



bhpbilliton
resourcing the future

Section 7
Existing Social Environment



7 Existing Social Environment

7.1 Regional Context

The Pilbara region is sparsely populated, with a total resident population of approximately 45,000 people (Australian Bureau of Statistics 2008).

The majority of the Pilbara's residents are centred in the towns of Port Hedland, Karratha, Newman, Tom Price, Paraburdoo, Roebourne, Wickham, Dampier, Onslow and Marble Bar. Its indigenous population, resident both in indigenous communities and mainstream settlements, has steadily increased in recent years, from 4,247 in 1991 to 4,896 in 1996 to 5,660 in 2006.

The Town of Port Hedland is one of the largest settlements in the Pilbara region, with a total population of approximately 14,072 (ABS 2009). The population fluctuates in relation to the construction and operation phases of major resource and related infrastructure projects (Pilbara Development Council (PDC) 2003).

The Town of Port Hedland includes the Port Hedland town site, South Hedland (located 15 km inland), Wedgefield (located 4 km inland) as well as outlying pastoral stations and indigenous communities. Wedgefield was established as a light industrial area in 1965 to support the mining sector. The development of caretaker dwellings was permitted in Wedgefield under the original Town Planning Scheme (Town of Port Hedland 2008a). Since its establishment, general industries as well as residential homes and accommodation facilities have been developed in Wedgefield (Town of Port Hedland 2008a).

Port Hedland Port is a key export centre for many of the mines in the Pilbara region, and a range of commodities are exported including iron ore, salt, manganese ore, chromite ore, copper concentrate and general cargo. Other industries within the Port Hedland area predominantly relate to pastoral use and tourism.

BHP Billiton Iron Ore (as BHP Limited) commenced operations in the Pilbara in 1966 and is the largest exporter from the port of Port Hedland and one of the largest iron ore companies operating in the Pilbara. During its more than 40 year association with the Pilbara region, BHP Billiton Iron Ore has played an active role in local communities and the economy, working in partnerships developed through long standing relationships with local industry, State and Local Governments to support development in the Pilbara and ensure that wealth generated from natural resources helps drive sustainable community development.

7.2 Town of Port Hedland Plans

The Town of Port Hedland is responsible for the regulation of use and development of land within its area. The Town of Port Hedland's *Land Use Master Plan* (Town of Port Hedland 2007a), *Plan for the Future 2008 – 2013* (Draft) (Town of Port Hedland 2008a), *Town Planning Scheme No.5* (Town of Port Hedland 2008b), Port Hedland City Growth Plan and *Hedland's Future Today* (2007b) provide the key strategic guidance for land use and development.

The *Land Use Master Plan* has been developed by the Town of Port Hedland as a guide to the growth and development of Port Hedland during the next 20 to 25 years. It defines the community's long range vision of how the town should develop and will be incorporated into future statutory regulations controlling the location and form of future development (Town of Port Hedland 2007a).

The *Plan for the Future 2008 – 2013* (Draft) provides guidance on development plans and goals that the Town of Port Hedland intends to implement. Key focus areas include town infrastructure, community pride, community development, economic development, environment and governance (Town of Port Hedland 2008a).

Town Planning Scheme No.5 outlines land use zones, plans and procedures for development within the Town of Port Hedland (Town of Port Hedland 2008b). The proposed Boodarie Industrial Estate reserves land south west of the town for "strategic industry", specifically downstream processing operations capitalising on the mineral resources of the region. The only development within this estate is a gas-fired power station, which provides power to the town. BHP Billiton Iron Ore's partially decommissioned HBI Plant is located on an adjacent but separate parcel of land, immediately north of the proposed Boodarie Industrial Estate.

The Port Hedland City Growth Plan is being prepared by the Town of Port Hedland. This plan will guide the growth and development of Port Hedland to 40,000 to 50,000 people moving forward. The City Growth Plan will define the vision for the Port Hedland City, both in a spatial and non-spatial context, and will have as its focus a separate Implementation Plan, to provide the Town of Port Hedland and the 'Pilbara Cities' Office with a basis upon which to manage the implementation of the Growth Plan. It will include actions required to progress and be informed through:

- ▶ prioritisation and sequencing;
- ▶ budgets and funding availability; and
- ▶ resourcing and governance.

Hedland's Future Today (now in its third iteration) is an 'Action Blueprint', which articulates the vision to transform Port Hedland into a vibrant and liveable town through a fast tracked investment program that will support the Western Australian and Australian economies. It has a number of aims including:

- ▶ describing the investment required from the Western Australian State Government, Commonwealth Government and other stakeholders for the effective development of essential infrastructure and services in Port Hedland that will make it a more attractive place for people to live, work, shop and recreate;
- ▶ redressing the negative impacts on the quality of life for residents of Port Hedland and South Hedland due to the current lack of amenity and community dysfunction;
- ▶ articulating a phased approach to community development, by building on the outcomes already achieved through the close collaboration of key stakeholders; and
- ▶ providing an effective model for the integrated and cost effective delivery of infrastructure and community services across the Pilbara, through the development of cross sector partnerships.

Pilbara Cities (Department for Regional Development and Lands 2010) is a project which is focused on key delivery initiatives involving health, energy, water, housing and community development for communities in the Pilbara region, including Karratha, South Hedland, Newman and Roebourne and Tom Price. *Pilbara Cities* supports initiatives including industry diversification, indigenous participation, cultural enhancement and infrastructure development and is funded through the Royalties for Regions program. Specific development plans for Karratha and Newman have recently been released. The Port Hedland development plan is being developed by the Town of Port Hedland and is scheduled for completion by July 2011. As part of a greater commitment to responsive regional planning, the Western Australian Planning Commission (WAPC) has prepared a Regional Framework for the Pilbara - a regional planning strategy. The first stage of this process was the publication of a regional profile which is complete. The document attempts to encapsulate the essence of the region - its values, character, motivators, challenges and drivers for change.

Recent commitments from the State Government through the Royalties for Regions program have allocated A\$300 million over the next three years for the revitalisation of the Pilbara through tiered grants to the Pilbara local government authorities.

This funding will be leveraged through partnerships with industry and government agencies to invest in priority community projects.

7.3 BHP Billiton Iron Ore's Community Development strategy

BHP Billiton Iron Ore has developed a Community Development Strategy that provides a framework for working with communities to create a positive legacy for future generations. The aim is twofold: to effectively manage the impacts of growth and to contribute to society by delivering lasting social, environmental and economic benefits over the longer term. The Strategy is based on research and continuous community engagement, and actively seeks community involvement in community planning. It enables BHP Billiton Iron Ore to identify and support the key factors influencing the development of host Pilbara communities and actively contribute to the communities over and above the economic benefits delivered by the business (BHP Billiton Iron Ore 2009d).

The challenges and opportunities associated with growth are not unique to one project or one organisation in the town of Port Hedland. The program is backed by local and state government and peak industry bodies, ensuring that partnering initiatives complement and improve development plans for the region. The Community Development Program operates within a formal governance framework and reflects the values expressed in BHP Billiton Iron Ore's Charter, the Code of Business conduct, Sustainable Development Policy and ultimate goal of Zero Harm (BHP Billiton Iron Ore 2009d).

During the 2009/2010 financial year, BHP Billiton Iron Ore invested A\$36 million in the areas of greatest community need in the Pilbara. Substantial contributions were made to health (A\$3.6 million), education (A\$8.9 million) and infrastructure (A\$13.5 million). Two long term landmark agreements with the Department of Health and the Department of Education were further developed to ensure ongoing improvements to health and education in the Pilbara. In the area of health, the Company's Pilbara Health Partnership continues to support a range of initiatives. A further A\$6.6 million was invested in partnerships to benefit indigenous communities.

BHP Billiton Iron Ore also supports a 'Matched Giving Program' which encourages the workforce to take an active role in creating sustainable communities. In the 2009/2010 financial year employees contributed over A\$600,000 which was matched by BHP Billiton Iron Ore.

BHP Billiton Iron Ore will continue to support the development of healthy communities and robust, diversified economies in the region. Based on current forecasts, in financial year 2011 BHP Billiton Iron Ore will invest approximately A\$50 million in community programs (BHP Billiton Iron Ore 2009d).

7.4 Economic profile

The value of Western Australia’s mineral and petroleum industry reached \$70.9 billion in 2009/10. This remarkable result was achieved during a challenging economic period and featured record results from iron ore and the gold sector (DMP 2010).

Despite lower overall average iron ore prices and a stronger Australian dollar the value of the State’s resources industry almost equalled its previous record of \$71.3 billion which was reached in 2008/09. On average, over the past ten years the resource industry’s performance has grown a healthy 14% (DMP 2010).

Western Australia leads all other States with mining investment. The latest Australian Bureau of Statistics investment figures for 2009/10 show the amount of capital expenditure on mining in Western Australia amounted to \$21.7 billion which was a 7% decrease compared to the previous financial year. This also represented 71% of the State’s total (\$30.4 billion) new capital expenditure for 2009/10 (DMP 2010).

Iron ore remained the State’s largest sector in terms of value accounting for \$33.7 billion or a massive 48% of total sales in 2009/10. On average, during the past ten years the value of iron ore has increased by a massive 28% per annum. The sector shipped record tonnages of iron ore in 2009/10, increasing by 25% to reach 396 Mt (DMP 2010).

The State’s mineral and petroleum resources in order of value for 2009/10 are outlined in **Figure 7.1**.

In the 2009/10 financial year the Port witnessed 12% growth with a record trade level of 178.6 Mt. Port

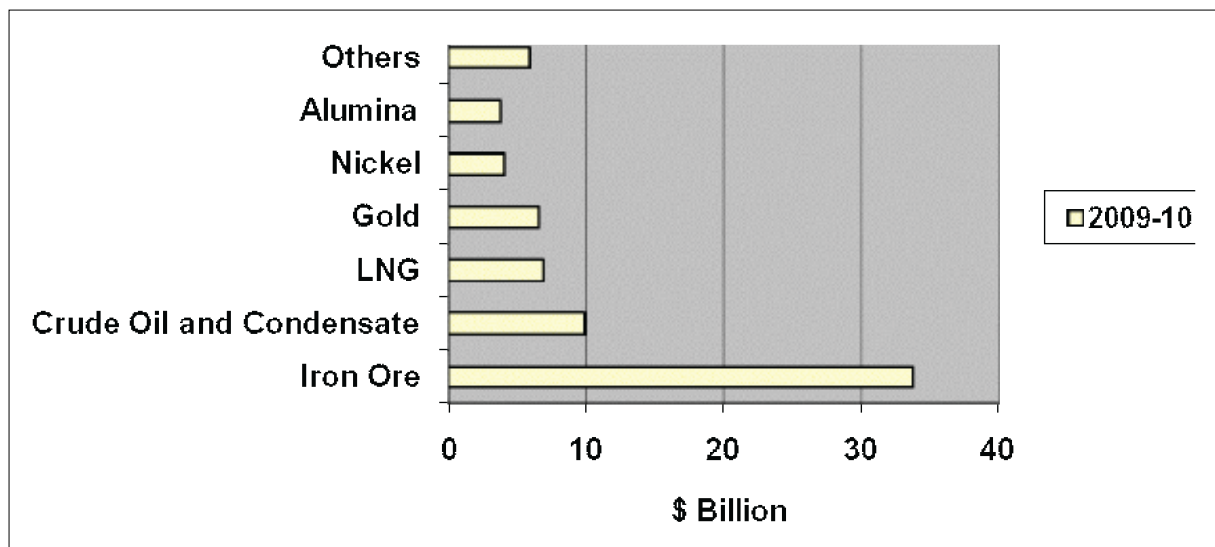


Figure 7.1 – Western Australian Major Commodities by Value

Source: DMP 2010

Hedland maintained the titles of the largest tonnage port in Australia, largest bulk export port in the world as well as the largest iron ore port in the world (Port Hedland Port Authority (PHPA) 2010).

7.5 Regional Infrastructure and Social Services

While the Pilbara region is heavily reliant on the resources sector for its economic well being, the ongoing sustainability of the region will ultimately be determined by the liveability of the towns, access and protection of natural and cultural values, and the level of service the region can attract (DPI 2009).

The provision of facilities and infrastructure within the Town of Port Hedland has been closely linked to the historic development of the Port Hedland and South Hedland town sites and the development of the existing port berths. Regional infrastructure and social services however, have come under pressure from a number of concurrent and significant resource developments both in Port Hedland Port and regionally including BHP Billiton Iron Ore growth projects, Fortescue Metals Group (FMG) port developments and port expansions by the PHPA to meet increasing bulk commodity export requirements. During construction Port Hedland experiences significant increases in fly-in fly-out populations who, to some degree, utilise existing infrastructure and services, placing them under pressure (ERM 2009).

Community consultation has confirmed that a lack of infrastructure and services are key concerns for residents of the Town of Port Hedland (refer to **Section 4**) and in a recent community survey conducted by the Town of Port Hedland, fewer than 6 out of 10 residents said they would still be there in three years. The main reasons cited for leaving were:

- ▶ cost of living;
- ▶ lack of educational opportunities for their children; and
- ▶ lack of community facilities (Town of Port Hedland 2007b).

Residential population projections for the Town of Port Hedland show a potential increase of some 4,000 residents from 2006 to 2010 based on a range of sources including individual company data, publicly available information on company investment plans and input from the Department of Industry and Resources (PICC 2008a). This increase will have flow on effects on infrastructure and services, potentially increasing prices and reducing accessibility to services.

Continual improvement in the level of social

amenities and cultural services, reflecting the community aspirations and needs, is necessary for the attraction and retention of individuals and families to the region. Due to perceptions of higher salary rates and the transient nature of the population there appears to have been an expectation that individuals in the region should accept lower standards of infrastructure. In reality, employees and their families living in the Pilbara demand standards of social amenity and cultural facilities comparable to the metropolitan area.

Acceptable standards of social amenity and community infrastructure are integral components to achieving long-term economic stability of the Pilbara. There are two fundamental community infrastructure services that continue to cause concern in the region: health and education. Health encompasses hospital services and general practitioner services. Education includes primary, secondary and post-secondary facilities (WAPC and DoP 2009).

The majority of community and stakeholder surveys in the Pilbara in recent years have highlighted the need for improved childcare services. The Pilbara has a chronic shortage of childcare facilities, even prior to the region's recent rapid expansion. The situation is exacerbated by the region's demographic profile, characterised by a high workforce participation rate, coupled with low numbers of extended family. In 2009, it was estimated that day care facilities in Newman and Port Hedland have waiting lists of 18 months (WAPC and DoP 2009). BHP Billiton Iron has recently completed the construction of a child care centre to provide 120 child care places and associated staff housing in Port Hedland.

A report prepared by the Pilbara Area Consultative Committee (PACC) in conjunction with the Pilbara Development Commission and Pilbara Regional Council, *The Pilbara Plan*, (PACC 2008) identified that investment of A\$3.87 billion on essential projects over the next ten years would deliver massive social and economic return and is essential to bring the Pilbara region up to a baseline to under-pin the economic importance of the region and provide an acceptable quality of life for its residents and workers. The primary objectives of the Plan are to:

- ▶ normalise the cost of living;
- ▶ enrich the quality of life; and
- ▶ diversify economic opportunities.

The PACC noted that apart from having region-wide benefits, the projects identified would contribute to the core goals of a sustainable and healthy economy; improved quality of life and increases in social equity; and a reduced impact on the environment, at the same time as ensuring regional productivity

is maximised. The projects focus on six community themes (Accommodation, Health, Education, Social, Sport and Recreation, Cultural Tourism) and three essential infrastructure themes (Utilities, Communications, Transport) all dependent on a central and universal theme (Land).

Underpinning these themes is the need to address policy frameworks and to consider the environmental impact. Access to land (residential, commercial, light industrial and community facility uses) was identified

as the key theme that needs to be addressed with urgency as nothing can move forward without primarily addressing the universal and central theme (of) Land (PACC 2008). **Figure 7.2** illustrates the linkages between the nine themes that need to be addressed to bring the Pilbara region up to a baseline to provide an acceptable quality of life and underpin the economic importance of the region, and their interdependency on access to land.

Through the Community Development Strategy,

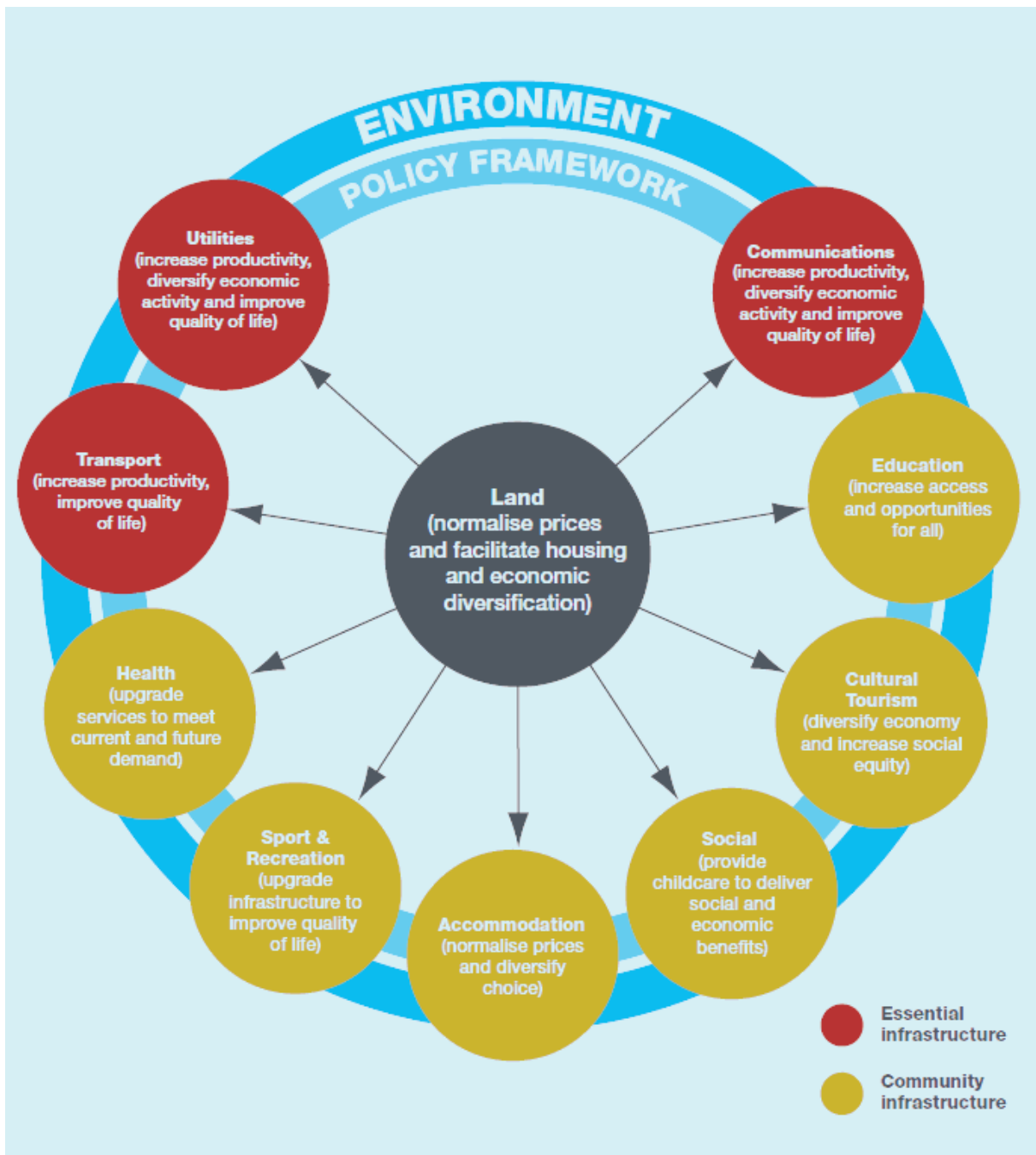


Figure 7.2 – The Pilbara Themes

Source: PACC 2008

BHP Billiton Iron Ore has increased its level of community engagement, involvement and investment; recognising the need to contribute to the sustainability of host communities. Effective partnerships with key government and non government service providers form the foundation of BHP Billiton Iron Ore's approach and contribution to health, education, infrastructure and amenity.

7.5.1 Health

The new Hedland Health Campus opened in 2010 for emergency and other clinical services, replacing the 35-year-old Port Hedland Regional Hospital. Medical specialists visit on a regular basis. Other health services in the region include the Pilbara Community and Aged Care Services, Port Hedland Community Health Centre and Pilbara Mental Health and Drug Service in Port Hedland. Port Hedland also has two dentists and three pharmacies.

The Pilbara's demographic profile is characterised by a high percentage of young workers (aged 20 to 40) and their families, attracted to the region by the high earnings in the resource sector. Typically this group spends a large part of its childbearing years in the Pilbara. As a consequence, the proportion of children under 12 tends to be high. This creates the following demands on the region's health services:

- ▶ The demand for quality obstetrics and gynaecological services tends to overwhelm the services provided. Moreover, the community perception that the service is less than adequate causes the majority of young mothers to return to their home town or a major city (usually Perth) for the necessary support.
- ▶ There is an ongoing demand for health and medical support when the mother and child return to the region. Where eligible, Pilbara residents make regular use of the Patient Assisted Travel Scheme (PATS) to travel to Perth for medical treatment (WAPC and DoP 2009).

The improvement of indigenous health is an important issue for the Town of Port Hedland, given the proportionally higher number of Aboriginal residents in the area and current indigenous health statistics which compare poorly to the general Western Australia population statistics.

For the past six and a half years the Royal Flying Doctor Service (RFDS) has been complemented by the land based 'RFDS on the Road' Program. Supported by BHP Billiton Iron Ore, the Program provides a range of primary health care services to remote communities, including first aid

training, disease screening, healthy lifestyle education and RFDS medical chest audits.

Since its inception, the Program has helped more than 12,500 people living and working at isolated pastoral stations, roadhouses, schools, mining and exploration camps, tourist facilities and indigenous communities across 510,000 km² (BHP Billiton Iron Ore 2008c). 'RFDS on the Road' has also facilitated free skin cancer screening for 6,000 residents of the Pilbara region.

The 'RFDS on the Road' Program was awarded the 'corporate social responsibility' category of the 2008 Golden Target Awards for Excellence by the Public Relations Institute of Australia (Mining Chronicle 2009) and was a finalist in the 2008 WA Community Service Industry Awards in the category for 'strengthening rural and remote communities'.

The 'Remote Pools Project' is a successful partnership between BHP Billiton Iron Ore and the Royal Life Saving Society that tackles the high rate of drowning of Indigenous children. The project aims to boost health, social, education and training opportunities for Indigenous communities. Since its implementation it has significantly improved children's health, lowered the incidence of drowning and decreased offending behaviour. Now in its sixth year, the partnership has also helped dramatically to increase school attendance in selected communities from 20 to 80%. This project won the Western Australian 2008 Community Service Industry Awards in the category for 'strengthening rural and remote communities'.

BHP Billiton Iron Ore supports a range of other health initiatives through its Pilbara Health Partnership including Indigenous Breast Cancer Awareness programs, Hedland Well Women's Centre, upgrades to equipment at local hospitals, increased locum services, provision of additional community mental health services and health care training in remote communities. BHP Billiton Iron Ore also provides housing for a number of medical practitioners in the Town of Port Hedland.

Participants in BHP Billiton Iron Ore's Dialogue Café consultation sessions identified the increased demand for health infrastructure and services, as very important (rated higher than 4 out of 5) and more than 46% of participants rated increased demand for health infrastructure and services as "critical to address".

7.5.2 Education

There are five primary schools, two in Port Hedland, three in South Hedland, and one secondary school in South Hedland. The Pilbara Technical and Further Education

(TAFE) College has two campuses in the Hedland region and there is a Port Hedland School of the Air.

The student population profile shows a general growth in primary school enrolments and a decline in secondary school enrolments. The retention of children within the region's high schools is a significant issue, where education in Perth and other southern towns is considered by many to be superior to the education received in the Pilbara. It is anticipated that increased future demand for education facilities will generally be met by augmenting existing school facilities with demountable classrooms and associated structures. The WAPC anticipates there may be a need for a second high school in Port Hedland (state or private). The WAPC does not anticipate that there will be a need for additional TAFE colleges. The focus will be on expanded course choice and associated facilities and accommodation. An upgraded regional campus – university nexus will need to be developed (WAPC and DoP 2009).

Participants in BHP Billiton Iron Ore's Dialogue Cafe consultation sessions identified the provision of education and training services as very important (rated higher than 4 out of 5) and more than 40% of participants rated education and training as "critical to address".

7.5.3 Recreation and Tourism

Tourism is an expanding industry in the Pilbara and north-west Western Australia, with ecotourism becoming increasingly popular. Port Hedland acts as a "gateway" to the Pilbara region, especially for people travelling to Karijini National Park, Karratha and the Kimberley region (WAPC 2003). Tourist attractions in the Hedland region include coastal recreation activities such as fishing, crabbing and bird watching. The Port operations themselves are also considered a tourist attraction.

Recreational boat ownership is very popular in the Hedland region due to the excellent fishing and conducive climate, with 78 boats per 1000 people. The number of larger vessels has not increased significantly, possibly due to limited recreational boat harbour facilities and the risk of cyclonic damage to vessels moored (DRDL 2010).

There are two major boat-launching areas in Port Hedland, one at the north-western end of Finucane Island and the other to the north of the PHPA berths. The PHPA also has a jetty near the existing port area which allows commercial fishing boats access to the coast when commercial wharves are unavailable (WAPC 2003).

The Town of Port Hedland has a range of tourist accommodation that caters for visitors including four caravan parks, six motels and a number of smaller accommodation providers (DRDL 2010).

The growth in mining and construction activity since 2002/03 has been accompanied by an exponential growth in demand for visitor accommodation. Mining and construction companies have block-booked the region's hotels, motels, caravan parks, hostels, as well as the private rental market as accommodation for their permanent, temporary and transient workers. The low level of temporary accommodation for tourists and other non-mining related visitors has had a negative effect on tourism operators and other small businesses (WAPC and DoP 2009).

The Pilbara local government authorities, through the Pilbara Regional Council, have developed a regional tourism plan to reinvigorate the tourism industry in the Pilbara. New hotels/motels are now planned for Port Hedland, Point Samson, Karratha and Tom Price. It is envisaged that, with these and the new transit camps becoming operational, there will be sufficient tourist, visitor and transient accommodation in the next two years to stimulate growth (WAPC and DoP 2009).

Participants in BHP Billiton Iron Ore's Dialogue Cafe consultation sessions held in 2009 identified the threats to tourism and lack of accommodation/operations impact as important (rated higher than 3 out of 5) and 20% identified it as "critical to address" in planning for growth.

There are a number of parks, sporting and recreational grounds in the Town of Port Hedland. Other recreational/cultural facilities include the Courthouse Arts Centre and Gallery and the Matt Dann Cultural Centre, which features movies, theatrical and musical performances.

The Pilbara towns have a very high level of recreational facility provision, particularly floodlit ovals and Olympic-sized swimming pools.

Participants in BHP Billiton Iron Ore's Dialogue Cafe consultation sessions identified the increased demand for recreation facilities/infrastructure as important (rated higher than 3 out of 5) and 24.1% identified it as "critical to address".

The long working hours (often on a rotating shift basis), experienced by a large segment of the Pilbara population significantly reduce the capacity to engage in active recreational pursuits on a regular basis. This work pattern also affects a large proportion of the region's high school students, as many of them are employed by the retail sector at weekends, thus limiting their availability to make use

of the towns' recreational facilities. This shortage of discretionary leisure time also has implications for adult volunteers coaching youth sports teams and other community activities, such as scouts (WAPC and DoP 2009).

7.5.4 Infrastructure and Housing

Services and Utilities

The Town of Port Hedland's water supply is managed by the Water Corporation through the Port Hedland Regional Water Supply Scheme (Town of Port Hedland 2007a). Groundwater is extracted from bore fields located within water reserves on the Yule River and pumped to Port Hedland for industrial and domestic use (WAPC 2003). The water is stored in tanks in South Hedland and then transferred to bulk storage tanks in the port area and on Finucane Island (Town of Port Hedland 2007a).

There are two sewage treatment facilities in Port Hedland; Spinifex Hill Waste Water Treatment Plant and South Hedland Waste Water Treatment Plant (Town of Port Hedland 2007a).

Electricity is supplied to Port Hedland by Horizon Power from a gas-fired power plant in the proposed Boodarie Industrial Estate which distributes electricity to sub-stations in Port Hedland, Wedgefield, South Hedland and Finucane Island (Town of Port Hedland 2007a).

The major shopping centre for the Town of Port Hedland is located in South Hedland (Town of Port Hedland 2007a). Government offices and public services are concentrated in South Hedland. Medical services are now centred in South Hedland due the recent opening of the Hedland Health Campus.

Transport

The Port Hedland International Airport is one of the busiest regional airports in Australia processing 3,500 passengers per week (ABC 2008). In 2008, there were approximately eight return flights to Perth per week day and a number of services over the weekend provided by two carriers.

The continued growth of the iron ore export trade within the Pilbara region has resulted in a substantial increase in the number of heavy vehicles and road trains using roads in and around Port Hedland. As a result there are concerns within the local community for road networks in the Port Hedland area including (AusLink 2007):

- ▶ traffic congestion between local urban traffic and heavy vehicles in Port Hedland where the local road network must cater for both triple road train access and for freight

transport to the ports and other industrial areas;

- ▶ the current alignment and/or configuration of the main road network, which intersects with access roads for the South Hedland residential area, Wedgefield industrial zone, port areas and railway crossings, exacerbating the conflict between heavy vehicles, ore trains and local traffic;
- ▶ insufficient overtaking opportunities given the mix of heavy vehicles, passenger vehicles and tourist traffic;
- ▶ the need for some parts of the road network to be reconstructed in the longer term, due to poor pavement quality; and
- ▶ the quantity and quality of rest areas and/or lack of parking opportunities for road trains, which is not conducive to improving fatigue management outcomes.

In response to these concerns, Main Roads Western Australia (MRWA) has identified improvements to increase the level of safety and the efficiency of traffic movements. The following works are proposed and have commenced (MRWA 2009):

- ▶ construction of a new port access from Great Northern Highway (near Dalton Road) to the developing port facilities on the western side of the port;
- ▶ minor realignment of Great Northern Highway near Dalton Road to Wallwork Road intersection;
- ▶ construction of a new intersection for heavy vehicles moving to or from the new port facilities, Wedgefield or the Newman/Karratha area;
- ▶ construction of a fourth lane from Wallwork Road to Port Hedland Road intersection with Great Northern Highway;
- ▶ improvements to the serviceability of the Port Hedland Road intersection with Great Northern Highway; and
- ▶ construction of a rail overpass at Wallwork Road, to which BHP Billiton Iron Ore has contributed funding.

Modifications to the intersections and approaches on Pinga Street and Wallwork Road with Great Northern Highway have been completed.

Ongoing review of road and rail improvements will occur through the inter-government and industry working group chaired by the Department of State Development (DSD).

Housing and accommodation

Port Hedland and Newman median house prices have risen over 800% since 2001. Soaring accommodation costs, a 49% increase in cost of living in the region over capital cities, substandard and ageing community facilities and high labour turnover affect productivity and profitability margins across all sectors, resulting in a costly and inefficient region in which to live and do business (PACC 2008).

The supply of housing in the Pilbara tends to be unbalanced with severe shortages in the region's hotspots, such as Karratha, Port Hedland and Newman. In the hotspot towns there is evidence of overcrowding and attendant social issues. The use of temporary accommodation, such as cabins and caravan parks for workers and their families, is a direct result of this shortage.

The house building industry was taken by surprise by the steep ramping up of the resource sector from about 2004. However, LandCorp, the Department of Housing and companies such as BHP Billiton Iron Ore, have been making steady inroads in the provision of residential land and housing. Due to the current high cost of civil works and house construction, the price of house and land packages is exceptionally high for would be home residents. While many of the Pilbara residents enjoy highly subsidised rents (through resource companies, their contractors and government employers), those engaged without packages that include housing are required to pay high rentals. Thus house-sharing, even by couples, is a current feature of dwelling occupancy in the Pilbara (WAPC and DoP 2009).

The quality of the Pilbara's housing stock is highly variable, ranging from recently constructed high finish dwellings, to aging fibro cottages in some of the pre-mining era settlements. A large proportion of mining era town housing stock, largely built in the 1970s, is now in need of refurbishment or replacement. Major renovation programs have been put in place by the mining companies to redress this situation – this is particularly evident in the Hedland region. The Department of Housing has been making a major contribution to the quality of the residential neighbourhoods in South Hedland, via its 'New Living' program (WAPC and DoP 2009).

The Town of Port Hedland has, in recent years, achieved considerable success in developing and maintaining a high quality of urban and landscape design in both Port and South Hedland. In 2008, the town was category winner in the State Tidy Towns Sustainable Communities Awards for 'community action' and 'general appearance'.

Current and future residential land in the Hedland region tends to be in small enclaves, with a strong focus on South Hedland. Planned future residential land supply predominantly addresses short-term requirements, with little identified for the longer term. In the next two years, 647 residential lots have been identified for release, a further 131 have been identified in the medium term (three to five years) but none in the longer term (5 years or more) (WAPC 2009c).

The WAPC has estimated future residential land demands based on Pilbara Industry Community Council population projections to 2030. Current demand projections indicate that the Town of Port Hedland will be under considerable pressure for suitably zoned residential land by 2020 with a projected short fall of approximately 105 ha.

Participants in BHP Billiton Iron Ore's Dialogue Cafe consultation sessions identified the increased demand for long-term and short-term accommodation as very important (rated higher than 4 out of 5). More than 52% of participants rated increased demand for long-term and short-term accommodation as critical to address. Over recent years BHP Billiton Iron Ore has invested more than A\$340 million in its Housing and Accommodation Program in Newman and Port Hedland including a model 45 dwelling medium-density housing project at Cooke Point and the establishment of 1,900 temporary accommodation units in South Hedland.

Other industry

LandCorp is currently undertaking investigations to determine the feasibility and capacity of supporting industrial land in the following locations:

- ▶ Wedgefield industrial area extension: 200 ha;
- ▶ general industry/transport area: 190 ha; and
- ▶ light industrial area: 80 ha.

The Boodarie Industrial area is being considered as backup to the port's activities. The Boodarie Industrial area covers 3,000 ha, incorporating an area of 200 ha allocated for noxious industries.

In addition to these areas, the PHPA is planning significant port-related industrial and storage areas as part of its Ultimate Development Plan (WAPC and DoP 2009).

7.6 Fisheries

7.6.1 Commercial Fisheries

The Department of Fisheries (DoF) is responsible for managing Western Australian commercial fisheries and divides Western Australia into bioregions for management purposes. Port Hedland sits in

the North Coast bioregion which extends from Onslow in the west Pilbara to the border between Western Australian and the Northern Territory in the Kimberley region.

The North Coast bioregion has been divided into eight meso-scale regions: Pilbara inshore, Pilbara offshore, North West Shelf, Eighty Mile Beach, Canning, King Sound, Oceanic Shoals and Kimberley. Ocean temperatures range between 22°C and 33°C, with localised higher temperatures in coastal waters due to the arid nature of the hinterland, particularly along the Pilbara coastline. Fish stocks in the North Coastal bioregion are entirely tropical, with most having an Indo-Pacific distribution extending eastward through Indonesia to the Indian subcontinent and Arabian Gulf regions (DoF 2008).

The principal commercial fisheries in the North Coast bioregion focus on tropical finfish, particularly the high-value emperors, snappers and cods which are taken by the Pilbara Fish Trawl Fishery and the Pilbara and Northern Demersal trap fisheries. The typical catch is in the order of 3,000 tonnes (t) annually, making these fisheries, at an estimated annual value of approximately A\$12 million, the most valuable finfish sector in the state. The North Coast bioregion has a number of small, limited-entry trawl fisheries for prawns, producing about 700 t annually, valued at approximately A\$10 million. There are also significant fisheries for Spanish mackerel, barramundi/threadfin, salmon and shark, and a developing fishery for blue swimmer crabs. However, the bioregion is increasingly coming under threat from international poaching, particularly for sharks. A number of finfish activities, including offshore demersal line fishing and near-shore beach seining and gillnetting, also occur in the region (DoF 2008).

The increase in international shipping movements and dredging activity associated with resource development in the North Coast bioregion is considered to present a risk to the marine environment because of the potential for the introduction of invasive marine organisms (including animals, plants, pathogens and diseases) into Western Australia's coastal environment. The DoF is working closely with the Australian Government and other jurisdictions to develop and implement the National System for the Prevention and Management of Marine Pest Incursions that will minimise the biosecurity risks associated with increased shipping in the Pilbara and Kimberley regions. Within Western Australia, this will be achieved through the *Biosecurity and Agriculture Management Act 2007* and associated regulations and subsidiary legislation that are currently being developed.

Extensive fisheries closures in coastal and most offshore waters have been introduced to manage finfish trawling by Australian vessels. However, trawling is still permitted in a number of locations. This activity is carefully managed to ensure that impacts are acceptable (DoF 2008).

7.6.2 Recreational Fisheries

Recreational fishing is experiencing significant growth in the North Coast bioregion, with a distinct seasonal peak due to an influx of metropolitan and inter-state tourists travelling through the area and visiting, in particular, the Onslow, Dampier Archipelago and Broome sections of the coastline. Owing to the high tidal range, much of the angling activity is boat-based, with beach fishing limited to periods of flood tides and high water (DoF 2008).

Recreational fishing can be divided into two main areas:

- ▶ Offshore – where fishers target offshore islands, reefs and continental shelf waters; and
- ▶ Inshore – fishing occurs in creeks, estuaries, mangroves and ocean beaches.

Offshore recreational fishers primarily target shoals and reefs including Cornelisse and Coxon shoals and Minilya Bank. Although further offshore, Little Turtle and North Turtle Islands (40 km and 58 km, respectively) are also popular. Larger recreational boats are capable of going over 70 km offshore and some are fishing in the same offshore areas as the commercial Mackerel Fishery operator (SKM 2009n).

Inshore fishing occurs in a variety of habitats, including coastal reefs, man-made spoil banks, mangroves, estuaries and creeks. Fishing is both shore-based and from boats, with popular recreational fishing spots within Port Hedland being Weerde, Downes and Finucane Islands, Spoil Bank and Cemetery Beach. Many offshore reef species are also found in reefs and shoals within the inshore waters. Often juvenile species are found in these inshore waters and migrate offshore upon reaching maturity (SKM 2009n).

The economic value of recreational fishing is difficult to quantify; however, there are economic benefits through direct purchase of boats, bait, fishing rods and tackle as well as indirect benefits through the servicing of boats, equipment and the tourism industry.

7.7 Heritage

7.7.1 Native Title

A search of the Native Title Register shows the Outer Harbour Development traverses over the WC99/003, Kariyarra Native Title claim (the Kariyarra).

7.7.2 Indigenous Heritage

Ethnographic and archaeological surveys have been conducted over the entire terrestrial disturbance envelope, with members of the Kariyarra.

Ethnographic work was conducted in 1994 and 2008 and 2011 and archaeological surveys were conducted in 1994, 1995, 2003, 2008 and 2011.

As a result of these surveys, potential archaeological sites were identified, recorded and registered with the Department of Indigenous Affairs (DIA). A potential ethnographic site was also recorded in the harbour.

BHP Billiton Iron Ore is aware of its obligations under the *Aboriginal Heritage Act 1972* and is seeking to avoid each of the recorded heritage sites. If it becomes impractical to do so BHP Billiton Iron Ore will consult with the Kariyarra and seek consent of the Minister under Section 18 of the *Aboriginal Heritage Act 1972*. Any concerns raised by the Kariyarra would be considered by BHP Billiton Iron Ore in its management of environmental impacts as they affect heritage matters.

Table 7.1 – DIA Sites Potentially Impacted

Site Name	DIA Site ID	Site Type
FINUCANE IS EAST 09	164	Shell Midden
FINUCANE IS EAST 3	761	Shell Midden
FINUCANE IS EAST 6	764	Artefact Scatter, Shell Midden
FINUCANE IS EAST 7	765	Shell Midden
FINUCANE IS EAST 8	766	Shell Midden
FINUCANE IS. EAST 1	791	Shell Midden
New Site 2 (Marlinyura)	17023	Artefact Scatter, Shell Midden
Railway 4	21512	Shell Midden
Marapikurrinya Yintha Site	22874	Mythological
BD 08-01	25620	Shell Midden
BD 08-05	25624	Shell Midden
BD 08-09	25628	Shell Midden
BD 08-10	25629	Shell Midden
BD 08-12	25631	Shell Midden
BD 08-13	25632	Shell Midden
BD 08-17	25636	Shell Midden
BD 08-18	25637	Shell Midden
BD 08-19	25638	Shell Midden
BD 08-21	25640	Shell Midden
BD 08-22	25641	Shell Midden
BD 08-23	25642	Shell Midden
BD 08-26	25644	Shell Midden
BD 08-31	25649	Shell Midden
BD 08-32	25650	Shell Midden
BD 08-36	25654	Shell Midden
BD 08-38	25655	Shell Midden
BD 08-40	25656	Shell Midden
FI 08-01	25665	Shell Midden
FI 08-02	25666	Shell Midden
FI 08-03	25667	Shell Midden

BHP Billiton Iron Ore has already extensively consulted with the Kariyarra people in relation to heritage issues associated with its existing projects in and around Port Hedland, including dredging of the Inner Harbour.

The consultation process used by BHP Billiton Iron Ore has included:

- ▶ an agreement with the Kariyarra corporate entity that the Kariyarra are charged with responsibility for undertaking heritage surveys in the area of the Port Hedland Harbour;
- ▶ conducting heritage surveys through the Kariyarra corporate entity including payment for the conduct of the surveys and reports by professional anthropologists and archaeologists and Kariyarra people;
- ▶ consultations in the field, during heritage surveys;
- ▶ consulting with Kariyarra people about the outcomes of the heritage surveys commissioned including BHP Billiton Iron Ore's plans to involve the Kariyarra in management and mitigation activities including monitoring;
- ▶ giving the Kariyarra copies of notices under Section 18 of the *Aboriginal Heritage Act 1972* and an opportunity to comment on them;
- ▶ meetings between representatives of BHP Billiton Iron Ore and representatives of the Kariyarra to discuss likely heritage impacts and BHP Billiton Iron Ore's approach to managing them; and
- ▶ the opportunity to participate in the implementation of a Cultural Heritage Management Plan.

BHP Billiton Iron Ore is also negotiating a project agreement with the Kariyarra that is proposed to cover all of BHP Billiton Iron Ore's activities in the vicinity of the Port including the proposed Outer Harbour Development. As part of these negotiations, BHP Billiton Iron Ore meets with the Kariyarra monthly and provides updates to the Kariyarra about its plans for the Port and will continue to consult with them about the project as it is developed and implemented.

Before any ground disturbance activities will be permitted within the disturbance envelope the proposed activity will be considered as part of an internal Project Environmental and Aboriginal Heritage Review (PEHR) process. The PEHR process ensures that all heritage sites located in the disturbance envelope and within the vicinity of the disturbance envelope are identified and avoided where practicable.

BHP Billiton Iron Ore has a policy of conducting thorough ethnographic and archaeological heritage surveys of any area that has not been previously surveyed before ground disturbing activity is conducted. This policy is part of the PEHR process and the Cultural Heritage Management Plan.

Table 7.1 records those sites located within the disturbance envelope that could potentially be impacted by the proposed Outer Harbour Development. Out of respect for the wishes of Aboriginal people the locations of the heritage sites are not shown.

The shell midden sites are of a type that are very common in the Port Hedland area. The Marapikurrinya Yintha site is adjacent to and impacts a very small portion of the disturbance envelope. That portion is already the subject of an approval under Section 18 of the *Aboriginal Heritage Act 1972*.

7.7.3 European Heritage

European Heritage in Port Hedland is closely linked to the establishment of the town's existing ports and to early European settlement.

Although the Western Australian coastline was visited by European explorers prior to 1829, Port Hedland received its current European name in 1863 after Captain Peter Hedland anchored his ship the "Mystery" in the mangrove inlet.

In 1896, the first Port Hedland jetty was built to service the pastoral industry and in 1908 the jetty was extended as a result of the discovery of gold at Marble Bar. From the early to mid 1900s, the port was primarily used by the pastoral industry with additional exports of pearl shell, gold, tin, copper and later manganese.

In 1965 Port Hedland underwent significant expansion with major dredging of the port channel to allow larger carriers to enter the port enabling the export of iron ore and salt. Further significant expansions occurred in 1975, 1976 and 1986.

Places of European heritage significance within the Port Hedland area are predominantly located in the West End of the Port Hedland town site (Town of Port Hedland 2007a). This area encompasses early European settlement and port development along the coastline (Town of Port Hedland 2007a).

A search of the Heritage Council of Western Australia (HCWA) *Database of Heritage Places* listed 75 existing places of heritage significance within the Port Hedland Local Government Area (HCWA 2009). However, only four places are permanently

Table 7.2 – Details for Shipwrecks Known to occur in the Port Hedland Area

Shipwreck ID	Name	Type	Date Wrecked	Location
3524	Bessie	Schooner	1907/08/07	Near Port Hedland
3663	Broudeg	Lugger	1933/02/26	Port Hedland
2940	Falcon	Lugger	1892/03/11	Eastern end of Finucane Island
3020	Gwendoline	Schooner	1924/02/10	Port Hedland, Forestier Reef
3822	Marchant 1	Fishing Boat	1970/03/01	Port Hedland
3351	Opal	Lugger	1892/05/05	Near entrance to Port Hedland
3483	Sea Spray	Schooner	1873/02/03	Port Hedland
3618	Una	-	1863	Port Hedland
3638	Unidentified Boat	-	1900/05	Port Hedland, Condon
3741	Unnamed Boat	Cutter	1872/05	Port Hedland
4069	Wester	-	1915	Port Hedland
3191	Yule	Cutter	-	Oyster Inlet, Port Hedland

registered on the State Register of Heritage Places: Dalgety House; the former District Medical Officer's Quarters; Mundabullangana Station; and St Matthew's Anglican Church (HCWA 2009). The De Grey-Mullewa Stock Route No. 9701 is listed under the Heritage Council of Western Australia's Assessment Program and intersects the disturbance envelope of the proposed Western Spur Railway. All remaining places listed under the Heritage Council of Western Australia's Assessment Program are not located within or in close proximity to the terrestrial disturbance envelope. The locations of the above heritage sites are displayed on **Figure 7.3**.

A search of the National Shipwrecks Database revealed twelve potential shipwrecks are located in the Port Hedland area, although exact locations are unknown (**Table 7.2**). A recent bathymetrical survey (BHP Billiton Iron Ore 2008e) revealed one shipwreck (origin/name unidentified) was located offshore from Port Hedland, outside the marine develop footprint.

7.7.4 Register of National Estate

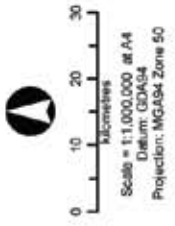
A search of the Australian Heritage Database (DEWHA 2009c) was conducted for the Port Hedland area. The search included the Register of National Estate, Commonwealth Heritage List, National Heritage List, World Heritage List and the List of Overseas Places of Historic Significance to Australia.

The database search identified one heritage place of potential interest to the project the 'Coastal Islands from Dixon Island, Cape Preston to Cape Keraudren, Port Hedland' area (**Figure 7.3**). This area is listed on the Register of the National Estate as being an Indicative Place (Place ID 17917).

This area was nominated as an:

"Important representation of intact tidal flats and mangrove thicket of the north-west coast of Western Australia, very important in supplying nutrients for the adjacent marine ecosystem and important habitat for juveniles of many marine species" (DEWHA 2009c).

- Legend**
- European Heritage Sites
 - Roads (Pilbara Land District)
 - Sealed
 - Unsealed
 - Proposed Infrastructure Corridor
 - Proposed Stockyards
 - Proposed Car Dumper
 - Proposed Jetty
 - Proposed Wharf
 - Proposed Goldsworthy Rail Loop
 - Proposed Western Spur Railway
 - Existing Railway
 - Disturbance Envelope



SOURCE
 European Heritage: Commonwealth Heritage List Database
 Roads: Department of Transport, Main Roads and Pild
 Heritage Division of the Department of Pa
 Environment and Heritage, 2005
 Topography: GEODATA, Topo 200K V3
 © Commonwealth of Australia (GA), 2006

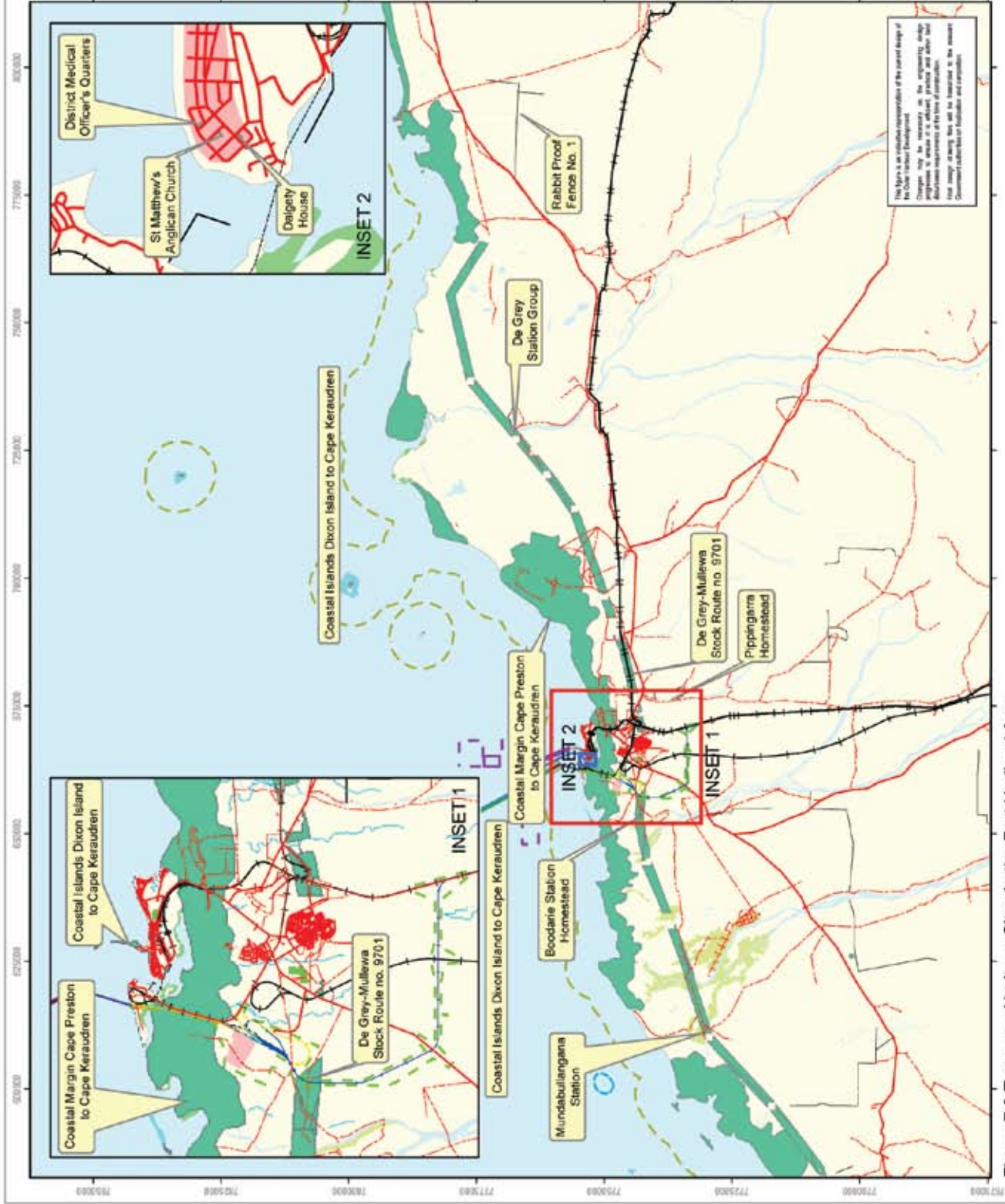


Figure 7.3 European Heritage Sites in the Port Hedland Area

7.8 Visual Amenity

Port Hedland lies on an inlet fringed with mangroves and tidal creeks. The topography of Port Hedland is generally flat, with occasional rocky outcrops. The visual landscape in Port Hedland is dominated by the operation of the inner harbour and associated industrial infrastructure.

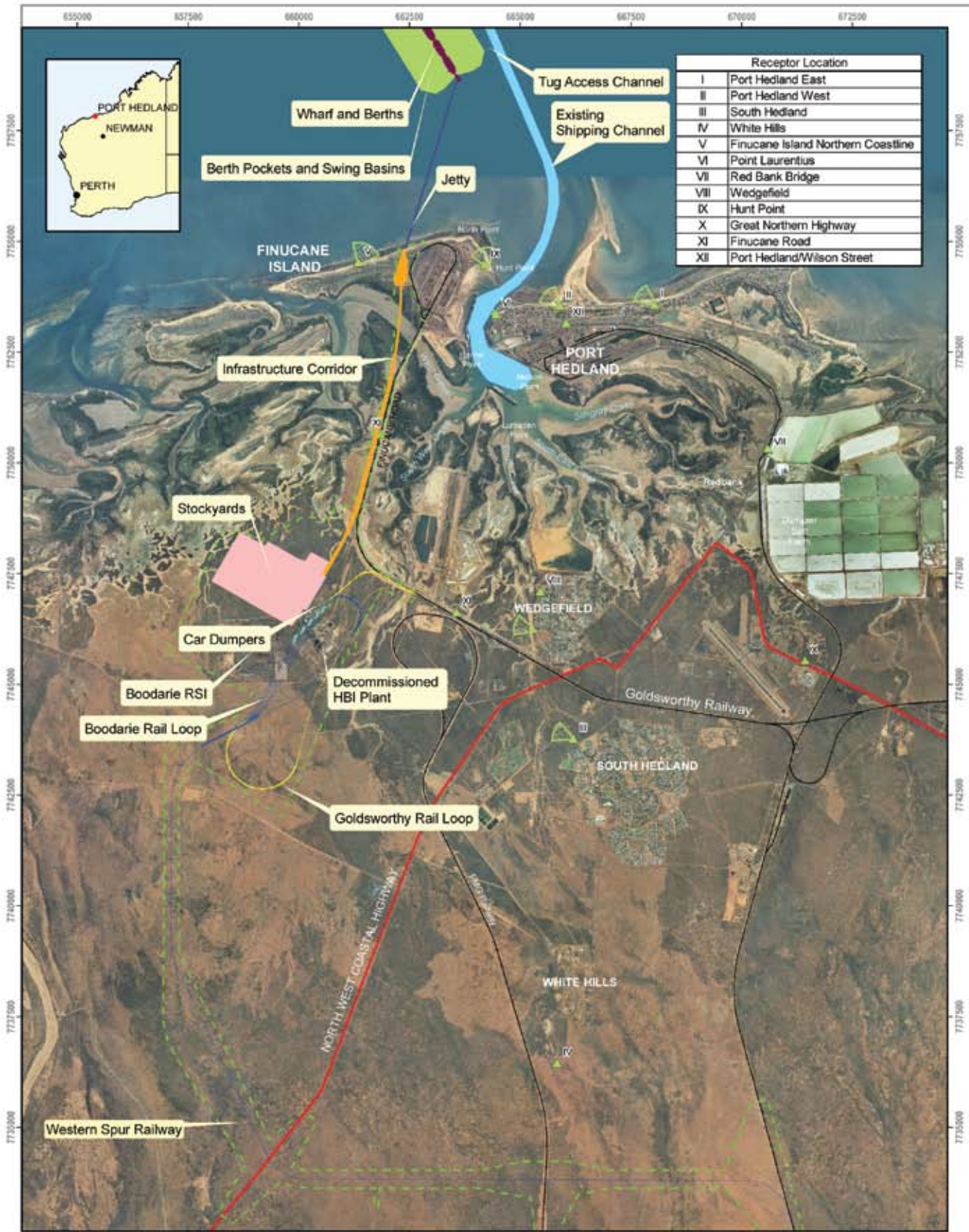
The visual landscape of the Boodarie Industrial area is characterised by the decommissioned HBI Plant and associated rail and road infrastructure, power station, rail corridor to Finucane Island, tidal creeks surrounded by mangroves to the north and west and natural, generally low shrub bushland which supports pastoral uses.

The existing views from receptor locations of varying viewing significance (as defined by WAPC 2007) within the Port Hedland area have been assessed as part of a visual impact study (SKM 2009p). Receptor locations are shown in **Figure 7.4** and assessment findings are summarised in **Table 7.3**.

With the exception of the northern coast of Finucane Island, Port Hedland West and East and White Hills, all receptor locations have views that are influenced to varying degrees by existing port-related infrastructure such as the FMG Anderson Point Facility, decommissioned Boodarie HBI Plant and Finucane Island Port Operations. Finucane Island, Port Hedland West and East have uninterrupted views of the Indian Ocean although navigational markers or transient port-related features such as ore carriers and tug vessels are visible.

A light spill study undertaken in 2009 (Bassett 2009; **Appendix B5**) assessed the existing night-time views of lights from receptor locations of varying viewing significance (as defined by WAPC 2007). Port Hedland Town, South Hedland and Wedgefield are primarily influenced by existing street lighting and sports field lighting to varying degrees (Bassett 2009). Light spill from the decommissioned HBI Plant and FMG port infrastructure is visible from Wedgefield and South Hedland but is located at a sufficient distance from these areas (more than 2 km) that it is not intrusive for residents. Light spill from the existing port infrastructure on Finucane Island is visually dominant from the western section of Port Hedland.

Existing illuminance was measured at a number of locations near the proposed Outer Harbour Development including the Gazebo at Point Laurentius (West Port Hedland), Port Hedland Hospital, Port Hedland All Seasons Hotel (Port Hedland East), South Hedland and Wedgefield. In general, illuminance values recorded at all sites are below the values recommended in the Australian Standard AS 4282:1997 Control of the Obtrusive Effects of Outdoor Lighting, which recommends levels of light that may be considered acceptable for various surrounding land uses (Bassett 2009; **Appendix B5**).



Legend

-  Receptor Locations
-  Field of View
-  Principal Road
-  Proposed Infrastructure Corridor
-  Proposed Stockyards
-  Proposed Car Dumper
-  Proposed Jetty
-  Proposed Wharf
-  Proposed Goldsworthy Rail Loop
-  Proposed Western Spur Railway
-  Disturbance Envelope
-  Proposed Departure Channel
-  Proposed Berth Pockets and Swing Basins
-  Proposed Link Channel
-  Proposed Crossover Channel
-  Existing Shipping Channel



Scale = 1:110,000 at A4
 Datum: GDA94
 Map Grid: MGA94 Zone 50



Source:
 Orthorectified Aerial Photograph:
 06/06/2010 (BHPBIO)
 Topography: GEODATA Topo 250K V3
 © Commonwealth of Australia (GA), 2006
 003ig045_WV05024_Rev0

Figure 7.4 Receptor Locations and Photomontage Locations in the Port Hedland Area

Table 7.3 – Existing Views from Receptor Locations in the Port Hedland Area

Receptor Location	Significance (DPI 2007)	Distance from Outer Harbour Development Infrastructure	Visual Baseline
Residential Areas			
I - Port Hedland East (All Seasons Hotel)	National / State: Residential area.	6 km east of proposed jetty	Infrastructure from existing BHP Billiton Iron Ore operations on Finucane Island is only visible when looking in a westerly direction. Navigational markers and moored ships are visible to the north-west. Sandy coastal flats, low vegetation and a sand spit are visible to the north-west.
II - Port Hedland West (outside Hospital)	National / State: Residential area.	4 km east of proposed jetty	Looking in a north-westerly direction from Port Hedland West, the Indian Ocean is visible. Hunt Point and existing BHP Billiton Iron Ore infrastructure associated with the Port operations on Finucane Island are visible to the west. Navigational markers and moored ships are visible to the north-west of this location. Uninterrupted views of the Indian Ocean are present to the north.
III - South Hedland	National / State: Residential area.	7 km east south-east of proposed stockyards	Large alluvial flats vegetated by low-lying scrubland and grassland are present to the north-west. Trees up to 7 m in height (located along the Great Northern Highway) limit the majority of north-west views. The FMG overland conveyor and the decommissioned HBI Plant are partially visible above the existing vegetation.
IV - White Hills	National / State: Residential area.	10 km south-east of proposed stockyards 3 km north of proposed railway	Large alluvial flats vegetated by low-lying scrubland and grassland are present to the north-west. Trees up to 7 m in height (located along the Great Northern Highway) limit the majority of north-west views. The decommissioned HBI Plant is not visible in the north-west above the existing vegetation. To the south, the intervening vegetation is low-lying scrubland and grassland and the terrain is relatively flat.
Recreational Areas / Designated Lookout Points			
V - Finucane Island (northern coastline)	Local: Recreational area of local significance.	Less than 1 km from proposed jetty	The immediate coastal fringe is flat with low-lying scrub and grassland. Views of the existing port and town infrastructure to the south and east are screened by topography. There are currently no features restricting views towards the north. Ships moored offshore are visible from this location.
VI - Point Laurentius	National / State: Designated lookout point.	2 km to the proposed transfer station 3 km to the proposed jetty	This publicly accessible viewing platform is situated directly opposite the entrance to the port. The entrance to the port and the port operations on Finucane Island are visible to the west. The southern side of Hunt Point and the Indian Ocean are visible when looking in a north-westerly direction from this location. Ships entering and exiting the harbour are visible from this location.
VII - Red Bank Bridge	National / State: Designated lookout point.	11 km to proposed stockyards	The Red Bank Bridge is a designated lookout which allows residents and visitors to view Port Hedland and the nearby Dampier Salt Farm. The immediate coastal fringe is flat with low-lying coastal vegetation. Looking in a south westerly direction, the decommissioned HBI Plant and FMG transport infrastructure is visible in the distance.
VIII - Wedgefield	None	5 km from proposed stockyards	To the east vegetation is low-lying and the FMG conveyor and decommissioned HBI Plant at Boodarie are dominant visual features. Existing rail and power infrastructure is also visible.
IX - Hunt Point	None	2 km from proposed jetty	Westerly views are somewhat restricted by sand dune formations. To the south-west existing BHP Billiton Iron Ore infrastructure on Finucane Island (including stockpiles, roads, ship loaders, stackers and reclaimers etc.) is visible. Hunt Point has clear views northwards towards the Indian Ocean and moored ships are visible. Ships entering and exiting the harbour are visible to the north-east and south-east.

Receptor Location	Significance (DPI 2007)	Distance from Outer Harbour Development Infrastructure	Visual Baseline
Arterial Roads			
X - Great Northern Highway	National / State: State highway.	12 km from proposed stockyards	To the west vegetation is low-lying and views of the decommissioned HBI Plant and power lines are visible.
XI - Finucane Road	National / State: Main road.	4 km to proposed stockyards	To the south from the southern section of Finucane Road the FMG port and rail infrastructure and the decommissioned HBI Plant are clearly visible. Existing BHP Billiton Iron Ore infrastructure on Finucane Island is visible at the northern most end of Finucane Road.
XII - Port Hedland Road/Wilson Road	National / State: Main road.	5 km from the proposed transfer station	The land surrounding Port Hedland Road is low scrubland and enables clear views of the surrounding landscape. Existing BHP Billiton Iron Ore infrastructure at Nelson Point including stackers, reclaimers and stockpiles is located adjacent to the end of Port Hedland Road.