



**WorleyParsons  
Consulting**



**Queensland  
Government**

QUEENSLAND DEPARTMENT OF STATE DEVELOPMENT

# **Social Impact Assessment**

## **Abbot Point Growth Gateway Project**

301001-01956 - 00-EN-REP-00002

06 August 2015

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SOCIAL IMPACT ASSESSMENT  
ABBOT POINT GROWTH GATEWAY PROJECT

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**PROJECT 301001-01956 - SOCIAL IMPACT ASSESSMENT**

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## ABBREVIATIONS AND ACRONYMS

Abbreviation / Acronym	Description
ABS	Australian Bureau of Statistics
DIDO	Drive-In/Drive-Out
DMCP	Dredged material containment pond
DSD	Department of State Development
EIS	Environmental Impact Statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FIFO	Fly-In/Fly-Out
FTE	Full Time Equivalent
IBA	Indigenous Business Australia
ICN	Industry Capability Network
Mm <sup>3</sup>	Million cubic metres
MIW	Mackay, Isaac and Whitsunday
NQBP	North Queensland Bulk Ports Corporation
PER	Public Environment Report
QGSO	Queensland Government Statistician's Office
T0	Terminal 0
T1	Terminal 1
T2	Terminal 2
T3	Terminal 3
SA2	Statistical Area - Level 2
SDA	State Development Area



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Abbreviation / Acronym	Description
SIA	Social Impact Assessment
SSC	State Suburb
UNSECO	United Nations Education, Scientific and Cultural Organisation
Whitsunday LGA	Whitsunday Regional Council Local Government Area



## 1 INTRODUCTION

This Social Impact Assessment (SIA) has been developed for the Abbot Point Growth Gateway Project (the Project) proposed by the Queensland Department of State Development (DSD).

The Project aims to develop infrastructure to support development to expand the export capacity of the Port of Abbot Point. The Port of Abbot Point is located approximately 25km north of Bowen on the North Queensland coast.

The current Project relates to the development of infrastructure to support development of the planned Terminal 0 (T0). Dredging of berth pockets and arrival/departure apron is required to provide safe shipping access to the T0 offshore facility. The scope of the approved T0 project did not include dredging of the required berth pockets or apron areas.

This Project involves:

- Construction of onshore dredged material containment ponds (DMCPs) within the area previously allocated for the development of Terminal 2 (T2) and adjoining industrial land
- Capital dredging of approximately 1.1 million m<sup>3</sup> (Mm<sup>3</sup>) *in situ* volume of seabed for new berth pockets and ship apron areas required to support the development of T0
- Relocation of the dredged material to the DMCPs and the offshore discharge of return water via temporary pipeline infrastructure
- Ongoing management of the dredged material including its removal, treatment, and beneficial reuse within the port area and the Abbot Point State Development Area (SDA), where appropriate.

### 1.1 Purpose of the SIA

The primary purpose this SIA is to:

- Define the local and regional communities likely to be affected by the proposed development
- Understand the existing socio-economic characteristics, conditions and dynamics of communities within the defined study area to provide a practical basis on which to predict potential social impacts
- Identify and evaluate potential impacts on people and communities in terms of their potential occurrence, magnitude, duration, and location
- Develop mitigation and management strategies to avoid or minimise potential adverse impacts and maximise benefits to stakeholders and communities.



## 1.2 Defined study area

The Project is located within the limits of the Port of Abbot Point. The port comprises an existing coal export facility that has been in operation since 1984. In 2008, the surrounding area was defined as an SDA by the Queensland Government. North Queensland Bulk Ports Corporation Ltd (NQBP) is the port authority for the Port of Abbot Point.

Abbot Point currently has one operating terminal, Adani Abbot Point Terminal referred to as Terminal 1 (T1). T1 is strategically located to provide export capacity from the northern Bowen Basin. Coal is currently supplied to Abbot Point by rail. There are two approved port expansion proposals at Abbot Point - T0 (Adani Abbot Point Terminal) and Terminal 3 (T3; GVK Hancock) - however, construction of these projects is yet to commence.

The port is bordered by Dingo Beach and the Pacific Ocean to the north, with Mount Luce to the west and T1 to the east. The port site partially overlies the Caley Valley Wetlands with the majority of the wetland extending to the south-southwest of the site. The project footprint is directly adjacent to the Great Barrier Reef World Heritage Area.

The onshore pipelines and placement of dredged material will be undertaken on the former T2 coal export terminal site and adjoining industrial land.

Social impacts are often not contained within the immediate area of the project components. Generally, the 'area of social and cultural influence' is determined by:

- The project footprint and its interaction with the immediate neighbouring communities
- The interaction of project activities and the workforce with the nearest urban localities
- The interaction of project activities with the wider region.

The study area that has been defined for this SIA therefore reflects the communities within the immediate vicinity of the project area which may potentially provide workers, accommodation, social infrastructure and services for the Project. For the purposes of this SIA, the 'local' study area is defined as the township of Bowen, Bowen township fringe settlements, and a number of agricultural settlements between Bowen and the Port of Abbot Point (Figure 1-1). The local study area equates to the Bowen State Suburb (Bowen SSC) as defined by the Australian Bureau of Statistics (ABS).

At a broader level, the Whitsunday Regional Council Local Government Area (Whitsunday LGA) is the 'regional' study area as the Project will likely be serviced by the wider region in terms of the supply of workers, goods and services (Figure 1-2). Further, the inclusion of the Whitsunday LGA assists in providing context to the socio-economic conditions outside the local community of Bowen.

The project location and ABS statistical boundaries applied throughout the SIA, particularly in the baseline assessment, are outlined in Table 1-1.





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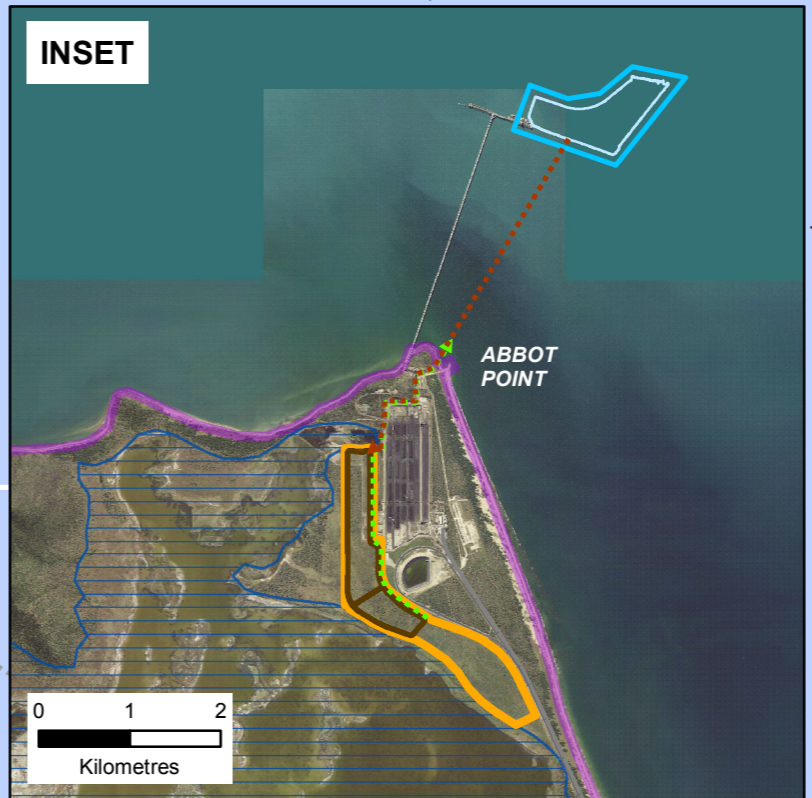
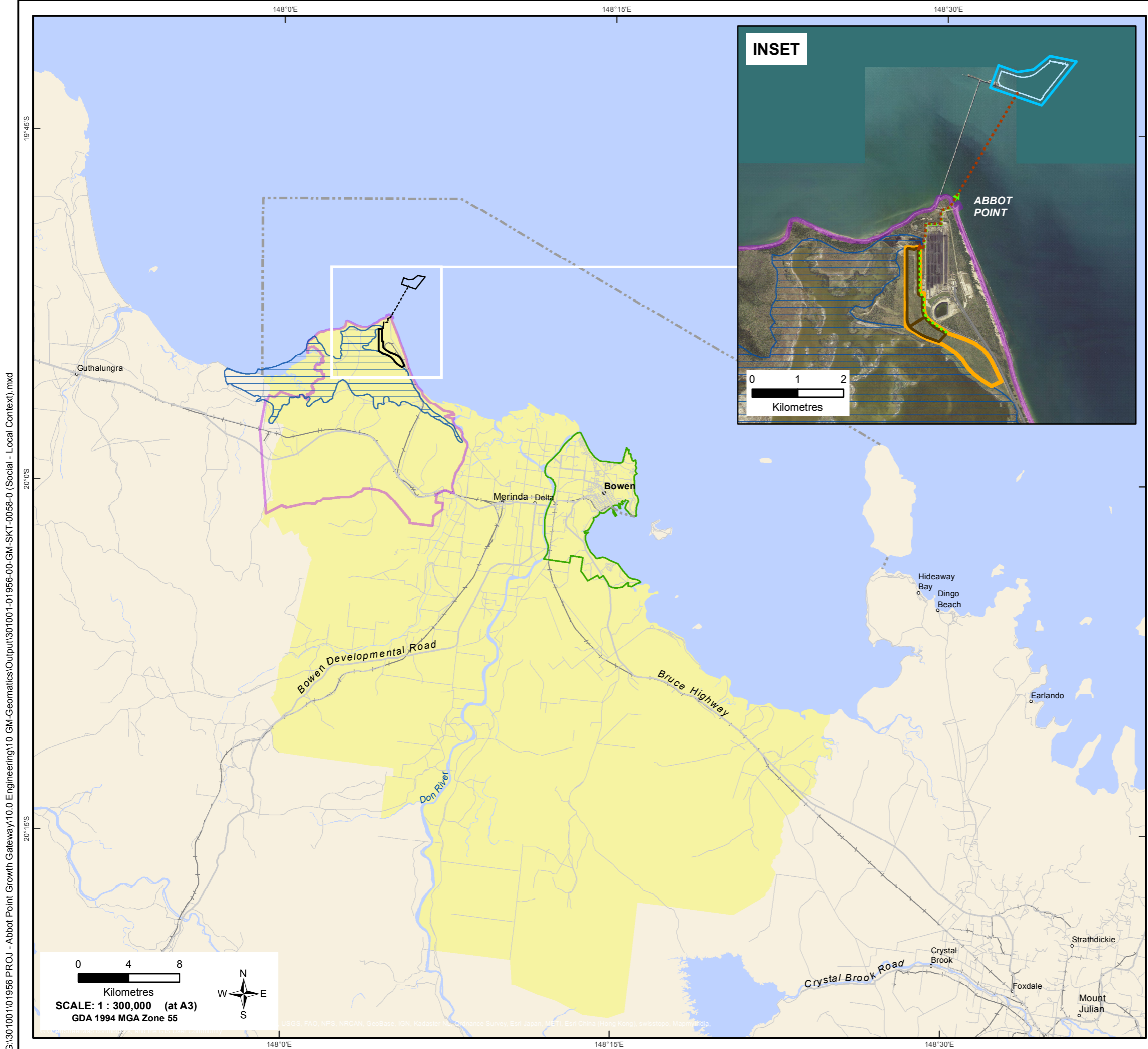
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The baseline assessment draws predominantly on ABS Census data for the Bowen SSC data and the Whitsunday LGA. However, the 2011 ABS Census data is now over three years old and as such, does not adequately capture recent changes in the region associated with the down turn in the mining industry. ABS information has therefore been supplemented with more recent data sets prepared by the Queensland Government's Statistician Office (QGSO) which are currently only available at the Statistical Area Level 2 (SA2) i.e. Bowen township. The discrepancies in geographical boundaries for these two areas should therefore be borne in mind by the reader.

**Table 1-1 Statistical boundaries**

Area / Urban Locality	ABS Statistical Boundary
Local study area	<ul style="list-style-type: none"><li>• Bowen SSC - Bowen town centre and broader Bowen area including Merinda and Abbot Point</li><li>• Substitute: Bowen SA2 - town centre of Bowen</li></ul>
Whitsunday LGA	<ul style="list-style-type: none"><li>• Whitsunday (R) LGA</li></ul>

---



- LEGEND**
- - - - - Dredged material pipeline (indicative)
  - - - - - Return water pipeline (indicative)
  - Dredged material containment pond
  - Dredged material containment pond study area
  - Dredging footprint
  - Dredging study area
  - Abbot Point port limits - 2008
  - Abbot Point State Development Area
  - Bowen Statistical Area - Level 2 (SA2)
  - Bowen State Suburb (SSC)
  - Caley Valley Wetlands

Source information:  
 Dredging study area  
 Sebut points derived from coordinates on NQBP/Aurecon figure 242770-0000-DRG-SK-0021-A supplied by NQBP  
 Dredged material and return water pipelines  
 Digitised from BMT JFA Drg. No. BMT JFA 275.02-50-03 A, dated 17/12/2014 and Golder Associates Drg. No. 1525905-027-002A, dated 12/06/2015, with some minor adjustments to avoid clashes with existing infrastructure visible in the 2013 aerial imagery and to avoid any potential clashes with the proposed MOF expansion  
 Dredged material containment pond  
 Supplied by Golder Associates 23/06/2015  
 Dredged material containment pond study area  
 Department of State Development, Infrastructure and Planning, (DSDIP)  
 Existing transport network  
 Physical Road Network - Queensland, Physical Rail Network - Queensland  
 Queensland Government - Department of Environment and Resource Management  
 Abbot Point Port Limits - 2008  
 Maritime Safety Queensland  
 Abbot Point State Development Area - Nov 2014, 2013 Imagery,  
 Department of State Development, Infrastructure and Planning, (DSDIP)  
 Bowen Statistical Area Level 2 (SA2), Bowen State Suburb area (2011), Whitsunday Regional Council area (2011a)  
 1259.0.30.001 - Australian Standard Geographical Classification (ASGC) Digital Boundaries,  
 Australia, July 2011.  
 Commonwealth Government - Australian Bureau of Statistics.  
 Caley Valley Wetlands  
 Directory of important wetlands - Queensland  
 Queensland Government - Department of Environment and Heritage Protection

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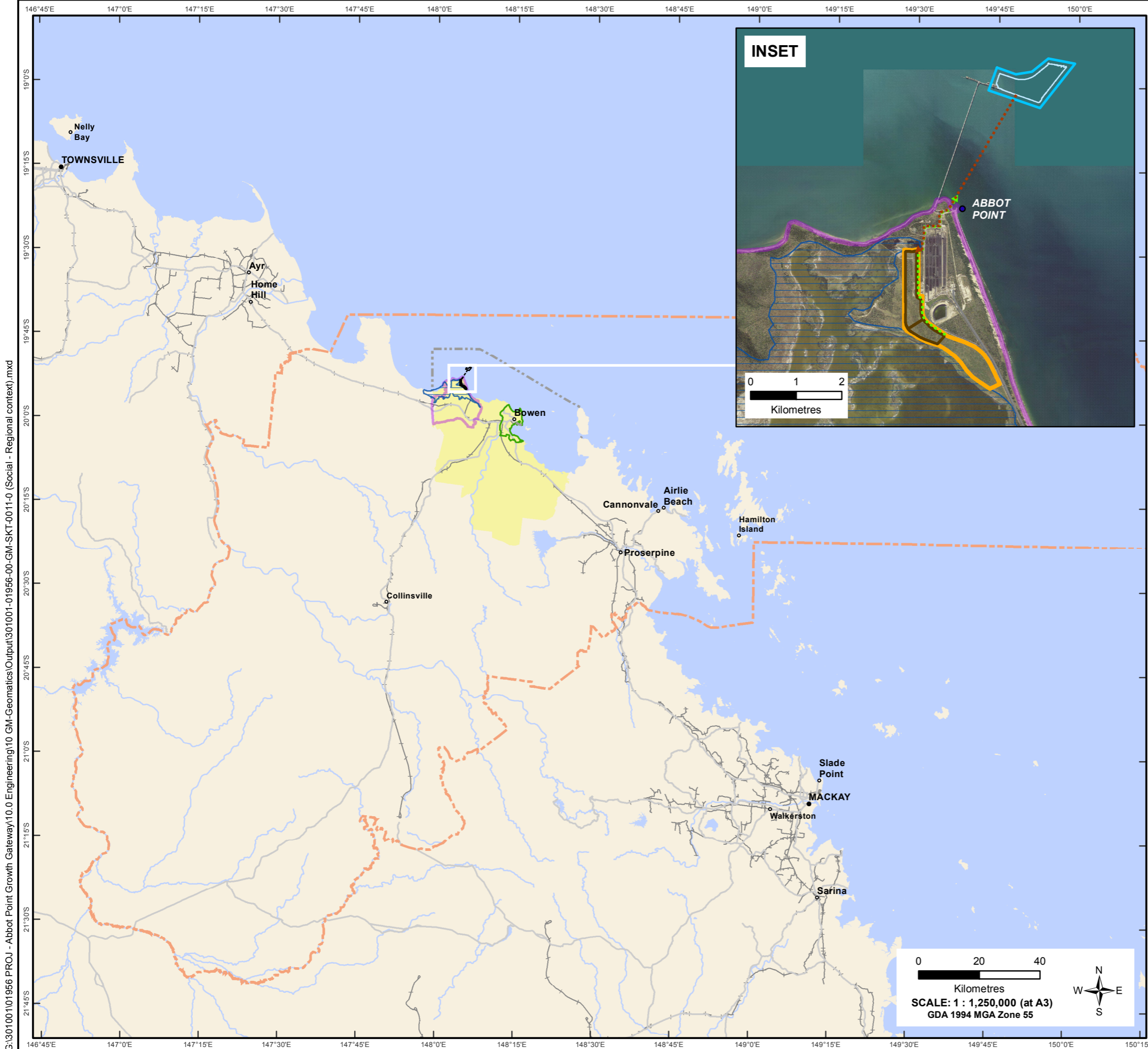

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**Figure 1-1**  
**Local context**

Figure: 301001-01956-00-GM-SKT-0058 Rev: 0

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- LEGEND**
- - - - - Dredged material pipeline (indicative)
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  - Dredged material containment pond
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  - Dredging footprint
  - Dredging study area
  - Abbot Point port limits - 2008
  - Abbot Point State Development Area
  - Bowen Statistical Area - Level 2 (SA2)
  - Bowen State Suburb (SSC)
  - Whitsunday Regional Council Local Government Area (LGA)
  - Caley Valley Wetlands

Source information:  
 Dredging study area  
 Sebut points derived from coordinates on NQBP/Aurecon figure 242770-0000-DRG-SK-0021-A supplied by NQBP  
 Dredged material and return water pipelines  
 Digitised from BMT JFA Drg. No. BMT JFA 275.02-50-03 A, dated 17/12/2014 and Golder Associates Drg. No. 1525905-027-002A, dated 12/06/2015, with some minor adjustments to avoid clashes with existing infrastructure visible in the 2013 aerial imagery and to avoid any potential clashes with the proposed MOF expansion  
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 Physical Road Network - Queensland, Physical Rail Network - Queensland  
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**Figure 1-2**  
**Regional context**

Figure: 301001-01956-00-GM-SKT-0011 Rev: 0





## 1.3 Legislative context

The following Australian Government legislation and guidelines are relevant to managing social impacts of the Project, and were considered in the development of the SIA:

- The Australian Government's Environmental Impact Statement (EIS) Guidelines for the Project dated June 2015
- The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

State and regional policies and plans provide important context to how potential social impacts may influence community development, as well as setting out priorities and existing programs of action. As such, it is important for project developers to align with the overall strategic planning for the communities in which they operate.

The following State and regional planning documents have been considered in the preparation of the SIA:

- Queensland Government's *Social Impact Assessment Guideline and complementary framework - A new approach to managing the impacts of major projects in resource communities*
- Queensland Government's *Queensland Charter for Local Content - Opening opportunities for industry*
- Queensland Government's *Major Resource Projects Housing Policy*
- *Mackay, Isaac and Whitsunday Regional Plan 2012*
- *Whitsunday Community Plan 2011 - 2021 - Our Conversation with Our Community.*

Section 4.1 provides an overview of the social planning context relevant to the Project in accordance with Section 3.7.2 of the EIS Guidelines.



## 2 ABBOT POINT GROWTH GATEWAY PROJECT

### 2.1 Overview

The current Project relates to the development of infrastructure to support development of the planned T0. Dredging of berth pockets and the associated arrival/departure apron is required to provide safe shipping access to the T0 offshore facility.

The dredging footprint is estimated to be approximately 61 ha. Prior to the commencement of dredging, the dredging contractor will establish temporary onshore facilities including site offices and laydown areas in a suitable location within the port.

Dredged material will be pumped via temporary pipelines to the onshore DMCPs. There will be no dredged material placement in the Great Barrier Reef Marine Park, Great Barrier Reef World Heritage Area or the Caley Valley Wetlands.

The onshore area has been made available by NQBP for the development of DMCP infrastructure. The nominated area is located on the T2 site plus adjoining industrial land between the existing rail loop and the Caley Valley Wetlands to the south. The area is between the operating coal export terminal T1 and GVK Hancock's approved terminal site T3. Prior to T1 development in 1984, the site was cleared and used as agricultural land.

The DMCP area has been sited:

- In proximity to the existing port noting its ultimate use will be to provide suitable land and fill for port expansion once the dredged material has dried and settled
- In proximity of proposed dredging activities
- Outside of the Caley Valley Wetlands
- To meet requirements for T0 dredging only.

### 2.2 Employment

The Project is expected to result in peak employment numbers of up to 164 Full Time Equivalents (FTEs)<sup>1</sup> during construction. Any non-resident workers involved in construction of the Project are expected to be housed in Bowen township. Employees will be given freedom of choice to decide where they will reside (e.g. in short-term rental accommodation), depending on their needs and family circumstance.

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<sup>1</sup> Full Time Equivalent (FTE) is a measure of the total level of staff resources used. The FTE of a full-time staff member is equal to 1.0 (ABS, 2011). The workforce numbers have therefore been calculated based on the total FTE workforce required for construction, which represents 1,800 hours of labour in a single year. The number of workers on-site at any one time could vary depending on the configuration of shifts, which will be determined by the project contractor.



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During construction a variety of skills will be required including project managers, project controllers, site and construction supervisors, environment managers, procurement, quality assurance, labourers, tradespeople, machinery operators, engineers, health and safety personnel and administration.

During the construction phase, recruitment and management of the workforce will largely be the responsibility of contractors and subcontractors appointed to undertake dredging and construct the DMCPs. As these contractors are not yet appointed, it is not possible to provide accurate details on where the workforce may be sourced. However, the project contractor will be encouraged to recruit from the local labour market as a priority, before recruiting further afield.

Nominal working hours will be 6am to 6pm, 7 days per week. However, working hours may need to increase to 24 hours per day, 7 days per week as required throughout construction to meet project timeframes. To facilitate safe working conditions, night lighting will be required at the project site. Directional lighting (away from the wetland) will be utilised to minimise environmental impacts.

Buses will be provided to transport the workforce from Bowen to and from site, to minimise traffic on local roads and manage the risk of fatigue.

## 2.3 Project schedule and timeframes

Project stages include:

- Pre-construction activities
- DMCPs construction including construction contractor mobilisation and demobilisation
- Dredging operations, including pipeline installation and dredge contractor mobilisation and demobilisation
- Decommissioning of the DMCPs.

Table 2-1 summarises the major activities for the DMCPs' construction and dredging operations stages. Timing of the decommissioning of the DMCPs will be dependent on port beneficial reuse requirements, and is subject to discussion with other port users.

DMCP construction is expected to occur over a three to six month timeframe once all relevant approvals have been received. The DMCP construction phase may need to operate on a 24 hours per day, 7 days per week cycle to meet schedule requirements.

Mobilisation of the dredge and supply and installation of dredging pipelines will occur over a four to five month timeframe and may occur concurrently with DMCP construction.

Capital dredging will commence as soon as practical post completion of the DMCPs and once all the relevant approvals are in place. Dredging and placement of the dredged



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material into the DMCPs will be completed in a single campaign over approximately 5 to 13 weeks, after which dewatering and consolidation will occur over time.

The dredging operation will operate on a 24 hours per day, 7 days per week cycle to limit the length of the campaign.

**Table 2-1 Indicative project schedule**

Activity	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
Mobilisation of DMCP construction contractor	█	█											
Construction of DMCP		█	█	█	█	█	█	█					
Dredging contractor mobilisation (including pipeline installation)			█	█	█	█	█	█					
T0 dredging								█	█	█			
Demobilisation (including pipe removal)												█	█



## 3 SIA METHODOLOGY

The EIS Guidelines for the Project require that information on the broad social and economic impacts (both positive and negative) be presented.

To meet government requirements, WorleyParsons has implemented a tailored methodology which has been developed to align with the context of the Project's socio-economic environment.

While care has been taken to consider each possible social impact that might result from the Project, in the interests of readability, this SIA investigates in detail only those data sets relevant to forecasting the Project's impacts going forward. Impacts have also been assessed considering the comparatively short construction timeframe of the Project, and the limited potential for long-term social issues and impacts to occur.

Key steps followed to identify and assess the social impacts were:

- Scoping - to develop an understanding of the range of issues that may need to be assessed
- Baseline data analysis - to gain an understanding of the social characteristics of the study area
- Social impact modelling - to identify potential impacts and opportunities associated with the Project, including potential cumulative impacts
- Development of mitigation measures and management strategies - to mitigate and/or manage potential impacts and enhance opportunities associated with the Project.

### 3.1 Scoping

It is understood that issues identified during the assessment process may include both real and perceived issues. That is, impacts that may actually occur, or may be perceived to occur by stakeholders and the community. Both types of impacts are important as each can influence the overall sense of wellbeing as well as decisions made by, and choices perceived to be available to stakeholders.

Identification of issues during the scoping stage of the SIA included issues perceived by the community as noted in public submissions on the Abbot Point Port and Wetland Strategy which proposed onshore dredged material placement, as well as stakeholder feedback on other infrastructure projects in the same locality. Thus, although not all of these issues will be realised as a direct result of the Project, it is necessary to consider and evaluate both real and perceived issues as part of the assessment of impacts.

The scoping exercise was based on:





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- A review of the project description against the baseline socio-economic conditions of the area
- A review of the public submissions on the Abbot Point Port and Wetland Strategy (2014).

### 3.2 Baseline data analysis

The baseline assessment considers the existing demographic composition of the local community as well as current social values and lifestyles. The most recent data sets have been used for each community aspect, with primary information sources including:

- The ABS Census of Population and Housing (2011) and other ABS data sources
- QGSO regional profiles, population reports and forecasts
- Local council website, State government departments and information sheets
- The Department of Employment's Small Area Labour Markets data, Corelogic RP Data and PriceFinder
- Existing data and reports (for example, relevant SIAs published recently by other proponents in the area - i.e. Adani Mining's North Galilee Basin Rail Social Impact Assessment 2013, outcomes of previous community consultation, local and regional planning documents, media etc.).

### 3.3 Social impact modelling

The SIA modelling methodology for the Project has been evidence-based to facilitate a targeted and logical impact assessment, tailored to the context of the Project's social environment and the issues and concerns likely to be held by the local community. This has involved analysing a range of qualitative and quantitative data through secondary research.

In particular, the following was undertaken:

- Validating preliminary issues through a review of secondary and primary data sources (as listed previously), and based on WorleyParsons' experience on other projects within the study area.
- Assessing potential social impacts and opportunities, both real and perceived, that could occur during project construction. This included analysing the effects of the Project on the local community, the project workforce, social infrastructure and community values. The cumulative impacts of other projects either planned or in the early stages of development have also been considered where relevant to the impact being assessed.



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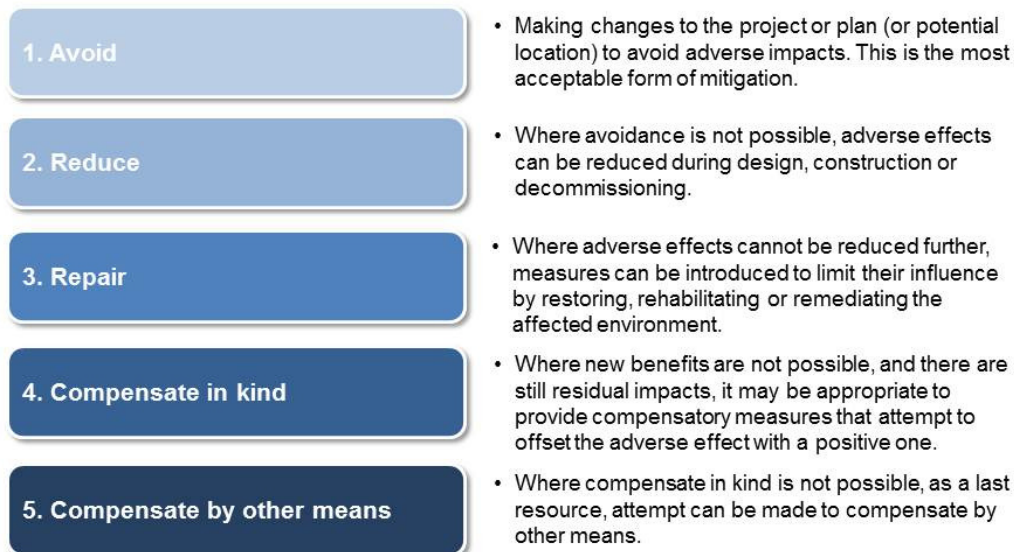
- Rating and ranking identified impacts and opportunities through a tailored scoring tool to understand the overall magnitude and significance of each issue.

In line with current government expectations, the SIA is targeted in nature and focuses only on social impacts that have been identified as having a ‘medium’ or ‘high’ overall significance for communities.

The SIA further seeks to differentiate between real and perceived impacts, positive and negative, direct, indirect and cumulative impacts, with a particular focus on the relationship between social and economic impacts.

### 3.4 Impact mitigation

Management strategies are developed in response to the identified impacts, with emphasis on mitigating/managing impacts with higher order significance rating. Mitigation/management strategies were developed using the hierarchy defined in Figure 3-1.



Source: International Association of Impact Assessment (IAIA), 2015

**Figure 3-1 Mitigation hierarchy**

Measures to mitigate and/or manage potential impacts and enhance opportunities associated with the Project have been developed in line with relevant Australian and Queensland Government policies and in accordance with a review of industry best practice, particularly as applied within the Queensland context.



Potential residual impacts were identified by reassessing the impact with the assumption that the proposed mitigation measures had been implemented.

### 3.5 Cumulative impacts

WorleyParsons' methodology to assessing cumulative socio-economic impacts is based on the approach outlined in 'The Cumulative Dimensions of Impact in Resource Regions' (Franks *et al.*, 2013). This paper suggests that all impacts have an aspect that is 'cumulative' in nature. As such, cumulative impacts should not be assessed individually, but rather all impacts should be viewed holistically as having a cumulative element. In this context, it makes more sense to assess the receiving social environment and focus on receiving entities as a primary point of analysis.

Although a level of regional collaboration (beyond the scope of this SIA) is required to provide an entire assessment, this report aims to assess the capacity of the receiving socio-economic environment to adapt to changes, based on the collective of past, present and future activities planned for the area.

### 3.6 Study considerations

As part of undertaking this SIA, a number of particular challenges were encountered. Although every effort has been made to overcome the limitations associated with each challenge, the following should be considered by the reader:

- The Abbot Point Port and Wetland Strategy which proposed onshore dredged material placement, was subject to a public review process and as such, this Project has been designed to address community concerns. The findings of this desktop study have therefore not been qualified or validated by external stakeholders as the issues are expected to be similar to those previously raised, or have been dealt with as part of the project design. The community perceptions outlined in this document are based on secondary data, and the outcomes of the extensive consultation undertaken as part of the Abbot Point Port and Wetland Strategy. The data reviewed as part of this study is summarised in Section 3.2.
- The EIS guidelines require information on the broad social and economic impacts (both positive and negative) to be presented as part of the EIS. As such, the methodology for this Project has been tailored to respond to the Government's requirements in the context of the Project's socio-economic environment.
- This scope explicitly excludes preparation of a stand-alone Social Impact Management Plan (SIMP) as this is not a requirement under the EPBC Act. A number of mitigation and enhancement strategies and key actions have been developed to enhance benefits or avoid/mitigate impacts. The 2011 ABS Census data is now over three years old, and does not adequately capture recent changes in the region associated with the



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downturn of resource projects in the region. Wherever possible, information has been supplemented with more recent data sets or with qualitative data from other sources to provide an updated perspective.



## 4 SOCIAL CONTEXT OVERVIEW

In order to accurately assess the potential social impacts of this Project, it is important to understand the existing social context of the study area. In particular, understanding current issues and concerns associated with other major infrastructure and resource projects in the region assists in identifying the range of actual and perceived issues that may need to be assessed during impact investigations, and defining the cumulative context of the receiving community.

The coal industry is a major contributor to Queensland's economy and is the largest exporter of seaborne coal in the world. Queensland has a rich endowment of high-quality coal resources, with more than 34 billion tonnes of *in situ* raw coal identified by drilling operations (DEEDI, 2011) (Ecological Australia and Openlines, 2013).

Queensland's mining industry has experienced an unprecedented boom over the past decade, particularly in the Bowen Basin in Central Queensland. The mining boom generated a number of positive economic and social impacts across the Mackay, Isaac and Whitsunday (MIW) region as a result of increased income, employment and business opportunities, population growth and diversification. However, smaller communities servicing the region, such as Bowen, Collinsville and Moranbah, experienced a number of negative impacts including:

- Housing shortages and increased housing prices which limited the positive economic flow on to communities and created pressure on non-mining businesses and local communities
- Non-resident workforces and increased mobility of local residents resulting in economic stimulus flowing away from communities in the immediate vicinity of mines and in to other regional centres
- Localised inflation leading to displacement of persons and businesses not benefiting from mining and related businesses (GHD, 2012).

In 2012-13, the mining industry started to experience the effects of the global economic downturn, influenced more specifically by the market price of coal, the completion of coal projects, closure of operating mines and workforce restructuring in response to market conditions (QGSO, 2015). The effects of the downturn are evident in the non-resident population figures for Queensland's Bowen Basin, which shows there were only 16,360 non-resident workers in June 2014, a fall of 6,540 (almost 40%) from the preceding year (QGSO, 2015).

Industry announcements made in late 2014 indicated that further rationalisation of the Bowen Basin's mining workforces would occur throughout 2015 (ABC, 2014), as operators adjust to "*difficult market conditions*" (Glencore, 2014a; QGSO, 2015).



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The downturn in the resources sector has resulted in a number of people moving out of the MIW region within the past 12 months, which has subsequently increased housing availability and improved housing affordability. However, the downturn has had an adverse effect on the regional economy, with increased unemployment and businesses being forced to scale down, diversify their offer or in some cases close down.

Despite the recent downturn, and the continued slump in coal prices, some proposals for mine expansions and other new coal mining projects in the Bowen and Galilee Basins have continued such as Adani Mining's Carmichael Project, GVK Hancock's Alpha Coal project and the associated T0 and T3 expansion projects at the Port of Abbot Point. In this regard, it will be important to consider the potential for cumulative impacts on the town of Bowen with regard to this Project, the two approved port expansion proposals at Abbot Point, as well as mining development in the Galilee Basin.

The social issues and benefits of previous projects, either actual or perceived, can be used as a starting point to facilitate the proactive identification and management of social impacts for new projects in the region. The downturn highlighted the contribution of the mining industry and associated infrastructure to the economic growth and sustainability of regional communities. As such, communities are now generally positive about the benefits mining can bring to its host community and the broader MIW region.

Conversely, history has shown that the mining industry's reliance on non-resident workers and increased mobility of local residents previously meant that an increasing proportion of economic stimulus from mining flowed out of mining towns and into larger regional centres (Petkova *et al.*, 2009). Housing shortages and prices also limited the potential for flow-on economic development and created pressures on non-mining business and socio-economic groups (Petkova *et al.*, 2009). As such, some communities have prior experience of being bypassed by the potential benefits associated with mining and infrastructure development.

Research indicates that communities do not want mining development to occur at the cost of community diversity or by displacing people who already live in the area, as experienced in some regional communities during the mining boom. Communities continue to express a preference for workers and their families to move to the area to take up employment opportunities, rather than Fly-In/Fly-Out (FIFO). Cumulative impacts on housing and accommodation remain a key concern for communities in the MIW region, particularly for those who experienced significant housing and accommodation stress during the boom. Additionally, increases in the non-resident population resulted in increased demand on social infrastructure services and facilities (e.g. medical and health facilities and services) (GHD, 2013). This was considered unfavourable by regional communities, and may remain something which is a concern or a perceived impact for communities in the study area.

In this regard, Bowen residents have expressed a desire for workers associated with the proposed developments at the Port of Abbot Point to relocate to Bowen with their families and live in existing housing (rather than at camps) to strengthen the local economy and encourage population stability (CDM Smith, 2013a).



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In recent years, there has been growing concern that the mining industry is adversely impacting the health of the Great Barrier Reef Marine Park. A proportion of people, both locally and even internationally, have expressed significant concern that growth in the mining industry could impact the Reef both directly through shipping movements and dredging, and indirectly through climate change.

Other issues that remain a key concern for communities, particularly in regard to the future port development include:

- Increased demand for labour, with consequent potential shortfalls in the labour market and competing demands from local business/industries and the Project
- Restricted access to commercial and recreational fishing areas during dredging activities
- Impacts on the environmental values of the region, particularly the Caley Valley Wetlands located adjacent to the Port of Abbot Point.

Overall, regional communities continue to emphasise the importance of achieving a balance between economic growth, environmental sustainability and community wellbeing with regard to future development of the region.

## 4.1 Social planning context

Within the State and local government context, there are a number of policies, strategies and frameworks that guide socio-economic development in the region. It is important for project developers to align with the overall strategic planning for the communities in which they operate.

The following provides a summary of the social planning context relevant to this Project.

### 4.1.1 Queensland Government SIA Guideline

In 2013, the Queensland Government prepared a detailed *SIA Guideline* (2013b) and *Framework for Managing the Impacts of Major Projects on Resource Communities* (2013a) for project proponents to adhere to when developing an EIS. The government outlined that the key components to be considered for an SIA are:

- Community and stakeholder engagement
- Workforce management
- Housing and accommodation
- Local business and industry content
- Health and community wellbeing.



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The new approach aims to be more flexible, allow for more innovation and focus only on those impacts that are directly attributable to a project. It also emphasises a risk-based approach to identifying high-priority impacts, and managing these in an adaptive and outcomes-focused manner (Queensland Government, 2013).

This SIA has been prepared based on the intent of this framework and aims to provide a fit-for-purpose document which links clearly to the management measures that have been developed for the Project.

#### 4.1.2 Queensland Charter for Local Content

The Queensland Government's *Charter for Local Content* (the Charter) provides a framework for encouraging government agencies to apply best practice in local content procurement while minimising the compliance burden on government agencies and contractors, and ensuring full, fair and reasonable opportunity for local suppliers (Queensland Government, 2014a).

The Charter has the core objective of maximising local content through greater participation of capable local industry in major government procurement activities. In addition, other objectives of the Charter are:

- Encouraging more effective and adaptive approaches to maximising local content
- Applying greater transparency in the expenditure of government funds
- Providing greater certainty for government agencies in local content procurement
- Adopting an efficient and effective tracking and review process for local content outcomes (Queensland Government, 2014a).

The Charter is supported by best practice guidelines to assist government agencies to support local industry involvement in major procurement. DSD is responsible for administrative oversight of the Charter and provides advisory services for proponents and facilitates industry development support to assist suppliers to improve their capability and capacity to effectively tender for government projects (Queensland Government, 2014a).

#### 4.1.3 Major Resource Project Housing Policy: Core Principles to Guide Social Impact Assessment

The Queensland Government's *Major Resource Projects Housing Policy* (2011) highlights the importance of providing project workers with a range of accommodation options to enable a degree of choice over living arrangements. It also supports better planning for housing in resource communities and outlines how proponents, the State government, local councils and communities can work in partnership to address housing issues to ensure the sustainability of regional towns (Queensland Government, 2011).





#### 4.1.4 Mackay, Isaac and Whitsunday Regional Plan 2012

The *Mackay, Isaac and Whitsunday Regional Plan 2012* (MIW Regional Plan) is a statutory plan that establishes the vision and direction for the Mackay, Isaac and Whitsunday Regional Council LGAs.

The MIW Regional Plan describes the region as a significant growth area, having some of the fastest growing economies in Queensland. These economies include mining, agriculture and tourism. Through the presence of the nation's largest coal deposit, the Bowen Basin, coal mining is the major industry and largest employer in the region (Queensland Government, 2012). Tourism activities are most dominant within the Whitsunday Regional Council, with the key tourist and service centres of Bowen and Airlie Beach providing access to the Great Barrier Reef and Whitsunday Islands.

The MIW Regional Plan aims to help the region meet the opportunities and challenges associated with population growth and change. It will plan for essential infrastructure services, particularly transport, and all forms of community requirements including accommodation, education, health and community and social services (Queensland Government, 2012). Specifically, the Plan identifies that there is a need for a broader range of social infrastructure, such as health and community services, in the Whitsunday area to serve the growing population and to assist in attracting new residents to live permanently in the region.

The Plan also recognises the Whitsunday region's ability to provide support services and infrastructure to mining operations in the Galilee Basin. The Plan recognises that significant development is expected at the Port of Abbot Pont, and that this will contribute to regional development.

#### 4.1.5 Whitsunday Community plan 2011 - 2021 - Our Conversation with our Community

The *Whitsunday Community Plan 2011 - 2021 - Our Conversation with our Community* (Community Plan) outlines a series of strategies aimed at promoting a vibrant, safe and inviting place. The Community Plan recognises Bowen as the administrative hub for the northern area of Whitsunday region and the location for critical infrastructure (Whitsunday Regional Council, 2011). The Council has committed to delivering the Whitsunday community's vision through various strategies including:

- Advocating and promoting mining and industrial developments to house permanent workforces in the Whitsunday
- Advocating for a range of affordable housing options in the region
- Upgrading critical regional infrastructure such as water and sewerage treatment plants



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- Protecting good quality agricultural and strategic cropping land from land uses and infrastructure which limit or restrict these lands for legitimate agricultural purposes
- Advocating for State and Federal governments to invest in the provision of essential services and infrastructure and ensure royalties are spent in the region
- Planning and advocating for infrastructure to be provided in a timely manner in order to cater for future growth
- Advocating for alternative modes of transport for freight and logistics other than the Bruce Highway
- Providing for the timely supply and delivery of critical social and community infrastructure
- Developing, implementing and reviewing conservation and environmental strategies that promote the protection and enhancement of the natural environment (Whitsunday Regional Council, 2011).



## 5 EXISTING ENVIRONMENT

This section provides an understanding of existing conditions and characteristics of those communities identified in the study area. This provides the basis for predicting the effects of social changes arising from the Project on the communities, in addition to providing a benchmark against which future change can be measured.

The information presented is targeted in nature and focuses only on those demographic and socio-economic aspects relevant to the assessment of the Project's social impacts.

### 5.1 Community values

The Whitsunday LGA was formed in 2008 following the amalgamation of the Bowen and Whitsunday Shires. The region covers an area of approximately 23,863km<sup>2</sup> and recorded a total population of 34,211 persons in June 2014, which is expected to grow by an average 1.7% per annum over the next 25 years (QGSO, 2015c).

The Whitsunday LGA is considered the Gateway to the Great Barrier Reef and as such, the tourism industry is a key contributor to the economic characteristics of the region. The strategic location of the Whitsunday LGA has also driven the development of its agricultural (horticulture and sugarcane) industry, and in more recent years, growth in mining-related activity, transport related industries, small scale manufacturing and construction industries (Queensland Government, 2012).

The region's sense of identity is shaped by the physical landscape, built environment, population characteristics, economy, arts and cultural heritage (Queensland Government 2012). Further, the *"natural environment provides the foundation for the regional economy and lifestyle enjoyed by the regions residents"* (Queensland Government, 2011).

Bowen is the commercial, business, service and administrative hub for the northern section of the Whitsunday LGA and is the largest town in the Whitsunday region. Bowen's local economy is based on a nationally significant horticulture industry, commercial fishing, aquaculture and a major salt processing facility (Queensland Government 2012).

Bowen residents report having a relaxed and healthy rural-coastal lifestyle with many community events and festivals (Bowen Tourism and Business, 2010), community initiatives such as walking groups (Whitsunday Regional Council, 2011) and a wide range of recreational social infrastructure facilities to support such a lifestyle (GHD, 2013).

The Bowen community also identifies themselves as having strong sense of community and community pride. They also value the environment and recognise that it plays a key role in the identification of the region as *"a place where the beach meets the bush"* (Whitsunday Regional Council, 2011).



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The Bowen community has stated their desire for the area to grow and develop, but not at the cost of community diversity or by displacing people who already live in the area. The Bowen community has previously expressed a preference for workers and their families moving to the area in search of employment opportunities with the Abbot Point expansion to live in Bowen (rather than at camps) to strengthen the local economy and encourage population stability (CDM Smith, 2013a).

The Bowen community recognise the benefits that the resource industry has brought to their town. In particular, the benefits of employment, more money circulating in town, new infrastructure and growth opportunities for local businesses. However, some issues are highly emotive and are the source of community protest and media attention such as the impacts of dredging on the Great Barrier Reef and the impact of the Abbot Point expansion on the tourism and commercial fishing industry as well as the nearby Caley Valley Wetlands.

The Caley Valley Wetlands provides 'existence' values to the community. 'Existence' value is the non-use value that people place on simply knowing that something exists, even if they will never see it or use it (BMT WBM, 2015). While the wetland is largely inaccessible to the public, consultation undertaken by BMT WBM (2012) found that community members were aware of the wetland and its environmental values, and were particularly concerned about the effects of future development on these values.

The Abbot Point area also has strong Indigenous heritage and was occupied by Indigenous people for many generations, up until early last century. Indigenous use of the Abbot Point area has continued with contemporary land and recreational uses such as fishing and camping (CDM Smith, 2013a). The Juru People maintain strong cultural ties with Abbot Point and the nearby Abbot Beach.

## 5.2 Socio-economic characteristics

The sections which follow describe the baseline socio-economic characteristics of the project study area. As described previously, data from the Bowen SSC has primarily been used to inform this baseline assessment. SA2 level data has been used where more recent SCC data was unavailable.

### 5.2.1 Population and demographic profile

#### 5.2.1.1 RESIDENT POPULATION SIZE AND CHANGE

As at June 2014, the population of the Whitsunday LGA was 34,211 people, representing 0.7% of Queensland's total population. At the SA2 level, the population of Bowen was 9,577 people.



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Between 2011 and 2014, the Bowen SA2 recorded an average annual growth rate of 1.7%, slightly less than the Whitsunday LGA and Queensland average annual growth rate of 1.8% over the same period (QGSO, 2015a; QGSO, 2015c).

From 2006 to 2011, the Bowen SA2 and Whitsunday LGA had a comparably stable population, with 46.8% and 44.7% respectively residing at the same address throughout that period. However, between 2010 and 2011, the Whitsunday LGA experienced a higher incidence of mobility with only 48.3% of persons at the same address, compared to 70.4% for the Bowen SA2 over the same period.

Migration into the study area over the five year period from 2006 to 2011 took place mostly from other localities within Queensland, with only a small proportion of immigrants coming from interstate or overseas. This is likely a result of persons moving to the region looking for employment opportunities in the mining industry.

Population growth is expected to be solid over the next 25 years with almost 49,700 residents expected to be living in the Whitsunday LGA by 2031, which is an increase of 1.7% per annum (15,489 persons in total) (QGSO, 2015a; QGSO, 2015c). The average annual growth rate in the Bowen SA2 is expected to be 1.6% per annum, resulting in an additional 4,019 persons during the period 2014 to 2036 (QGSO, 2015a; QGSO, 2015c).

According to the MIW Regional Plan (2012), growth in the Whitsunday LGA, particularly in the township of Bowen will largely be attributed to the development of construction and mining activities which are in turn anticipated to be a direct consequence of the infrastructure expansion and upgrades to the Port of Abbot Point (Queensland Government 2012).

## 5.2.1.2 NON-RESIDENT POPULATION SIZE AND CHANGE

QGSO's *Bowen and Galilee Basins non-resident population projections 2015-2021* provides details of current and projected numbers of non-resident workers on-shift for LGAs in the Bowen and Galilee Basin regions.

In January 2015, there were four coal mines and one metalliferous mine operating in Whitsunday (R) (Bowen only)<sup>2</sup>, along with the Port of Abbot Point (QGSO, 2015b). The area's non-resident population, which reached a peak of just over 700 persons in 2012, was 470 persons in June 2014, or 3.3% of the total FTE population.

Two projection series are presented for the Whitsunday (R) (Bowen only) area, namely Series A and Series B. Series A projections are based on the number of non-resident workers on-shift who were engaged in existing resource operations and associated infrastructure activities in the area at June 2014. The projection takes into account future changes to those

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<sup>2</sup> Whitsunday (R) Bowen only comprises the SA2s of Bowen and Collinsville, which cover the area of former Bowen Shire.



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operational workforces as advised by resource company sources, as well as the estimated non-resident construction and operational workforces of Category A projects (i.e. those that had reached Final Investment Decision at the time of preparation.

Series B projections includes the Series A projection plus projected growth in the non-resident population arising from Category B projects (those that have an EIS approved but have yet to reach Final Investment Decision) (QGOS, 2015b).

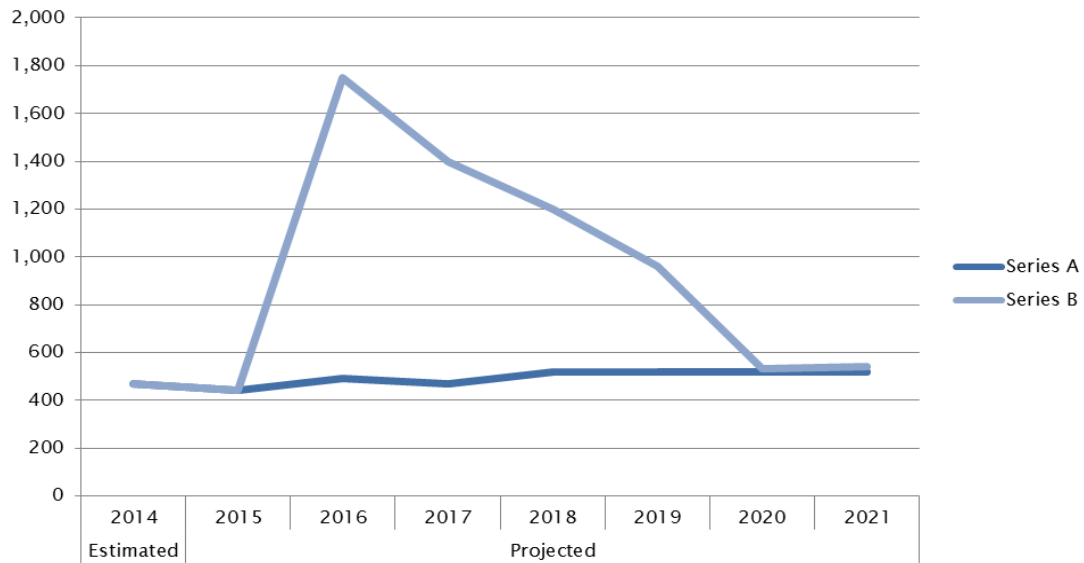
Under both series, the non-resident population is expected to fall slightly to 440 persons in June 2015, largely due to completion of the construction phase of the Drake mine in Collinsville. From 2015 onwards, changes to the size of the non-resident population in the Series A projection are mainly influenced by fluctuations in workforce numbers of existing mines in the area. Under this series, the number of non-resident workers on-shift is projected to reach 470 in 2017, before settling at 520 persons from 2018 (QGSO, 2015b).

Substantially higher growth is predicted under the Series B projection, as it reflects the influence of FIFO and Drive-in/Drive-out (DIDO) workforces associated with the construction of rail and port components of proposed Galilee Basin coal projects, as well as the Bowen Gas project (QGOS, 2015b). Given the temporary nature of construction workforces and the largely resident operational workforces of these projects, their impact on the non-resident population of Whitsunday (R) (Bowen only) will be short-lived rather than sustained.

Figure 5-1 shows a sharp increase in non-resident workforce population in the Whitsunday (R) Bowen only area to 1,750 persons in 2016, before gradually declining to 530 persons in 2020.



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Source: QGSO Regional Profiles, 2015b

**Figure 5-1 Non-resident workforce Whitsunday (R) Bowen Only 2014- 2021**

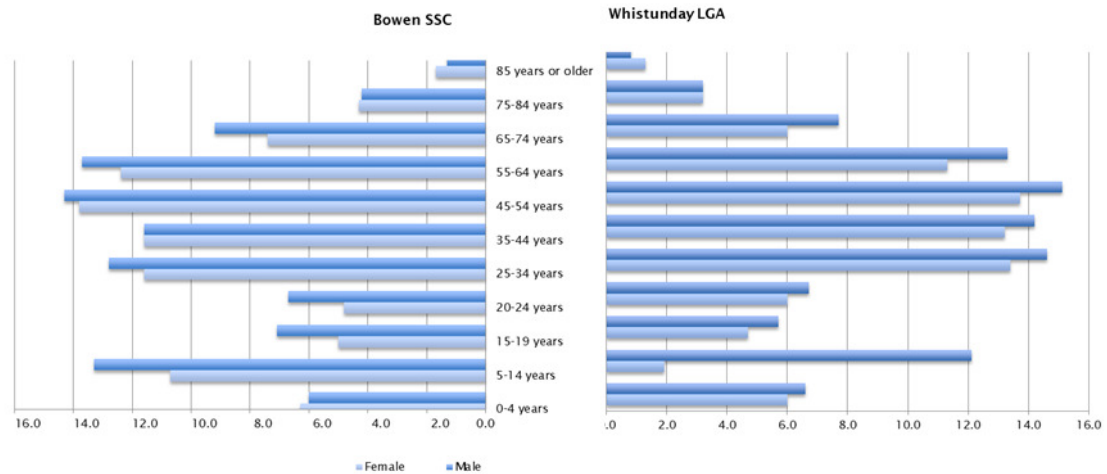
### 5.2.1.3 AGE AND GENDER

In 2011, the median age of the Whitsunday LGA was 38 years, slightly higher than the median age for Queensland which was 36 years. There was a higher proportion of both males and females in the working age cohort, with 57% of persons in the 25 -64 year age group, which was higher than the Queensland average of 53% (Figure 5-2). This might be attributed to the labour intensive tourism industry (GHD, 2013).

At the SSC level, Bowen’s age and gender profile was similar to that of the State, with around 54% in the 25 to 64 year working age cohort in 2011 (ABS, 2011c). However, Bowen’s high proportion of persons aged 45 and over (43%), indicates that it is a popular retirement destination for the Whitsunday LGA. The median age for Bowen was also noted to be slightly higher than the Whitsunday LGA at 39.4 years (ABS, 2011d).



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Source: ABS Census of Population and Housing, 2011d

**Figure 5-2 Age and gender profile for Bowen SS and Whitsunday LGA, 2011**

### 5.2.1.4 HOUSEHOLD COMPOSITION

According to Census 2011 data, ‘couple family with no children’ was the dominant family type in the Whitsunday LGA at 46% of the total, followed by ‘couple family with children’ at 39% (ABS, 2011d). Bowen SSC is representative of the overall Whitsunday LGA with 45% of families being ‘couple family with no children’ followed by ‘couple family with children’ at 38% (ABS, 2011c).

### 5.2.1.5 INDIGENOUS POPULATION

At the time of the 2011 Census, approximately 7% of the Bowen population (at the SA2 level) identified themselves as being of Aboriginal and/or Torres Strait Islander (Indigenous) origin or both, compared with only 4% in the broader Whitsunday LGA (ABS, 2011b; ABS, 2011e).

In 2011, there were very few Indigenous people in the Bowen community aged over 50, with the majority at working age (57%) and under 14 years (35%). The high proportion of Indigenous children in the Bowen community is consistent with the Whitsunday LGA and other areas across the State (ABS, 2011b; ABS, 2011e).

Of the Indigenous persons in Bowen within the working age population, 38% were engaged in full-time employment, compared to 33.8% in the Whitsunday LGA (ABS, 2011b; ABS, 2011e).





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Based on the population and demographic profile of the project study area, key considerations for the impact assessment include:

- Bowen has experienced slightly lower growth when compared to the Whitsunday LGA and the State of Queensland in recent years; likely due to the downturn in the mining industry and the delays to the Abbot Point expansion
- Population projections indicate that growth in Bowen will largely be attributed to development in mining and infrastructure activities such as upgrades to the Port of Abbot Point
- Bowen's high proportion of persons aged 45 and over indicates that it is a popular retirement destination for the Whitsunday LGA
- There is a high proportion of working aged persons living in Bowen, indicating potential opportunities for resourcing the Project locally
- Given the relatively high proportion of Indigenous persons living the Bowen community, consultation with traditional owners and members of the Indigenous community will be important to ensure their interests are recognised in the Project.

## 5.2.2 Economic profile

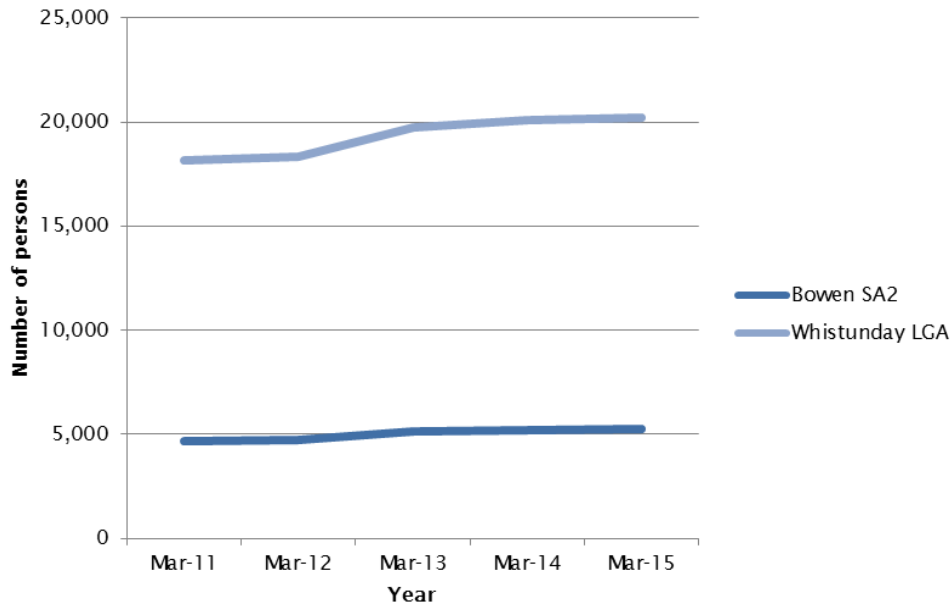
### 5.2.2.1 LABOUR FORCE PARTICIPATION

Figure 5-3 represents the labour force for the Bowen SA2 and Whitsunday LGA between March 2011 and March 2015. The size of the labour force in the Whitsunday LGA has increased from 18,145 persons in 2011 to 20,239 persons in 2015, or approximately 2.8% per annum (Department of Employment, 2015). The Bowen SA2 labour force also recorded growth during the same period, increasing from 4,675 persons in 2011 to 5,261 persons in 2015, an average growth rate of approximately 3.1% per annum (Department of Employment, 2015).

While the Bowen SA2 and Whitsunday LGA experienced increases in the size of their respective labour forces between 2013 and 2015, the rate of growth was below historical levels and the rate of growth achieved at the State level over that two year period. This could be representative of a slowing in the regional economies as a result of a softening resources market (Economic Associates, 2015).



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Source: Department of Employment Small Area Labour Market Report, 2015

**Figure 5-3 Labour force participation for Bowen SA2 and Whitsunday LGA, March 2011 - March 2015**

Figure 5-4 represents change in unemployment rates over time and demonstrates some obvious changes in unemployment between 2011 and 2015.

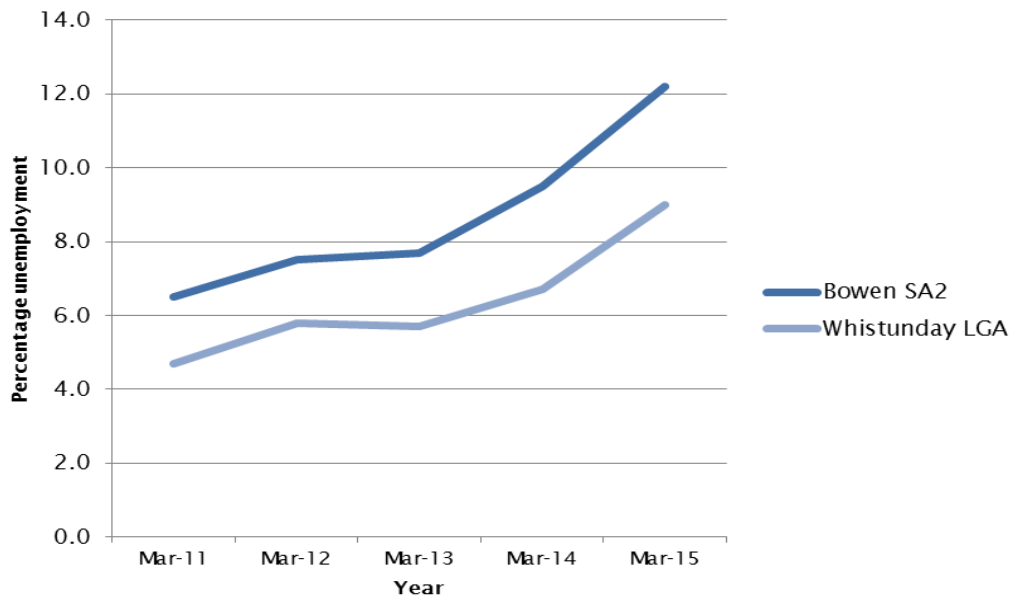
Between 2011 and 2013, the Whitsunday LGA and Bowen SA2 experienced lower unemployment rates before a spike in unemployment in 2013-14, likely due to the effects of the economic downturn and the scaling back of some construction and mining projects in the region.

In March 2015, unemployment rates have continued to rise with Bowen recording a rate of 12.2% and Whitsunday LGA reaching 9.0% (Department of Employment, 2015). Notably, unemployment rates for the study area are significantly higher than those recorded for the State, which had an unemployment rate of 6.5% in March 2015 (Department of Employment, 2015).

These statistics indicate the effect the economic downturn has had on the study area, specifically the continued delays of the Abbot Point expansion. The Bowen Business Chamber stated in a recent media article that *“the delays are hurting the town which badly needs the jobs the project would create”* (Hair, 2015).



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Source: Department of Employment Small Area Labour Market Report, 2015

**Figure 5-4 Unemployment rates for Bowen SA2 and Whitsunday LGA, March 2011 - March 2015**

### 5.2.2.2 INDUSTRY AND OCCUPATION

The main industries of employment in the Whitsunday LGA in 2011 were 'accommodation and food services' (accounting for 15% of total employment), 'retail trade' (10%) and 'construction' (10%) (ABS, 2011d). The high proportion of employment in 'accommodation and food services' and retail trade is reflective of the large tourism industry in the area. 'Mining' was the sixth largest industry with 1,106 persons employed in the industry, representing around 7% of the total (GHD, 2013).

Although 'accommodation and food services' is the predominant industry of employment in the Whitsunday LGA, the main occupations were 'technicians and trades workers' (18%), 'labourers' (16%), 'managers' (13%) and 'machinery operators and drivers' (12%) (ABS, 2011d). The discrepancy between the industry of employment and corresponding occupations could be partly attributed to FIFO/DIDO workforce where persons are residing in Whitsunday LGA but working as technicians or trades persons elsewhere (GHD, 2013).

In 2011, the key industries of employment in the Bowen SSC were 'agriculture, forestry and fishing' employing 15% of the working population, 'construction' (10%), and 'retail trade' (5%) (ABS, 2011c). The occupation categories were reflective of the 'agriculture, forestry and



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fishing' and 'construction' industries with 'labourers' (21.3%) and 'technicians and trades workers' (16.9%) being the most dominant areas of occupation (ABS, 2011c).

In 2013-14, there were 708 registered businesses in the Bowen SA2, of which 16% serviced the construction industry, followed closely by the agriculture, forestry and fishing industry at 15% (QGSO, 2015a).

In June 2014, there was an estimated 3,562 registered businesses in the Whitsunday LGA<sup>3</sup>, with an estimated 59.2% owned by sole operators (ABS, 2014a). Approximately 17.8% of all registered businesses were classified within the construction sector (634 businesses), with agriculture, forestry and fishing (573 businesses), rental, hiring and real estate services (497 businesses) also significant industries (ABS, 2014a) (Economic Associates, 2015).

This data is suggestive of the Bowen community, and the broader Whitsunday LGA, having a relatively high base of construction businesses and/or skills to service the mining industry.

### 5.2.2.3 INCOMES

In 2011, the median household income for persons living in the Bowen SSC and Whitsunday LGA was comparable at \$1,100 per week and \$1,165 per week respectively (ABS, 2011c; ABS, 2011d). However, the median household income across the study area was lower than that of the State average which was \$1,232 per week.

Conversely, the proportion of households earning over \$1,500 per week was significantly higher (44%) in the Bowen SSC than the Whitsunday LGA (33%) and Queensland (37%) (Figure 5-5) (ABS, 2011c; ABS, 2011d). This could be attributed to the higher salaries earned by individuals engaged in the mining and/or construction sector, which were among the dominant industries of employment in Bowen.

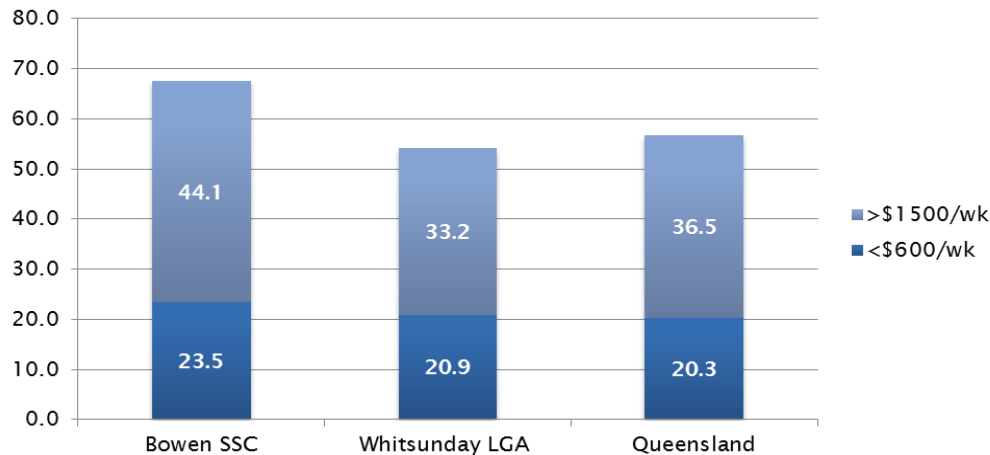
In the absence of more recent data, it is assumed that incomes may have potentially decreased in recent years given the recent downturn in the mining industry, and an increase in unemployment.

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<sup>3</sup> The latest edition of the ABS Counts of Australian Businesses publication presents business count estimates by industry at the SA2. Thus, Whitsunday LGA in this context comprises of Bowen, Collinsville, Airlie - Whitsunday, Cape Conway and Proserpine SA2s. In rural areas, SA2 boundaries represent functional zones of social and economic links.



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Source: ABS Census of Population and Housing, 2011

Figure 5-5 High and low income households or Bowen SSC and Whitsunday LGA, 2011

#### 5.2.2.4 ECONOMIC CHALLENGES AND OPPORTUNITIES

The Bowen community has experienced the positive benefits of the resource industry through the creation of employment opportunities and business growth, and a level of expectation exists in the community about the opportunities that may be associated with the Abbot Point expansion. However, in recent years, the downturn of the mining industry, coupled with the delays to the expansion has resulted in job cuts and business closures, in some instances leading to workers leaving the region in search of employment.

Through a media analysis undertaken for the SIA, it was noted that there is a level of community concern around the economic decline and the need for employment and economic opportunities in Bowen. In particular, the Bowen Neighbour Centre reported that the number of people needing financial assistance doubled over a 12 month period to about 1,800 people in 2013. This number has likely increased given the high unemployment rates reported for 2015.

In the context of this level of economic decline, there appears to be a strong contingent of Bowen residents who are generally supportive of resource industry development in the region:

*“The mainly pro-development crowd from Bowen [at an Adani community meeting] often drowned out Whitsunday tourism operators and Mackay-based green groups, who are concerned about the dumping of dredge[d] spoil in the Great Barrier Reef Marine Park.”*  
(Taylor, 2014)



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Further, the media analysis revealed a level of community understanding that the resource industry, and the subsequent Abbot Point expansion, may bring economic opportunity to the region:

*“Heaven knows we need these sorts of projects to help create jobs, to provide a future for our families, and get towns like Bowen back up and running...It’s been like a bad game of monopoly around here over the past two years...Two hotels have closed down and nobody is stopping at the ones that are still open [Barry Allen - motelier].” (Raggatt, 2014)*

It can be seen that a contingent of the business community in Bowen are likely to have high expectations about opportunities associated with the expansion of the Abbot Point coal terminal, and the associated expansion of inland coal mines that will use the terminals (Hair, 2015).

Based on economic profile of the project study area, key considerations for the Project’s impact assessment will be:

- The high unemployment rates indicate the potential for workforce to be sourced locally or from within the Whitsunday LGA
- The occupation categories were reflective of the ‘agriculture, forestry and fishing’ and ‘construction’ industries with ‘labourers’ and ‘technicians and trades workers’ being the most dominant areas of occupation
- There is likely to be the potential to procure goods and services from the local Bowen community and broader Whitsunday LGA given the high proportion of construction businesses (16% and 17.8% respectively).

## 5.3 Housing and accommodation

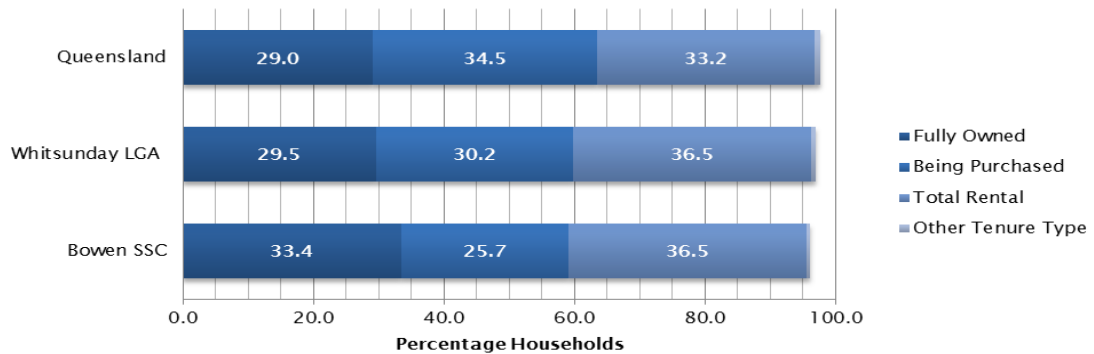
### 5.3.1 Home ownership

In 2011, home ownership in the study area was slightly lower than Queensland as a whole, where approximately 60% of occupied dwellings were either being purchased or owned outright, compared with around 64% for Queensland (Figure 5-6) (ABS, 2011c; ABS, 2011d).

The data shows that the study area had a higher proportion of rented properties (37% in the Whitsunday LGA and Bowen SSC) when compared with the State average of 33% (ABS, 2011c; ABS, 2011d). This, coupled with the slightly lower rates of home ownership, may be indicative of the transient population in the study area, resulting in people choosing to rent rather than buying a property (GHD, 2013).



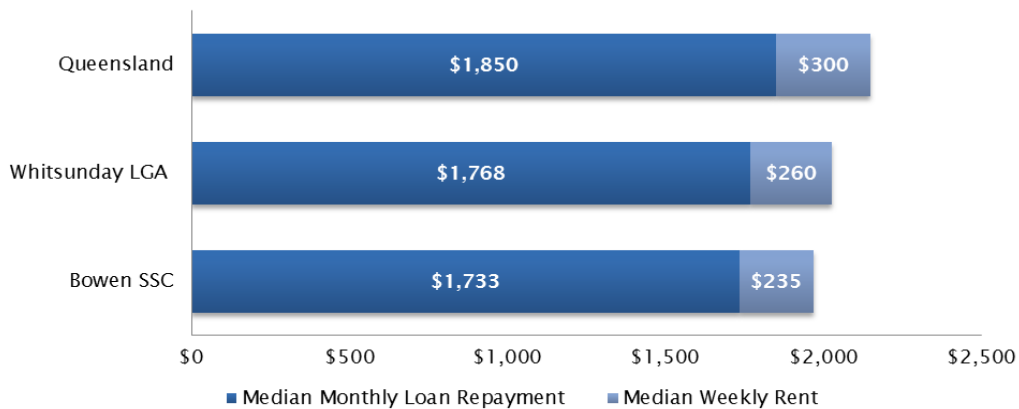
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Source: ABS Census of Population and Housing, 2011c; 2011d

**Figure 5-6 Home ownership in the study area, 2011**

Figure 5-7 shows the median monthly loan repayments and weekly rent across the study area in 2011. The Census data suggests that housing costs based on monthly loan repayments are generally cheaper than Queensland as a whole. It is noted that Census housing data is outdated and may not reflect current costs of living. As such, more recent statistical data is provided in the sections which follow.



Source: ABS Census of Population and Housing, 2011c; 2011d

**Figure 5-7 Median monthly loan repayment and weekly rent, 2011**

### 5.3.2 Housing costs and vacancy rates

Median house prices in Bowen have been relatively stable over the last seven years (2008-2015) hovering close to \$350,000 (Figure 5-8). However, the number of sales has gradually

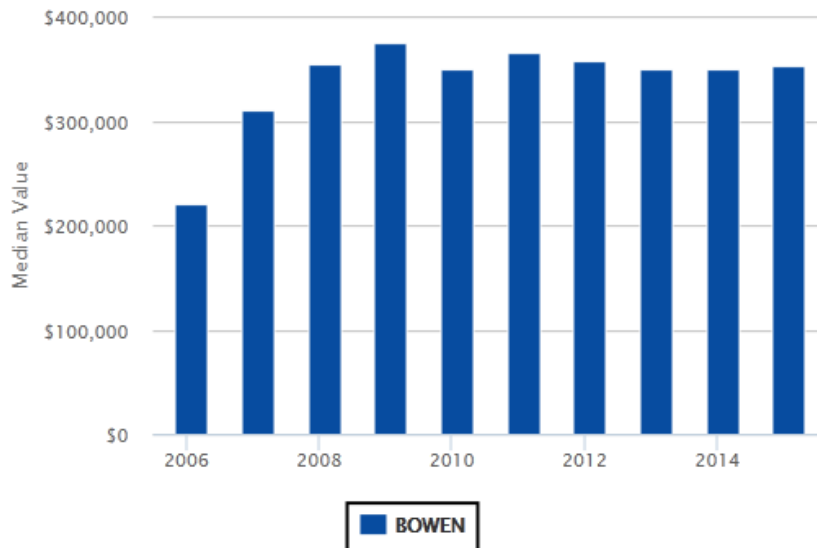


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declined from 240 houses sold in 2006 to little over 118 houses sold in 2011, before rising slightly again in 2012 (146 houses) (Price Finder, 2015). Since 2012, the number of sales has continued to decline, with only 77 houses sold in 2014, and 19 houses sold up to March 2015 (Price Finder, 2015).

As shown in Figure 5-9, median rental prices in Bowen also remained relatively stable at approximately \$350 per week between 2009 and 2013 (CoreLogic RP Data, 2015). However, in April 2015 prices had dropped to below \$300 per week, again reflective of economic conditions.



Source: Corelogic RP data, 2015

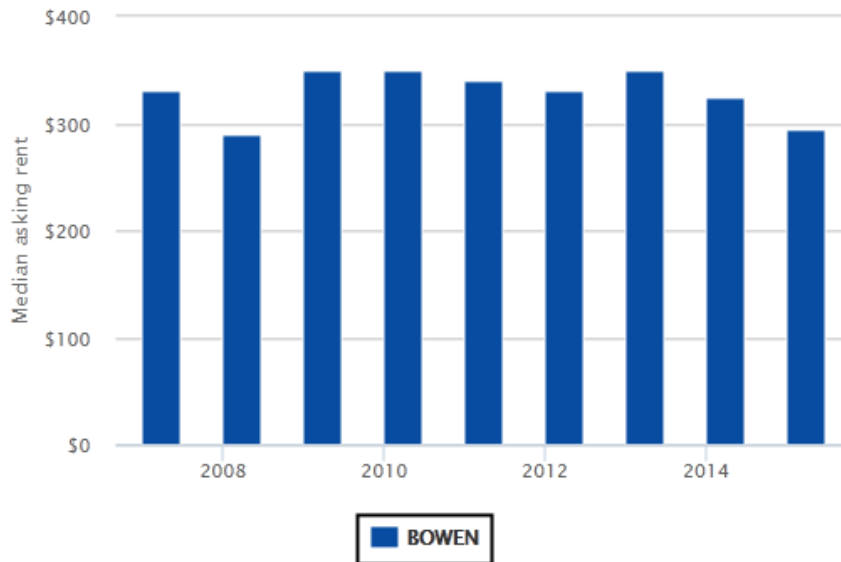
**Figure 5-8 Median house price in Bowen, 2006 - 2015**





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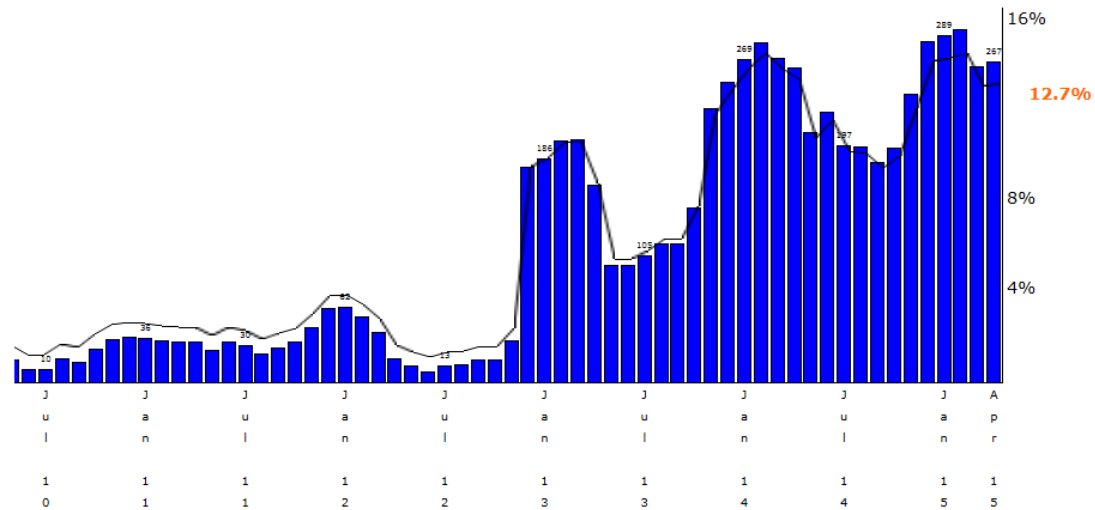
Source: Corelogic RP data, 2015

**Figure 5-9 Median weekly rent in Bowen, 2007 - 2015**

Figure 5-10 shows the rental vacancy rates in Bowen between 2010 and April 2015. The figures show that rental vacancy rates remained relatively low between July 2010 and the end of 2012. However, since January 2013, rental vacancy rates have increased significantly and have fluctuated between 5% and 16% (SQM Research, 2015).



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Source: SQM Research, 2015

**Figure 5-10 Rental vacancy rates, Bowen, July 2010 - April 2015**

Historically, regional communities have experienced significant and sudden shortages in housing supply as a result of development projects with large workforces and/or the cumulative effect of a number of projects (GHD, 2013). Property markets such as Bowen and Emerald around the Galilee Basin, and Airlie Beach in the Whitsunday LGA, have each been tipped as property hotspots by promoters of regional property investment.

However, recent media articles suggest these areas are presently being significantly affected by the downturn in mining sector, as evidenced by the falling purchase and rental prices and increased vacancy rates in Bowen (Wargent, 2014).

According to the Daily Mercury (Lees, 2014), Bowen’s property market is being negatively impacted by investor uncertainty around the Abbot Point expansion. LJ Hooker Bowen representative Mike Lyon said the market was probably the worst it has ever been:

*"There's about 220 vacant homes here....We've never got to this point before". Mr Lyon said the uncertainty around the Abbot Pt terminal was having an impact. "Once they solve the Abbot Point problems things will get better"* (Lees, 2014).

Further, a reduction in the number of non-resident workers in the area, coupled with local people leaving the area in search of employment opportunities elsewhere, is likely to have also contributed to the increase in the number of houses for rent and purchase in Bowen (GHD, 2013).

Whilst housing supply/availability is not currently an issue in Bowen, consultation with the Whitsunday Regional Council (GHD, 2013) revealed that the quality of the housing stock is poor with much of the stock being old, degraded and in need of renewal.



### 5.3.3 Temporary accommodation

The 'Bowen Basin Population Report 2012' indicated that workers accommodation facilities (i.e. camps) were the predominant type of accommodation utilised by non-resident workers (QGSO, 2012).

In 2012, the Whitsunday (R) (Bowen only) area had a total of 460 non-resident workers staying in workers accommodation facilities, and a further 275 workers staying in hotels/motels. Desktop research indicates that during this period, the seasonal workforce and tourists in Bowen exacerbated the demand for a range of short-term and/or temporary accommodation options including motels, caravan parks and hostels.

However, more recent data suggests that this pressure had eased by 2014. Specifically, in June 2014 there were five hotels and motels in the Bowen SA2, with a total of 157 rooms (ABS, 2014b). Occupancy rates for hotels, motels and service apartments in this quarter were 39%, which was significantly lower than in the July quarter of 2013 when this figure was 53% (ABS, 2014b).

According to Economic Associates (2015), the average occupancy rate in the Whitsunday (R) - Bowen (former Bowen Shire) from September 2010 to June 2014 for hotels, motels and serviced apartments was lower than for the Whitsunday LGA and the State more broadly.

In terms of housing and accommodation, key considerations for the Project include:

- A high number of properties are currently available for rent and purchase
- High vacancy levels in tourism accommodation in Bowen, and significant stock of rental housing available for short-term lease
- The opportunity exists to utilise existing housing stock to accommodate project workforce
- The accommodation needs of seasonal workers and tourists needs to be considered when planning workforce accommodation for the Project
- The Bowen community's preference for workers and their families to relocate to Bowen to boost the housing market needs to be considered.

### 5.4 Community infrastructure and services

Bowen is a well-established and liveable seaside community hosting a broad range of community services including a hospital, community childcare, library, swimming pool, Skate Park and schools including two high schools (CDM Smith, 2013a).

The attraction of Bowen as a retirement destination has resulted in the provision of community infrastructure tailored towards an aging community such as aged care



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accommodation, general medical services and recreational facilities such as lawn bowls facilities. However, some service gaps have been noted in the community, including around physiotherapy and maternal and child health (CDM Smith, 2013a). In particular, the Bowen hospital does not provide maternity services and residents are therefore required to travel to Proserpine. The need for additional health and emergency services and facilities was also highlighted during consultations with health service providers for the North Galilee Basin Rail project (GHD, 2013). Whilst consultation for that project revealed that health services in the region are well within capacity to meet the demands generated by this Project, there may be some shortfalls and challenges as a result of cumulative population growth, including:

- Inadequate capacity or resources to cater for emergencies in Bowen, and in most cases emergencies cases are required to be air lifted to Mackay or Townsville
- Shortage in nursing staff, particularly when a nurse is required to escort a patient while transferring to Townsville or Mackay - this leaves the hospital short of staff
- Shortage in local GP services, particularly in Bowen where currently there are eight GPs who are not accepting new patients as they are operating at capacity
- Shortage of mental health services in Bowen
- Overall challenges in attracting skilled health staff such as doctors and nurses in regional areas
- The need for additional Queensland Police Service resources in the region to undertake traffic management and administration
- Shortages in Queensland Fire and Rescue Services personnel to respond to fires as they function on a volunteer basis and therefore are not required to respond to fire incidences. Furthermore, they are ill-equipped to respond to emergencies as they are not trained for rescue operations (GHD, 2013).

The provision of social infrastructure is based on the size of the geographical area and Census count of resident population in the area (Queensland Government, 2007). As a result, the demand on social infrastructure continues to be an issue given that the non-resident/transient portion of the population remains unaccounted for in Census data.

According to GHD (2013), collaboration with stakeholders regarding the provision of new or upgraded existing infrastructure will be important in identifying and responding to the social infrastructure needs of communities as they arise.

Population increase in Bowen is expected to result in an increased demand for additional and new community infrastructure such as higher-order community centres, community health services, libraries, fire and rescue and State Emergency Services, housing support and youth services (Queensland Government 2012).



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Key considerations for social infrastructure and services include:

- The attraction of Bowen as a retirement destination has resulted in the provision of community infrastructure tailored towards an aging community
- Some of the existing systems are already at capacity, particularly water and sewerage infrastructure, and there is latent demand for health services, facilities and aged care
- Inadequate capacity or resources to cater for emergencies in Bowen, and in most instances emergencies cases are required to be air lifted to Mackay or Townsville
- Existing high level of demand for women's and child health services, as well as allied health including physiotherapy, occupational therapy, mental health and family planning.



## 6 IMPACT ASSESSMENT

This section identifies, describes and assesses the potential social impacts arising from the Project on local and regional study areas, with a particular focus on stakeholders directly impacted by the Project.

The level to which each community in the study area will experience the impacts and opportunities outlined below will depend on their resilience, their ability to adapt to change, and their capacity to capitalise on opportunities. The baseline assessment in this report provides an indication of this, and wherever possible this has been woven into the assessment which follows.

Potential social impacts and opportunities were identified through a preliminary scoping exercise (Section 4.1) and then verified through more detailed analysis of quantitative and qualitative data.

### 6.1 Preliminary issues analysis

A review of the social planning context and the socio-economic characteristics of the study area (Sections 4 and 5), highlighted a range of actual and perceived issues to be assessed during impact investigations. Issues identified through the initial scoping exercise are identified in Table 6-1.

**Table 6-1 Preliminary issues analysis**

Issue	Description
Population and demographics	<ul style="list-style-type: none"> <li>Temporary increase in population during construction phase due to presence of a non-resident workforce in the region.</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Impacts of dredging and shipping movements on the Great Barrier Reef Marine Park, and consequential impacts on the tourism industry.</li> <li>The environmental impacts of development, particularly impacts on the Caley Valley Wetlands near Abbot Point are a major concern for people both locally, nationally and internationally.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>Short-term increase in local employment and business opportunities during construction.</li> <li>Increased demand for labour, with consequent potential shortfalls in the labour market and competing demands from local business/industries and the Project.</li> <li>Restricted access to commercial and recreational fishing areas during dredging activities (approximately three months).</li> </ul>
Housing and	<ul style="list-style-type: none"> <li>Temporary accommodation in Bowen is already limited due to the tourists and seasonal workers who relocate to Bowen (April to</li> </ul>



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Issue	Description
accommodation	<p>September) particularly caravan parks, hotels, backpackers - the lower cost temporary accommodation. This may be exacerbated by the Project.</p> <ul style="list-style-type: none"> <li>Potential cumulative impacts on housing availability and affordability over the short-term, with increased demand leading to decreased housing availability and increased housing rents and prices further leading to housing stress for vulnerable groups.</li> </ul>
Social infrastructure	<ul style="list-style-type: none"> <li>Increased demand on existing social infrastructure services and facilities (i.e. medical and health facilities and services) due to increase in workforce related population.</li> </ul>

## 6.2 Rating of impacts

Impacts have been assessed against the criteria outlined in Appendix 1. These criteria were developed in line with the impact assessment guidance provided in the Queensland government's SIA Guideline (2013b).

Negative and positive impacts were ranked according to their:

- Consequence = (extent + duration + severity)
- Significance (consequence x probability).

This allowed impacts to be rated as having an overall significance rating of a 'low', 'medium', 'high' or 'very high' (Table 6-2). These ratings were applied to both positive and negative impacts. Neutral impacts were not ranked as the impacts are considered negligible and management strategies are not required.

Appendix 2 contains the detailed matrix according to which identified social risks for the Project were evaluated.



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Table 6-2 Impact rating guideline

Significance Score	Negative	Positive
< 25 <b>LOW</b>	<p>An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved.</p> <p>Results in short-term effect on the social and/or cultural environment.</p>	<p>Minor positive changes for a small group of people. Impacts result in a short-term benefit or improvement to the social and/or cultural context.</p> <p>Benefits can be enhanced through the application of management strategies.</p>
26 - 50 <b>MEDIUM</b>	<p>An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but in conjunction with other impacts may prevent its implementation.</p> <p>Results in a negative medium to long-term effect on the social and/or cultural environment.</p>	<p>A benefit or improvement of medium significance, which can be enhanced through the application of management measures.</p> <p>In combination with other project benefits, the impact has the potential to leverage community support.</p> <p>Results in a positive medium to long-term effect on the social and/or cultural environment.</p>
51 - 75 <b>HIGH</b>	<p>A serious impact, if not mitigated, may prevent the implementation of the project.</p> <p>These impacts would be considered by society as constituting a major and usually a long-term change to the social environment and result in severe effects.</p>	<p>A substantial benefit or improvement to the social or cultural environment, or quality of life of a large group of people.</p> <p>The benefit can be enhanced to include a broader group of people, and would be considered by the community as a good and long-term advantage for beneficiaries.</p>
> 75 <b>VERY HIGH</b>	<p>A very serious impact which may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change.</p> <p>Very often these impacts are irreversible and usually result in very severe effects for a large group of people.</p>	<p>A wide-reaching, permanent and extremely significant benefit for whole communities.</p> <p>It would be difficult to enhance the benefit further, and the opportunity is likely to be sustained over future generations.</p>





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The technical details of many of the impacts identified through the impact assessment are provided in detail in other EIS technical studies. The findings of the below studies were reviewed as part of the impact assessment process:

- *Abbot Point Growth Gateway Economic Impact Study* (Economic Associates, 2015)
- *The Potential Impacts of Port Development at Abbot Point on Fisheries* (Bond University, 2015).

It should be noted that the social impacts discussed throughout this impact analysis often overlap or are correlated with other social impacts. As such, some impact discussions are unavoidably repeated in several sections of the analysis.

## 6.3 Potential impacts and opportunities

### 6.3.1 Economic development

As with most large development projects, the primary social benefit of the Project is likely to be direct and indirect job and business opportunities for workers, including those from the local community. The Project is anticipated to have a range of economic benefits including:

- Supporting (in association with a range of other major projects) the export of up to an additional 70Mtpa of largely thermal coal from Queensland, and the generation of royalties associated with those exports
- Generating economic activity within the MIW region within the heavy and civil construction sector, and generating additional employment opportunities
- Generating opportunities for in-region supplies of support services to heavy and civil construction projects (Economic Associates, 2012).

#### 6.3.1.1 LOCAL EMPLOYMENT OPPORTUNITIES

Employment is an important indicator of economic development and social welfare. As outlined in Section 2.2, the Project is expected to result in peak construction employment numbers of up to 164 FTEs.

After the construction phase, operating employment impacts would manifest for approximately five years in the order of two FTEs. It is envisaged that these might not be in the form of new 'jobs', but rather a continued stream of employment opportunity for heavy and civil construction workers and their supply chains that rely on project based work.

Demographic data in the baseline indicates that there are likely to be a number of people in the study area with suitable skills for working on the construction of the Project specifically labourers, technicians and trades workers. Therefore, recruitment is anticipated to include a combination of existing residents of Bowen and those that may choose to relocate to Bowen



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for the duration of the construction phase. Whilst it is DSD's preference to source the majority of the workforce from the local area, it is not possible to estimate the split between the resident and non-resident workers at this stage.

The community has emphasised the need for additional local employment opportunities in Bowen to stimulate economic growth:

*"[The Abbot Point expansion] would be great for Bowen because it would provide job opportunities....With job opportunities comes increased population, it brings to any community increased educational facilities, increased health facilities" [Bruce Hedditch, Bowen Business Chamber] (Validakis, 2013).*

The construction workforce for the Project will be provided by contractors and sub-contractors engaged to undertake the dredging and construction of the DMCPs. DSD acknowledges that, given the short construction timeframe, the employment opportunities associated with this Project are also short-term and will not provide the local community with sustainable, long-term employment.

However, the Project will facilitate the T0 expansion of Port of Abbot Point, which is a key component in unlocking the coal resources of the Galilee Basin and exporting these resources to the rest of the world. Thus, the Project will indirectly enable employment opportunities through Adani Mining's Galilee Basin projects. These projects including the Carmichael project, could potentially provide an investment of up to \$21.7 billion in Queensland, and create approximately 9,500 jobs and thousands more indirect jobs.

Further, the procurement of goods and services for the Project may also provide additional indirect employment opportunities as local businesses may need to expand/increase their capacity to service the Project, together with other projects in the area. In this case, workers and their families may decide to stay or relocate to Bowen if local businesses can offer longer term employment opportunities, outside the timeframes of this Project.

Desktop research indicates that, whilst additional employment opportunities would be welcomed by the local community, some residents may be concerned that the cumulative workforce requirements for the port expansion may impact on the availability of labour to support the local agricultural industry. However, the workforce requirements for each sector are different; for example the agricultural sector tends to recruit unskilled workers, whilst the construction sector generally employs skilled labourers and trades people. It is considered that the project workforce will not adversely impact the availability of seasonal workers, nor affect the retention of existing employees given the short-term and temporary nature of the Project.



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### Proposed enhancement measures

The recruitment strategy for the Project will be based around a local-State-national-international employment hierarchy, i.e. the local labour market will be given first priority for filling job positions, before the possibilities of recruiting further afield are explored.

The project contractor will be required to commit to this recruitment approach as part of the development and implementation of a Local Content Plan, to be prepared in accordance with the principles of the Queensland Government's Charter for Local Content. More specifically, the contractor will be required to demonstrate:

- Their target for recruiting workforce from local area, expressed as a percentage of total expected workforce
- How they will communicate employment opportunities for the Project
- How they intend to train/upskill and recruit local people, including those from the Bowen and the broader MIW region
- Their strategies for facilitating opportunities for under-represented groups, including Indigenous people, as well as unemployed and under-employed population groups
- Roles and positions that may be able to be filled by Indigenous participants.

As well as supporting the Project's ability to fulfill its workforce requirements, this will enhance local and regional participation in the Project and build social capital and capacity, increasing the potential for flow-on benefits for the region.

#### 6.3.1.2 LOCAL AND REGIONAL BUSINESS OPPORTUNITIES

It is estimated that, at a regional level, the Project will generate positive economic impacts in the MIW region. At this stage of project planning, DSD is anticipating project costs to fall within a range, represented by low and high scenarios between \$50 million and \$100 million. This estimate includes capital expenditure on dredging mobilisation; including pipe installation and removal, dredging work and DMCP construction. The project construction costs have been estimated based on concept design and on current market prices. As a tender process is currently being undertaken for the Project, an exact figure cannot be provided to ensure the integrity and accountability of the tender process.

Economic Associates (2015) modelled the potential project expenditures using an input-output methodology to analyse and assess the potential economic impacts of the Project. Output impacts relate to the overall economic activity generated by project expenditures. As such, output is a measure of activity or turnover of expenditure as opposed to net value.

The output impacts of the Project during its construction phase are anticipated to be between:



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- \$62.60 million, comprising \$50.00 million in direct output and \$12.60 million in indirect output
- \$125.19 million, comprising \$100.00 million in direct output and \$25.19 million in indirect output (Economic Associates, 2015).

The Project presents opportunities for local and regional businesses to participate in the Project's procurement process during the construction phase. It is anticipated, given the high proportion of existing construction-related businesses in Bowen and the broader Whitsunday LGA, that construction services, materials and inputs could potentially be sourced from within the MIW region, specifically for the construction of the DMCPs. This may strengthen the local and regional business profile, potentially diversifying the local economy over the short-term.

There is, however, a risk that the expectations of local and regional business to benefit from the Project will not be met, particularly if local and regional businesses lack the capacity or experience to tender competitively for works. This will be particularly true for dredging which will be carried out by an experienced dredging contractor. This risk may be exacerbated if project procurement processes, including pre-qualification requirements, are not widely understood. Distribution of information and management of expectations will therefore be key to mitigating potential impacts in this regard.

While the existing capacity of local businesses to supply to the Project is unknown, DSD recognises the value in supporting local and regional businesses to participate in the Project. Whilst local businesses in the immediate local area, due to their size and nature, may be unable to tender for the Project's main package of work, they do stand to benefit from smaller packages of work further down in the supply chain; for example, earthworks for bund construction and machinery operation and maintenance.

As part of indirect benefits to the region, there is potential that the project workforce may participate in tourism activities in the Whitsunday LGA when off roster (GHD, 2013).

### **Proposed enhancement measures**

In order to optimise potential local business opportunities afforded by the Project, DSD is committed to providing full, fair and reasonable opportunity to local contractors and suppliers in accordance with the Queensland Government's Charter.

DSD will achieve this by:

- Ensuring at the tender preparation stage that tenders are packaged in a manner that optimises local industry opportunities while enhancing project competitiveness and value for money
- Encouraging contractors and sub-contractors to support and report against the Charter principles



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- Advertising the goods and services requirements for the Project through the Industry Capability Network (ICN) and local chambers of commerce (i.e. Bowen Business Chamber) to ensure that information about opportunities is disseminated locally in the first instance
- Undertaking briefings in Bowen with local businesses to describe the nature of goods and services required for the Project, as well as the higher tier contractors that can be engaged for opportunities, and the pre-qualifications implications of this.

As per the above, local content components will be included in tendered works and will be assessed as part of preferred supplier evaluation. Further, the project contractor will be bound to meeting the Project’s local content requirements and will be required to prepare a Local Content Plan in accordance with the Queensland Government’s Charter; reporting on the outcomes of this upon completion of construction.

The project contractor will be required to prepare and implement local content initiatives focused on local and regional communities as a priority to encourage sustainable economic growth and support a diverse range of local business and industries.

More specifically, the contractor will be required to demonstrate:

- How local capabilities will be considered to enhance local content
- How work packages will be developed to enable smaller/discrete local contracting opportunities
- How they will work with ICN, Supply Nation, Bowen Business Chamber, Indigenous Business Australia (IBA) and other appropriate entities to identify those local and Indigenous companies able to supply goods or services commensurate with the quality, safety, environmental, reliability and delivery standards and objectives of Project
- How they will communicate subcontracting and supply opportunities to the local market.

**Table 6-3 Economic development - impact and enhancement summary**

Impact	Affected stakeholders	Impact	Enhancement Measure	Residual Impact
Increased opportunities for local and regional businesses in Bowen and the broader Whitsunday LGA.	<ul style="list-style-type: none"> <li>• Local business</li> <li>• Regional business</li> <li>• Government agencies</li> </ul>	MEDIUM	<ul style="list-style-type: none"> <li>• The project contractor will be required to develop and implement a Local Content Plan in accordance with the principles of the Queensland</li> </ul>	MEDIUM



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Impact	Affected stakeholders	Impact	Enhancement Measure	Residual Impact
			Government's Charter for Local Content.	
Increased opportunities for local and regional employment.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> </ul>	MEDIUM	<ul style="list-style-type: none"> <li>The project contractor will be required to develop and implement a Local Content Plan in accordance with the Queensland Government's Charter for Local Content. The Local Content Plan will align with the Project's recruitment hierarchy based on source location (local, regional, State, national, and international).</li> <li>The Local Content Plan will include strategies that encourage participation of under-represented and under-employed groups for appropriate roles/functions.</li> </ul>	MEDIUM

### 6.3.2 Community values and lifestyle

Community values can include aspects relating to community lifestyles and aspirations, and also the ability to live in accordance with environmental and social norms and values. The values of the local community were identified during the establishment of the social baseline (Section 5). The Bowen community's values are centred around their relaxed and healthy rural-coastal lifestyle. The natural environment is also highly valued by local residents as are the tourism and recreational opportunities afforded by coastal living, particularly fishing and boating.

However, recent media articles suggest that there is a level of uncertainty and anxiety amongst the community surrounding the economic climate should the development at the



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Port of Abbot Point not go ahead, with members of the Bowen community proclaiming their need for the development:

*"We need this to further cement our economic stability by having a good export facility at Abbot Point [Bruce Hedditch, Bowen Business Chamber]" (Validakis, 2013).*

The Bowen community have indicated a desire for the area to grow and develop and some residents have expressed that the resource industry, and the subsequent development at Abbot Point, can bring much-needed opportunity to the region:

*"Heaven knows we need these sorts of projects to help create jobs, to provide a future for our families, and get towns like Bowen back up and running" [Barry Allen - motelier] (Raggatt, 2014).*

### Proposed mitigation measures

Ongoing community engagement will be key to alleviating project-related anxiety and concern amongst the local community. DSD will conduct clear, proactive engagement and consultation with the local community to facilitate the provision of timely and accurate project information, including around potential procurement and employment opportunities.

#### 6.3.2.1 IMPACTS ON THE ENVIRONMENT

Given the nature and small scale of the proposed Project, the natural environment will necessarily undergo a minimal level of change. The identification and significance of such changes are being addressed in other EIS technical studies. However, it is important here to address the perceptions of these impacts within local and regional communities.

As stated in Section 5.1, there has been significant media attention around the perceived impacts of the dredging on the Great Barrier Reef, and the affect that this will have on the tourism and commercial fishing industries. Further, the community is concerned about the potential impacts of the proposed DMCPs on the Caley Valley Wetlands. As the wetland is not accessible to the public, it has limited direct (non-traditional owner related) cultural and provisioning service values in terms of recreation or tourism. However, as stated in Section 5.1, community members are aware of the wetland and its environmental values, and are particularly concerned about the effects of future development on these values (BMT WBM, 2015).

These concerns were repeatedly raised during public consultation on the Abbot Point Port and Wetland Strategy, with community concerns pertaining predominantly to:

- The siting of the DMCPs within the Caley Valley Wetlands
- Perceived impacts on the Great Barrier Reef and subsequently the tourism industry, due to:



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- Port operations and shipping movements
- Climate change (Galilee Basin coal mining developments and mined coal combustion)
- Impacts on commercial and recreational fishing.

To address these concerns, and alleviate potential environmental impacts, the current Project has located DMCPs outside the Caley Valley Wetlands. This change significantly reduces any potential impacts to the wetland, and may work to potentially alleviate concerns the community has in regard to the perceived degradation of the environmental and cultural significance of the area.

DSD acknowledges that the Project will further intensify the port operations in the local area. However, this is somewhat mitigated by the fact that the port is a part of the fabric of the local area and regular port expansion over the past 30 years has been an ongoing occurrence. Further, port expansion will not encroach local residential areas, nor affect the rural-coastal characteristics that the Bowen community values. Site topography limits visibility of the coal terminals and DMCPs from local homesteads and the Bruce Highway, which is located approximately 10km from the project site.

#### **Proposed mitigation measures**

The Project has considered the community's previous concerns in relation to potential impacts on the environmental values of the area, and has designed significant elements of the Project to address these concerns. Specifically the project design:

- Minimises the offshore dredging volumes and disturbance areas
- Avoids wetland and associated habitats for conservation of significant species
- Utilises a cutter-suction dredger to maximise sediment recovery
- Excludes the construction of rail embankments.

Any potential changes to the natural environment during construction will be managed through the development and implementation of a Construction Environmental Management Plan and Dredging Management Plan, which will be developed based on the outline plans submitted as part of the EIS.

Further, as part of the management of environmental, economic and social impact issues associated with the Project, DSD is committed to open and transparent dialogue with project communities and stakeholders, to ensure that management strategies are shared in a timely manner.

#### **6.3.2.2 TOURISM IMPACTS**

Dredging around the Great Barrier Reef Marine Park has been one of the most controversial environmental issues of recent years, particularly for the Bowen community who perceive





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that the dredging and shipping activities for the Port of Abbot Point may have adverse effects on their tourism industry. More specifically, residents have raised concerns about the long-term health of the Reef, particularly in relation to the perceived impacts of port development and dredging on water quality:

*"From a tourism operator's perspective, my concern is particularly in relation to the quality of the water and the health of the Great Barrier Reef. It's already declining, but the reef can't stand any more sediments" [Alan Grundy, Explore Whitsundays] (Carter, 2014).*

However, a media analysis identified that not all residents echo these concerns, with the Whitsunday Regional Residents Association indicating that Bowen needs the economic benefit of the expansion and the misguided concerns about dredging will cost locals jobs (Taylor, 2014).

Further, the Bowen Tourism organisation feels that the tourism industry has remained resilient in Bowen's flailing economy and perceives that any concern for the reef is not stopping tourists from visiting the area (Smith, 2015).

The UNESCO's World Heritage Committee recently made the decision not to list the Great Barrier Reef as 'in danger', which is a significant reprieve for the Queensland and Australian governments and the Queensland tourism industry (Sturmer, 2015). Whilst the decision flagged concerns about the long-term health of the reef, the Queensland and Australian governments' efforts to manage the impacts on the reef were highly regarded by UNESCO:

*"Measures that represent significant progress in responding to key World Heritage Committee requests include commitments toward restoring water quality... restricting major port development in and adjoining the GBR World Heritage Area ... [Australia reversing] its original decision to dump capital dredge[d] material from Abbot Point inside the property and a permanent ban on dumping of dredged material from all capital dredging projects within the property" (Sturmer, 2015).*

The Queensland and Australian governments' ongoing commitment to maintaining the health of the reef is further demonstrated in its recent decision to not proceed with the placement of dredged material offshore in the Great Barrier Reef Marine Park as part of this Project.

### **Proposed mitigation measures**

The Project has considered the community's previous concerns in relation to potential impacts on the Great Barrier Reef, and has designed significant elements of the Project to address these concerns. Specifically the project design:

- Minimises the offshore dredging volumes and disturbance areas - the Project involves dredging 1.1 Mm<sup>3</sup> *in situ* of seabed. TO proposed dredging area is approximately 61ha of seabed within port limits, outside the Great Barrier Reef Marine Park and, 19km and 30km away from the nearest coral communities.



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- Utilises a cutter-suction dredger to maximise sediment recovery - this will substantially reduce release of fines material and minimise dredging plumes. Scientific modelling has found that sediment will be highly localised to the dredging site and will not impact on the Great Barrier Reef Marine Park (Queensland Government, 2015).

### 6.3.2.3 COMMERCIAL AND RECREATIONAL FISHING IMPACTS

According to Bond University (2015), port activities and commercial and recreational fishing at Abbot Point have co-existed previously, and there is no reason why they cannot continue to co-exist following the proposed port expansion.

The paramount concern of local commercial and recreational fishermen is the potential temporary loss of access to fishing grounds - either directly or indirectly. In the case of this Project, loss or modification of fishing access may occur as a result of:

- Plumes associated with dredging
- Previously trawlable ground becoming untrawlable as a result of changes to the seabed from dredging and the presence of pipelines (Bond University, 2015).

The proposed dredging activities are limited spatially to the Port of Abbot Point Strategic Port Land (within the Abbot Point port limits) and are temporary in nature. As such, any impacts on commercial and recreational fishing are anticipated to be minimal.

Whilst recreational and commercial fishing routinely occurs within port limits, port authorities and the Regional Harbour Master have the power to declare exclusion zones for safety and security reasons. Access to the T0 dredging footprint and immediate surrounds (including the pipeline infrastructure corridor) within port limits, and in close proximity to the existing wharfs and jetty areas for fishing activities, may be controlled during the short dredging campaign.

In the past, the local community have also expressed concern that the dredging and associated dredging plumes will affect fish habitat; specifically seagrass meadows, which are the main food source for dugongs and green turtles and provide nursery habitat for many commercial fisheries species. The offshore seagrasses at Abbot Point are typically of light density, are dynamic in their presence and comprised of pioneering species. Changed access and potential loss of fishing habitat can often result in displacement of fishing effort, with recreational and commercial fishers required to fish in another location and/or in another fishery. Displacement of fishing effort is a potential negative issue for the fishery as a whole as it can result in greater concentrations of fishers in particular areas, thus placing unsustainable pressure on local fish stocks and potentially reducing economic returns for individual fishers. These concerns were raised in public submissions on the Draft Public Environment Report (PER) prepared for NQBP in 2013, with submissions stating:

*“If Abbot Bay fish catches drop because of loss of habitat caused by the dredging plume, fishing effort will be displaced. The obvious place both commercial and recreational fishers*



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*will transfer to, is the Burdekin district. This will not only cause increased conflict with locals, but also will obviously have a direct, negative financial impact to my business”* [community member, 2013] (CDM Smith, 2013b).

However, the T0, T2 and T3 Capital Dredging Project proposed by NQBP, and the subject of the PER (CDM Smith, 2013), included the offshore disposal of dredged material which was a key concern for commercial and recreational fishers as it had the potential to adversely impact mackerel and scallop fishing grounds.

The proposed onshore disposal of dredged material as part of this Project effectively eliminates these potential impacts, and should therefore alleviate the potential concerns of local commercial and recreational fishers.

In addition, given the reliance of local seafood processing and retail businesses on commercial fishing in the Bowen region, any reduction in commercial fishing catch and effort may potentially result in a flow-on impact to these local seafood businesses (Bond University, 2015). These flow-on effects may occur as a result of reduced demand for supplies (e.g. fuel and ice), a reduction in unloading fees, and a reduction in local product that can be sold in retail outlets (Bond University, 2015). The loss of commercial fishers to work directly in the mining and construction projects was also highlighted as potential flow-on impact that could impact the local seafood industry.

Recreational fishing participation in the Mackay Statistical Division (which includes Bowen) has been increasing over time, with boat ownership also on the rise (Bond University, 2015). Recreational fishing and boating are popular and highly valued activities in the local Bowen community, as evidenced through public submissions on the Abbot Point Port and Wetland Strategy.

The proposed use of a cutter-suction dredger for dredging activities will limit the dredging plume and subsequently reduce the duration and extent of any associated water quality impacts (e.g. turbidity, re-suspension, light availability etc.). As such, the proposed dredging activities are predicted not to have a significant impact on potential or actual seagrass habitat beyond the direct dredging footprint and therefore, any displacement of fishing effort, or flow-on impacts on the local seafood processing and retail businesses is unlikely to occur.

Conversely, research indicates that an influx of workers into a community may generate positive impacts for businesses that support recreational fishing activities, particularly bait and tackle businesses and fishing charter operations, as well as potential seafood retailers. As such, the workers associated with this Project may positively impact the local fishing and tourism industry, with workers and their families looking to participate in recreational activities while off roster.



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### Proposed mitigation measures

The Project has considered the community’s previous concerns in relation to potential impacts on access to commercial and recreational fishing areas, and has redesigned significant elements of the Project to address these concerns, which were raised as specific issues regarding prior dredging proposals. Specifically the project design:

- Minimises the offshore dredging volumes and disturbance areas
- Avoids wetland and associated habitats for conservation significant species
- Utilises a cutter-suction dredger to maximise sediment recovery and limits fugitive sediment entering the marine environment.

Further, a Dredging Management Plan will be implemented to manage any potential impacts associated with dredging activities, in accordance with the Outline Dredging Management Plan submitted as part of the EIS.

**Table 6-4 Community values and lifestyle - impact and mitigation summary**

Impact	Affected stakeholders	Impact	Mitigation Measure	Residual Impact
Community uncertainty and anxiety around the economic climate in Bowen should proposed development at the Port of Abbot Point not go ahead.	<ul style="list-style-type: none"> <li>• Local community</li> <li>• Local business</li> </ul>	MEDIUM	<ul style="list-style-type: none"> <li>• Implement proactive community engagement strategies to facilitate the provision of timely and accurate project information.</li> </ul>	LOW
Impacts on the environmental values of communities, associated with the Caley Valley Wetlands near Abbot Point.	<ul style="list-style-type: none"> <li>• Local community</li> <li>• Local business</li> </ul>	LOW	<ul style="list-style-type: none"> <li>• The Outline Environmental Management Plan will be further developed into a Construction Environmental Management Plan, and implemented to manage potential environmental impacts during construction.</li> <li>• Provide regular updates to local communities in regard to mitigation</li> </ul>	LOW



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Impact	Affected stakeholders	Impact	Mitigation Measure	Residual Impact
			measures and monitoring.	
Reduced environmental amenity and tourism opportunities due to perceived impacts on the Great Barrier Reef Marine Park.	<ul style="list-style-type: none"> <li>Local community</li> <li>Regional community</li> <li>Local businesses</li> <li>Regional businesses</li> <li>Government agencies</li> </ul>	MEDIUM	<ul style="list-style-type: none"> <li>Dredging will not occur in the Great Barrier Reef Marine Park.</li> <li>Offshore dredging areas have been minimised.</li> <li>A cutter-suction dredger will be utilised to maximise sediment recovery.</li> </ul>	LOW
Reduced opportunities for commercial and recreational fishing.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> </ul>	LOW	<ul style="list-style-type: none"> <li>Potential impacts will be managed through the implementation of a Dredging Management Plan that will be further developed based on the Outline Dredging Management Plan.</li> </ul>	LOW

### 6.3.3 Housing and accommodation

Historically, regional communities have been concerned that projects with large workforces and/or the cumulative effects from a number of projects have suddenly and significantly altered local housing supply. This has often led to decreased housing affordability and higher living costs, particularly for those not employed in the resources sector (GHD, 2013).

However, as detailed in Section 5.3, the downturn in the mining industry has contributed to falling purchase and rental prices and increased vacancy rates in Bowen and the broader Whitsunday LGA. As a result, there is almost an oversupply of housing available for rent or purchase in Bowen:

*“With the tomato season happening now, home vacancies would normally be unheard of.... Things will turn around, but it's going to take time,” [Mike Lyon, LJ Hooker Bowen] (Lees, 2014).*



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The Bowen community has also identified a preference for workers to live within the community and have demonstrated a capacity and willingness to accommodate a growing resident population. With this in mind, non-resident workers involved in construction of the Project will be encouraged to reside locally in Bowen. Given the current vacancy rates, it is anticipated that this approach will assist in boosting the local housing market:

*"The uncertainty around the Abbot Point terminal [is] having an impact [on the housing market]. Once they solve the Abbot Point problems things will get better" [Mike Lyon, LJ Hooker Bowen] (Lees, 2014).*

It is acknowledged that a proportion of the population in Bowen is transient in nature due to the agricultural and tourism industry. As such, demand for short-term accommodation, such as hotel, motel or caravan park accommodation is relatively high. In addition, the transient, seasonal population generated by the agricultural and tourism industry, coupled with Abbot Point expansion projects may exacerbate housing availability during peak demand periods such as from September to April each year, which is the peak tourism and harvest season (GHD, 2013). However, the construction workforce is not expected to impact on short-term accommodation options as persons relocating to Bowen for construction will be encouraged to rent houses, units and townhouses for the duration of the Project.

Any consultants and/or short-term contractors required to visit the project site during the construction phase are likely to utilise short-term accommodation. However, any potential impact on short-term accommodation is likely to be negligible given the visits will be temporary in nature and will involve a small number of people.

From a cumulative perspective, it is recognised that some local residents may be concerned that a number of proposed projects may commence at the same time, and that the Project's demand for housing may impact cumulatively on housing availability and affordability. Although a number of other projects are proposed to occur at the Port of Abbot Point, a review of other proponents' EIS documentation (i.e. Adani Mining's North Galilee Basin Rail EIS) indicates that project construction workforces will be accommodated in temporary accommodation camps to reduce impacts on the housing availability and affordability. As such, the likelihood of this Project contributing to cumulative impacts on housing availability and affordability is considered low.

### **Proposed mitigation measures**

The Project is committed to ensuring the construction workforce will not adversely impact on housing and accommodation in Bowen. To reduce any impacts to the accommodation needs of the seasonal agricultural and tourism industries, non-resident workers for the Project will be encouraged to rent houses, units and townhouses for the duration of construction.

To manage potential cumulative impacts on the housing market, DSD will communicate with Whitsunday Regional Council and other proponents in the area to understand housing needs in the area, and monitor the Project's impact on the Bowen housing market.



**Table 6-5 Housing and accommodation - impact and mitigation summary**

Impact	Affected stakeholders	Impact	Mitigation Measure	Residual Impact
Potential decrease in availability of local housing and short-term accommodation in Bowen.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> </ul>	LOW	<ul style="list-style-type: none"> <li>Non-resident workforce to be accommodated in houses, townhouses or units in Bowen.</li> <li>Vacancy rates of short-term accommodation to be monitored in collaboration with Council for the period of construction.</li> </ul>	LOW
Potential cumulative impacts on housing availability and affordability, potentially leading to housing stress for vulnerable groups.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local businesses</li> </ul>	LOW	<ul style="list-style-type: none"> <li>Work with Whitsunday Regional Council and other proponents in the area to understand housing needs, and monitor the Project's impact on the Bowen housing market.</li> </ul>	LOW

### 6.3.4 Community infrastructure and services

Development projects often result in increased populations of resident and non-resident workers, which can place pressure on social and community services and infrastructure if not predicted and/or managed appropriately (GHD, 2013).

The Project may employ a combination of existing Bowen residents and those workers who relocate to Bowen for the duration of the construction phase. The contribution of the Project to the population of Bowen cannot be predicted at this stage. However, as the number of workers required is small and temporary in nature, any increase in population is expected to be less than what has already been factored into population forecasts produced by the QGSO.

As identified in Section 5.4, it is considered that existing social infrastructure and services will likely be able to cope with any additional demands generated by the Project. However, health and emergency service providers in Bowen are currently experiencing some shortages, particularly in relation to staff and service provision (i.e. emergency response capabilities, allied health etc.).





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These existing shortfalls and challenges to health service provision in the study area are not expected to be further exacerbated by this Project. However, it is possible that the Project may contribute to cumulative impacts on these pre-existing issues. The magnitude of the potential cumulative impacts on the local health services will be dependent on the breakdown of the local and non-local workforce. Should a significant proportion of the project workforce be recruited locally, this will reduce the additional impact on local health services as they would already be accounted for within the local health service catchment.

Non-resident workers who choose to reside in Bowen with their families during the construction phase of the Project will likely rely on local medical services for themselves and their families. However, potential impact on these services is dependent on the size of the non-resident workforce that moves to Bowen during construction, together with the timing of other projects in the area which cannot be determined at this stage.

As experienced in the Whitsunday LGA, the non-resident workforce places significant pressure and demand on existing services and infrastructure. For example, consultation for the North Galilee Basin Rail project (GHD, 2013) found that the Bowen hospital has experienced an increase in emergency cases which are often cases that could be addressed by a General Practitioner. This affects the hospital's ability to cater to real emergencies.

A review of EISs prepared for other projects in the region highlighted the local community's concerns about safety and amenity as a result of increased traffic on local roads. Access to the project site will be exclusively from the Western Access Road via Abbot Point Road. Both roads are private roads which are under the control of NQBP.

From Abbot Point Road, access to the public road network is only via the Bruce Highway/Abbot Point Road intersection. There are no other connections from Abbot Point Road to the public road network. Further, access to the project site does not require use of any local government controlled roads.

The traffic impact assessment undertaken for the Project (WorleyParsons, 2015) found that project-generated traffic will have minimal impact on the traffic and land capacity of the Bruce Highway, and will have no impacts on local roads in and around Bowen township.

### **Proposed mitigation measures**

DSD will proactively share project information with Whitsunday Regional Council and service providers to ensure they are aware of project timing and workforce forecasts to adequately plan for cumulative increases in population and potential demand for services.

To minimise any potential impacts on the already strained health and medical services, site-related medical issues will be dealt with largely on-site by site first aid services. Workers will also be required to undertake fit-for-duty health screening prior to employment.

Emergency management planning for the Project is in progress and will involve consultation with emergency services and local and regional disaster management groups. To ease the potential impact on the Queensland Fire and Rescue Services, there will fire-fighting facilities





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on site, and staff with the relevant qualifications and experience to operate these firefighting facilities in an emergency situation.

In order to reduce construction workforce-related traffic, a bus service will be provided by the project contractor for local residents commuting from Bowen. Further, a Traffic Impact Management Plan will be developed to address traffic-related issues associated with the Project.

**Table 6-6 Community infrastructure and services - impact and mitigation summary**

Impact	Affected Stakeholders	Impact	Mitigation Measure	Residual Impact
Increased pressure on existing social infrastructure services and facilities due potential local population influx.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> <li>Government agencies</li> </ul>	LOW	<ul style="list-style-type: none"> <li>Proactively share project information with Whitsunday Regional Council and service providers to ensure they are aware of project timing and workforce forecasts to adequately plan for cumulative increases in population and potential demand for services.</li> </ul>	LOW
Increased demand on regional emergency services including fire and rescue, police and ambulance.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> <li>Government agencies</li> </ul>	LOW	<ul style="list-style-type: none"> <li>Provide on-site first aid medical services for construction workforce.</li> <li>Prepare and implement Emergency Management Plan for Project.</li> </ul>	LOW
Heightened road safety risk as a result of traffic increases and road conditions during construction.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> </ul>	LOW	<ul style="list-style-type: none"> <li>The project contractor will provide bus services for local residents commuting from Bowen.</li> <li>Develop a project-wide Traffic Impact Management Plan that addresses traffic-related issues associated with the Project.</li> </ul>	LOW



## 6.4 Impact assessment summary

Once mitigation strategies are implemented, the Project will create employment opportunities, business opportunities, and will be a boost to the local, regional and State economies.

Over the short-term these opportunities are created directly by the Project, while over the longer term opportunities relate more to the flow-on effects from the Project providing access to coal mining in the Galilee Basin.

Potential adverse impacts on community infrastructure and services, and any potential housing and accommodation issues, are likely to be avoided through the application of the proposed mitigation measures, although the likelihood of the impacts occurring is considered low due to the small workforce and temporary nature of the construction phase.

The potential impacts on the natural environment can be reduced and managed through the proposed mitigation measures detailed in other technical studies prepared for the EIS.

Table 6-7 presents a summary of the pre-and post-mitigation impact ratings. While some impacts do not reduce in their significance level (e.g. 'high' to 'medium' or vice versa), the severity level within that rating would have changed and is evidenced in the detailed impact assessment.

**Table 6-7 Impact and residual impact summary**

Potential impact	Nature and Extent	Significance	
		Before Mitigation / Enhancement	After Mitigation / Enhancement
<b>Employment and business opportunities</b>			
Increased opportunities for local and regional businesses in Bowen and broader Whitsunday LGA.	Positive <i>Regional</i>	MEDIUM	MEDIUM
Increased opportunities for local and regional employment.	Positive <i>Regional</i>	MEDIUM	MEDIUM
<b>Community values and lifestyle</b>			
Community uncertainty and anxiety around the economic climate in Bowen should proposed development at the Port of Abbot Point not go ahead.	Negative <i>Regional</i>	MEDIUM	LOW
Impacts on the environmental values of	Negative	LOW	LOW



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Potential impact	Nature and Extent	Significance	
		Before Mitigation / Enhancement	After Mitigation / Enhancement
communities, associated with the Caley Valley Wetlands near Abbot Point.	<i>Local</i>		
Reduced environmental amenity and tourism opportunities due to perceived impacts on the Great Barrier Reef Marine Park.	Negative <i>State</i>	MEDIUM	LOW
Reduced opportunities for commercial and recreational fishing.	Negative <i>Local</i>	LOW	LOW
<b>Housing and accommodation</b>			
Potential decrease in availability of local housing and short -term accommodation in Bowen.	Negative <i>Local</i>	LOW	LOW
Potential cumulative impacts on housing availability and affordability, potentially leading to housing stress for vulnerable groups.	Negative <i>Local</i>	LOW	LOW
<b>Community infrastructure and services</b>			
Increased pressure on existing social infrastructure services and facilities due to potential local population influx.	Negative <i>Local</i>	LOW	LOW
Increased demand on regional emergency services including fire and rescue, police and ambulance.	Negative <i>Local</i>	LOW	LOW
Heightened road safety risk as a result of traffic increases and road conditions during construction.	Negative <i>Local</i>	LOW	LOW

## 6.5 Cumulative impacts

While recognising the direct social impacts of the Project on local and regional communities, it is also important to consider the compounded, or cumulative, impacts of the Project in relation to other development activities occurring or planned for the same geographic area.



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As such, potential cumulative socio-economic impacts have been considered in light of the following projects:

- Abbot Point T0 project
- Abbot Point T3 project
- North Galilee Basin Rail project (port end)
- Alpha Rail project (port end).

The cumulative impact assessment was largely quantitative in nature, drawing on desktop information including EISs prepared for the above projects, population reports prepared by the QGSO and regional and local government plans and policies. The Economic Impact Study (Economic Associates, 2015) involved quantitative modelling and this data was drawn upon to inform the impact assessment where relevant.

Information considered in the cumulative impacts assessment, included, but was not limited to:

- Location of the project/s
- Project timeframes (including any planned expansions)
- Workforce requirements
- Proposed housing and transportation model for the workforce
- Potential for individually insignificant but cumulatively significant impacts.

Table 6-8 outlines the impacts where cumulative considerations were accounted for in the impact assessment and subsequent mitigation development.



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Table 6-8 Cumulative considerations

Impact Category	Cumulative Considerations	Relevant SIA Section	Relevant EIS Section
<b>Local business and employment</b>	<ul style="list-style-type: none"> <li>- Workforce recruitment and retention.</li> <li>- Direct or indirect service provision to existing projects by local and regional businesses.</li> </ul>	Section 6.3.1	Economic Impact Study.
<b>Community values and lifestyle</b>	<ul style="list-style-type: none"> <li>- Potential restrictions on fishing access in local area</li> <li>- Further industrialisation of a rural - residential coastal area.</li> </ul>	Section 6.3.2	Outline Dredging Management Plan. Outline Environmental Management Plan.
<b>Housing and accommodation</b>	<ul style="list-style-type: none"> <li>- Increased demand on short-term accommodation market.</li> </ul>	Section 6.3.3	N/A
<b>Community infrastructure and services</b>	<ul style="list-style-type: none"> <li>- Road use and road infrastructure impacts from existing and proposed activities.</li> <li>- Existing demand placed on local emergency, services.</li> <li>- Existing demand placed on local medical services.</li> <li>- Further increases to traffic, particularly port-related traffic (trucks etc.).</li> </ul>	Section 6.3.4	Road Transport Traffic Impact Assessment. Outline Environmental Management Plan.



## 7 SOCIAL IMPACT MANAGEMENT STRATEGIES

A number of mitigation and enhancement strategies have been developed to enhance benefits or avoid/mitigate impacts. Table 7-1 provides an overview of the key actions to facilitate implementation of key management strategies identified in Section 6, to provide greater clarity to stakeholders and community members about the tasks and engagement activities which the DSD proposes to undertake in the further development and implementation of mitigation measures.

The proposed adaptive management strategies have been developed to manage potential adverse social impacts. The management actions use existing frameworks, guidelines, plans and practices, and will continue to be refined as required through the monitoring and reporting process.

**Table 7-1 Social impact management actions**

Key actions	Responsibility	Timeframe
<b>Employment and business opportunities</b>		
Engage with relevant stakeholders; including local government, ICN, Supply Nation, IBA, the Bowen Business Chamber and other business and industry groups focused on economic and business development, to identify local content opportunities.	DSD	Procurement phase
Incorporate local content requirements in tender packages to major contractors.	DSD	Procurement phase
Prepare tender packages in a manner that optimises local industry opportunities while enhancing project competitiveness and value for money.	DSD	Procurement phase
Publish project procurement opportunities and relevant pre-qualification information on Queensland Government tender website and ICN Gateway.	DSD	Procurement phase
Prepare a Local Content Plan in accordance with the Queensland Government's Charter for Local Content.	Project contractor	Procurement phase
<b>Community values and lifestyle</b>		
Implement a Communications and Engagement Strategy which outlines approach to stakeholder engagement, key project messages and communication and engagement protocols including tools, activities	DSD to develop project-wide Stakeholder Engagement Plan. The project	Prior to commencement of construction



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Key actions	Responsibility	Timeframe
and grievance management.	contractor will be required to adhere to overarching plan.	
Provide regular updates to local communities in regard to mitigation measures and monitoring.	DSD and project contractor	Construction phase
<b>Housing and accommodation</b>		
Engage with State agencies, Whitsunday Regional Council, industry proponents and NGOs to monitor the potential cumulative impacts on the Bowen housing market.	DSD	Construction phase
<b>Community infrastructure and services</b>		
Proactively share project information with Whitsunday Regional Council and service providers to ensure they are aware of project timing and workforce forecasts to adequately plan for cumulative increases in population and potential demand for services.	DSD	Prior to commencement of construction
Provide on-site first aid medical services for construction workforce.	Project contractor	Construction phase
Engage with emergency and health services including Queensland Police Service, Queensland Ambulance Service, Queensland Fire & Rescue, Rural Fire Service and State Emergency Services in regard to emergency management planning for the Project.	Project contractor	Prior to commencement of construction
Provide bus services for local workers commuting from Bowen.	Project contractor	Construction phase
Develop and implement Traffic Impact Management Plan that addresses traffic-related issues associated with the Project.	Project contractor	Construction phase



## 8 CONCLUSION

The Abbot Point Growth Gateway Project aims to develop infrastructure to support development to expand the export capacity of the Port of Abbot Point. Dredging of berth pockets and arrival/departure apron is required to provide safe shipping access to the T0 offshore facility.

An SIA was undertaken to assess the socio-economic benefits and impacts of this Project on regional and local communities. The SIA included undertaking detailed desktop investigation of existing statistical data and reports including EISs prepared by the other proponents in the region specifically Adani Mining, GVK Hancock and NQBP.

The SIA for the Project focused on the township of Bowen, as well as the broader Whitsunday LGA, as the Project will likely be serviced by the wider region from the view of supply of workforce, goods and services.

Secondary research undertaken for the SIA found that the local Bowen community place significant value on their rural-coastal lifestyle, and appreciate the natural environment. The Bowen community want the area to grow and develop, however not at the cost of community diversity or by displacing people who already live in the area. The Bowen community have expressed a preference for workers and their families moving to the area in search of employment opportunities with the Abbot Point expansion to live in the Bowen community to strengthen the local economy and encourage population stability.

The Project will provide a number of socio-economic benefits for local and regional communities, including the creation of employment opportunities as well as the potential for increased supply chain opportunities. DSD and its project contractor will prepare and implement local content strategies in accordance with the Queensland Government's Charter for Local Content, to facilitate local employment and business opportunities for Bowen and the broader Whitsunday LGA. Further, the Project will facilitate the expansion of the Port of Abbot Point, which is key component in unlocking the coal resources Galilee Basin and thereby increasing access to international markets. It is also likely that a level of cumulative social benefit may be experienced through an increased regional population, trade opportunities, resultant revenue and potential investment.

Conversely, research found that the community perceive that the Project will have adverse impacts on the natural environment, and subsequent impacts on the tourism and fishing industry. To address these perceptions, and mitigate any potential environmental impacts, the Project locates DMCPs outside the Caley Valley Wetlands, thus minimising potential impacts to the Caley Valley Wetlands. Further, no dredging will occur in the Great Barrier Reef Marine Park or Great Barrier Reef World Heritage Area and stringent controls and management measures will be implemented to reduce potential impacts on marine habitats.





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DSD will apply a range of management and mitigation measures to enhance project benefits and avoid or minimise potential adverse impacts. These are detailed in the social impact management strategies and actions prepared for the Project.



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## **Appendix 1    Impact rating framework**



# WorleyParsons

resources & energy

## FRAMEWORK

### SOCIAL IMPACT (RISK) RATING FRAMEWORK

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#### DEFINITIONS

##### Nature

<b>Positive:</b>	Impacts have a positive or uplifting effect on the project-affected community and stakeholders. The quality of life of affected individuals, households or communities is improved.
<b>Negative:</b>	Impacts have a negative or adverse effect on the project-affected community and stakeholders. The quality of life of affected individuals, households or communities is diminished.
<b>Neutral:</b>	Impacts are neither positive nor negative in nature and have no meaningful effect on project-affected communities and stakeholders.

##### Extent

<b>6</b>	International
<b>5</b>	National (within defined national boundaries)
<b>4</b>	State (within defined state boundaries)
<b>3</b>	Regional (within regional council boundary, or 100 km of Project site)
<b>2</b>	Local communities (nearest township, or communities within 50 km of Project site)
<b>1</b>	Site-specific (within the vicinity of the Port of Abbot Point)

##### Duration

<b>4</b>	Permanent / irreversible
<b>3</b>	Long Term (5-10 years)
<b>2</b>	Medium Term (12 months to 5 years)
<b>1</b>	Short Term (for the duration of construction OR less than 12 months)



## Severity

5	<p><b>Very High</b> Irreparable damage to/destruction of highly valued items of great cultural significance, irreversible reputation damage or a complete breakdown of social order. Affects a large proportion of society.</p>
	<p>Enduring positive impact on social, economic and cultural environment for a large number of people.</p>
4	<p><b>High</b> Serious social issues/temporary cease of systems functioning or wide-reaching community dissent.</p>
	<p>Significant improvement to social, economic or cultural environment or quality of life for a large number of affected people.</p>
2	<p><b>Medium</b> Moderate social issues and/or moderately significant damage to items of cultural significance. Social environment altered but systems continue to function. Localised community impact but may require long term management.</p>
	<p>Moderate improvement to social, economic or cultural environment or quality of life for affected people.</p>
1	<p><b>Low</b> Minor changes to the social environment, which are easily reversible over time; Localised impact among a small group of impacted stakeholders.</p>
	<p>Minor improvement to quality of life and/or social functioning for a small number of individuals or groups.</p>
0	<p><b>Negligible</b> No discernible impacts on the local population, repairable over time. Temporary impairment of the availability of items of cultural significance. Affects only very few people.</p>
	<p>No discernible improvement to quality of life and/or the social, economic or cultural environment. Affects only very few people.</p>

## Probability

4	Almost certain (>90% chance)
3	Probable (51% - 90% chance)
2	Possible (11% – 50% chance)
1	Unlikely (<10% chance)
0	Impossible





## **Appendix 2    Impact significance matrix**

			IMPACT SIGNIFICANCE BEFORE MITIGATION										IMPACT SIGNIFICANCE AFTER MITIGATION							
Social Impact	Affected Stakeholders	Project Phase	Nature (P / N)	Extent	Duration	Severity	Consequence	Probability	Significance / 60	Significance / 100	Mitigation Measures	Nature (P / N)	Extent	Duration	Severity	Consequence	Probability	Significance / 60	Significance / 100	
<b>ECONOMIC DEVELOPMENT</b>																				
Increased opportunities for local and regional businesses in Bowen and broader Whitsunday LGA.	<ul style="list-style-type: none"> <li>Local businesses</li> <li>Regional businesses</li> <li>Government agencies</li> </ul>	Construction	P	3	1	2	6	3	18	30	<ul style="list-style-type: none"> <li>The project contractor will be required to develop and implement a Local Content Plan in accordance with the principles of the Queensland Government's Charter for Local Content.</li> </ul>	P	3	1	2	6	4	24	40	
Increased opportunities for local and regional employment.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local businesses</li> </ul>	Construction	P	3	1	2	6	3	18	30	<ul style="list-style-type: none"> <li>The project contractor will be required to develop and implement a Local Content Plan in accordance with the Queensland Government's Charter for Local Content. The Local Content Plan will align with the Project's recruitment hierarchy based on source location (local, regional, State, national, and international).</li> </ul>	P	3	1	2	6	4	24	40	
<b>COMMUNITY VALUES AND LIFESTYLE</b>																				
Community uncertainty and anxiety around the economic climate in Bowen should the proposed development at the Port of Abbot Point not go ahead.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> <li>Regional business</li> </ul>	Construction	N	3	2	2	7	3	21	35	<ul style="list-style-type: none"> <li>Implement proactive community engagement strategies to facilitate the provision of timely and accurate project information.</li> </ul>	N	3	2	1	6	2	12	20	
Impacts on the environmental values of communities, associated with the Caley Valley Wetlands near Abbot Point.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local businesses</li> <li>Government agencies</li> </ul>	Construction	N	1	1	2	4	2	8	13	<ul style="list-style-type: none"> <li>The Outline Environmental Management Plan will be further developed into a Construction Environmental Management Plan, and implemented to manage potential environmental impacts during construction</li> <li>Provide regular updates to local communities in regard to mitigation measures and monitoring.</li> </ul>	N	1	1	1	3	2	6	10	
Reduced environmental amenity and tourism opportunities due to perceived impacts on the Great Barrier Reef Marine Park.	<ul style="list-style-type: none"> <li>Local community</li> <li>Regional community</li> <li>Local businesses</li> <li>Regional businesses</li> <li>Government agencies</li> </ul>	Construction	N	4	2	2	8	2	16	27	<ul style="list-style-type: none"> <li>Dredging will not occur in the Great Barrier Reef Marine Park</li> <li>Offshore dredging areas have been minimised</li> <li>A cutter-suction dredger will be utilised to maximise sediment recovery.</li> </ul>	N	4	1	1	6	2	12	20	
Reduced opportunities for commercial and recreational fishing.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local business</li> </ul>	Construction	N	2	2	2	6	2	12	20	<ul style="list-style-type: none"> <li>Potential impacts will be managed through the implementation of a Dredging Management Plan, that will be further developed based on the Outline Dredge Management Plan.</li> </ul>	N	2	2	1	5	2	10	17	
<b>HOUSING AND ACCOMMODATION</b>																				
Potential decrease in availability of local housing and short-term accommodation in Bowen.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local businesses</li> </ul>	Construction	N	2	1	2	4	2	8	13	<ul style="list-style-type: none"> <li>Non-resident workforce to be accommodated in houses, townhouses or units in Bowen</li> <li>Vacancy rates of short-term accommodation to be monitored in collaboration with Whitsunday Regional Council for the period of construction.</li> </ul>	N	2	1	2	4	2	8	13	
Potential cumulative impacts on housing availability and affordability, potentially leading to housing stress for vulnerable groups.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local businesses</li> </ul>	Construction	N	2	2	2	6	2	12	20	<ul style="list-style-type: none"> <li>Work with Whitsunday Regional Council and other proponents in the area to understand housing needs, and monitor the Project's impact on the Bowen housing market.</li> </ul>	N	2	2	2	6	2	12	20	
<b>COMMUNITY INFRASTRUCTURE AND SERVICES</b>																				
Increased pressure on existing social infrastructure services and facilities due potential local population influx.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local service providers</li> <li>Government agencies</li> </ul>	Construction	N	2	1	2	5	2	10	17	<ul style="list-style-type: none"> <li>Proactively share project information with Whitsunday Regional Council and service providers to ensure they are aware of project timing and workforce forecasts to adequately plan for cumulative increases in population and potential demand for services.</li> </ul>	N	2	1	1	4	2	8	13	
Increased demand on regional emergency services including fire and rescue, police and ambulance.	<ul style="list-style-type: none"> <li>Local community</li> <li>Local service providers</li> <li>Government agencies</li> </ul>	Construction	N	2	1	3	6	2	12	20	<ul style="list-style-type: none"> <li>Provide on-site first aid medical services for construction workforce</li> <li>Prepare and implement Emergency Management Plan for Project.</li> </ul>	N	2	1	3	6	1	6	10	
Heightened road safety risk as a result of traffic increases and road conditions during construction.	<ul style="list-style-type: none"> <li>Local community</li> <li>Government agencies</li> </ul>	Construction	N	2	1	1	4	2	8	13	<ul style="list-style-type: none"> <li>The project contractor will provide bus services for local residents commuting from Bowen</li> <li>Develop a project-wide Traffic Impact Management Plan that addresses traffic-related issues associated with the Project.</li> </ul>	N	2	1	1	4	1	4	7	