year olds) Equivalent of 1 session: 14 infants (0 year olds)	1 Community Health Centre (open Monday-Friday) including maternal and child health services. 1 equivalent full-time community nurse; no ambulance services in the immediate vicinity of Nowa Nowa or Wairewa, with the closest services in Lakes Entrance and Orbost. The closest regional hospital is the Bairnsdale Regional Health Service hospital. Health and childrens services clinic coordinated by the Lake Tyers Aboriginal Trust centre for the aboriginal community in Lake Tyers
Long day child care (place)	1 place: 4.8 children aged 0-6	Childcare centre coordinated by the Lake Tyers Aboriginal Trust centre for the aboriginal community in Lake Tyers; closest services located in Lakes Entrance
Occasional care	1 place: 28 children aged 0-6	Childcare centre coordinated by the Lake Tyers Aboriginal Trust centre for the aboriginal community in Lake Tyers; closest services located in Lakes Entrance
Community Facilities		

[12] While benchmark ratios are intended for standard greenfield developments, ratios are intended to provide an indicative framework for the assessment of existing social infrastructure.

Facility	Benchmark[12]	Existing Community
Neighbourhood community centre or Community meeting room/hall	1 centre: 3,500-15,000 residents 1 room/hall: 6,000-10,000 residents	2 community halls - 1 in Nowa Nowa township and 1 in the Lake Tyers community
Youth space/facility	1 venue:1:20,000 residents	Not recorded locally
Cultural Facilities		
Centre based library	1 static library:30,000 residents	No local library or library services; closest facilities in Bairnsdale and Lakes Entrance
Community arts venue	1 venue:60,000 residents	Specific venue not recorded but active community that coordinates and participates in local and regional events (Nowa Nowa Arts Group)
Art Gallery	1: 30,000 150,000 residents	Growing number of small local galleries and SME's focused on promotion of arts in Regional Australia
Performing arts venue	1: 50,000-200,000 residents	Number of installation and multimedia projects funded by Regional Arts Victoria[13]; no performing arts-specific venue recorded
Civic/cultural space	1: 25,000 residents	Not recorded but number of installation and multimedia projects funded by Regional Arts Victoria[14]
Active Recreation Facilities		
Public Parks (district or sub-regional level)	1 park: 3,000+ residents (minimum 8 ha)	1 park – Nowa Nowa Recreational Reserve with limited maintenance of playground equipment (refer to Draft Nowa Nowa District Community Plan 2012-16)

[13] http://www.arts.vic.gov.au/Arts_in_Victoria/Arts_in_the_Community/Nowa_Nowa_Open_for_Inspection

[14] http://www.arts.vic.gov.au/Arts_in_Victoria/Arts_in_the_Community/Nowa_Nowa_Open_for_Inspection

Facility	Benchmark[12]	Existing Community
Multi-purpose sport fields (e.g. football, cricket, soccer)	1 field: 4,000-5,000 residents	1 x Nowa Nowa Mountain Bike Park; general sports fields not recorded; closest facilities in Lakes Entrance and Bairnsdale
Sport-specific courts (e.g. tennis, netball)	1 court: 3000 -7000 people	1 x Nowa Nowa Tennis Court, requiring maintenance, resurfacing and request for night-time lighting (refer Draft Nowa Nowa District Community Plan 2012-16)
Other facilities (e.g. indoor multi-purpose court, lawn bowls green, indoor aquatic/leisure centre)	1 green or 1 court: 10,000 people 1 aquatic/leisure centre: 60,000 residents	Not recorded locally; closest facilities in Lakes Entrance and Bairnsdale
Passive Open Space		
Passive space and informal parks	1ha: 1000 people Informal park within 500m of every household	Communities located adjacent to range of passive open space areas (forest and coastal reserves)
Local/neighbourhood park	1 park: 750-3,000 people; generally min of 1ha	1 park – Nowa Nowa Recreational Reserve with range of walks and trails(refer Draft Nowa Nowa District Community Plan 2012-16)
Playgrounds		
Playground	1 playground: 250 children aged 0-12 years	1 park - Nowa Nowa Recreational Reserve with limited maintenance of playground equipment (refer Draft Nowa Nowa District Community Plan 2012-16)
Education Facilities		
Government primary students Catholic primary students	55% of children aged 5-11 25% of children aged 5-11	1 Government primary school – Nowa Nowa Primary School, school caters for years prep to grade 6. Total enrolment of 30 students (43% boys and

Facility	Benchmark[12]	Existing Community
		57% girls).[15]
Government secondary students Catholic secondary students Independent school students	47% of children aged 12-17 25% of children aged 12-17 10% of children aged 12-17 \	None in local area; closest secondary school providers (Government, Catholic and/or Independent) located in Lakes Entrance, Orbost and Bairnsdale.

Source: assessment format based on Quantitative Analysis of Social/Community Infrastructure template provided in East Gippsland Shire Council Social Impact Assessment Guidelines (EGSC, 2010)

[15] http://traralgon.localnote.com.au/school/8634-nowa-nowa-primary-school