

Fortescue Metals Group Ltd

Pilbara Iron Ore and
Infrastructure Project:
Stage A (Port and North-
South Railway) and Stage B
(East-West Railway and
Mine Sites)

July 2004

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For and on behalf of
Environmental Resources Management
Australia

Approved by: Keryn James

Signed: 

Position: Partner

Date: 2 July 2004

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1 INTRODUCTION

1.1 OVERVIEW

Environmental Resources Management Australia Pty Ltd (ERM) was retained by Fortescue Metals Group Limited (FMG) in April 2004 to undertake a desktop socio-economic assessment of proposed rail and port infrastructure and mining operations in the Pilbara region of Western Australia. This desktop assessment was to establish the scope for more detailed assessment of social and economic impacts of the proposed project and was to comprise three main tasks:

1. establishment of a socio-economic baseline to profile the relevant communities (based on secondary data);
2. scoping of the potential social impacts including prediction of impacts; and
3. Advice on a Stakeholder Consultation Program to be managed in-house by FMG.

1.2 SCOPE OF THE ASSESSMENT

This assessment has been prepared using data available in the public domain in addition to project specific data provided by FMG. The social and economic baseline data is reliant on material sourced from the Australian Bureau of Statistics (ABS) or government agencies. No primary data collection such as surveys or stakeholder interviews have been undertaken for the purposes of this project. This level of assessment is appropriate for the current status and timing of the project but should be supplemented in the future.

The Project will be assessed by the Environmental Protection Authority (EPA) at a Public Environmental Review (PER) level of assessment. Assessment will be in two stages; the first relating to port and north-south rail infrastructure; the second to mining operations and an east-west railway in East Pilbara. Socio-economic assessment is not currently a mandatory part of the PER level of assessment and as such this is a discretionary study. Ongoing stakeholder consultation will provide the mechanism for identification of additional impacts and/or more detailed consideration of impacts and potential management measures.

STRUCTURE OF THE REPORT

The report is structured in eight sections:

- The first section provides an overview of the study;
- Section 2 presents a description of the project;
- Section 3 describes the policy context for management of socio-economic factors;
- Section 4 describes the current social situation (baseline) relevant to the project;
- Section 5 describes the current economic situation (baseline) relevant to the project;
- Section 6 summarises major opportunities and risks;
- Section 7 scopes the factors requiring further investigation to determine the significance of impacts; and
- Section 8 provides guidelines for the development of a stakeholder engagement program.

2.1**OVERVIEW**

In response to increasing global demand for steel FMG is proposing to develop the Pilbara Iron Ore and Infrastructure Project (the Project). It involves proposed iron ore operations within and to the east of the Chichester Ranges at Christmas Creek, Mt Lewin, Mt Nicholas and at Mindy Mindy and a railway from the mine sites to new port facilities at Port Hedland (*Figure 1*).

The Project is designed to operate at 45 million tonnes per annum (mtpa) by 2009, with 30% of that amount by 2007 and 70% by 2008. Planned capital expenditure is A\$1.85 billion. The project is projected to generate around A\$36 million per annum in royalty payments to the State Government and employ 2000 people in the construction phase and 600 people in the operational phase¹.

Proposed port operations are approximately 3km from residential and industrial premises in the area of Wedgefield and the proposed railway passes within approximately 1.5km of Wedgefield.

The proposed mine at Mindy Mindy and Mt Nicholas/Christmas Creek/Mt Lewin (Chichester Ranges) are between 75-135km from the town of Newman. The proposed railway from Port Hedland to Mindy Mindy will end approximately 75km north-west Newman. The east-west rail line is proposed to run to mine operations in the Chichester Ranges and joins the north-south rail line. At its nearest point, the east-west railway would pass approximately 70km from Newman townsite.

FMG holds mining tenements that cover substantial iron ore resources in the Pilbara that are currently "stranded" due the current lack of open access infrastructure in the Pilbara (third party access to existing rail and port infrastructure has not been provided to date). The Project has declared it will offer commercially competitive open access rail and port infrastructure for the export of iron ore allowing development of other iron ore and other resource projects in the Pilbara region that are currently unable to gain access onto existing rail and port infrastructure. It is envisaged the assets will be controlled by the 'Pilbara Infrastructure Fund' in which FMG anticipates holding a 40% stake².

This study scopes the assessment of socio-economic issues for the entire project including port, rail and mining operations.

¹ Chris Caitlow, CFO FMGL

²FMG Executive Statement

2.2

LOCATION OF INFRASTRUCTURE

The railway stretches from the proposed port facilities at Port Hedland south south-east, to joint venture resources in the East Pilbara at Mindy Mindy. An east-west rail spur will link to FMG mining operations in the Chichester Ranges. The majority of the proposed railway will run parallel and in close proximity to the existing BHP Billiton Newman to Port Hedland railway and the proposed Hope Downs project rail alignment. The most southerly extent of the railway is approximately 75km north of the Newman townsite.

The proposed FMG port facility will be located on the southwestern side of the Port Hedland harbour. A conveyor system will transfer iron ore from the stockyard to new wharf and ship loader facilities that will be located at Anderson Point. The final location and configuration selected for the port and rail loop will depend on the outcome of environmental investigations, land access issues, Aboriginal heritage sites and engineering constraints.

Provided all project approvals are in place, construction is expected to commence in the first half 2005.

2.3

PORT FACILITY OPTIONS

The conceptual configuration of the proposed facilities has been developed as at Anderson Point (shown in *Figure 2*). It is envisaged that port operations will include a car dumper, conveyors, transfer points, a rescreening plant, two stackers, a reclaimer, maintenance and administration facilities.

2.4

SUPPORTING MINESITE INFRASTRUCTURE

The electricity needs of the project are estimated to be 1000Mwh/day and will require upgrading of the electricity supply around Newman. The electricity provider will determine if a spur from the existing gas pipeline near Newman will be constructed to the Mt Nicholas mine and a generation plant built on site, or if generation will take place in Newman with high voltage powerlines to supply the mine site.

2.5 *EMPLOYMENT*

2.5.1 *Construction*

FMG expect the construction workforce to be deployed evenly across the two years of construction. Construction expenditure equates to at least \$1.8bn and allows for peak employment of 2000 full-time jobs during the 20-month construction period. It is expected the construction workforce will reside in Port Hedland and travel to construction camps along the length of the railway and to the mine sites. The construction workforce at Port Hedland is expected to be accommodated in a combination of temporary, short-stay and rental accommodation.

Procurement of the capital expenditure is not finalised and the degree of Australian content is unknown. FMG has stated its intention to procure locally wherever practicable and will endeavour to utilise locally provided services

2.5.2 *Operation*

It is envisaged that the Project will ultimately employ around 600 workers including:

- 124 mine site employees of FMG based in Newman and flying-in to the Mt Nicholas mine site daily in two shifts (probably one or two 40-seater flights per shift);
- 270 Fly-in-Fly-out (FIFO) mine contractors at mine sites potentially located at a camp on-site. It is FMG's intention over time to replace with the FIFO workforce with people based permanently in Newman;
- 190 port facility employees of FMG, expected to be residential in Port Hedland; and
- 25 staff at its corporate headquarters in Perth.

3.1.1 Overview

The FMG project requires assessment under State legislation, but the scale of the project means it must consider government policies and plans at the Commonwealth, State, regional and local levels of government.

The Commonwealth Government is responsible for broad policy direction and decision-making on issues of national applicability including social and economic impacts. Western Australia will regulate the project environmentally and assume responsibilities for service provision to affected communities. Local governments are responsible for service provision at the local level and are generally limited in terms of income generation and statutory responsibility. The Town of Port Hedland and the Shire of East Pilbara will be the two local government areas most affected by the Project. The townsites of Port Hedland/South Hedland and Newman will be the population centres that will experience the majority of socio-economic impacts. Economic impacts will be experienced locally and at a broader level.

3.1.2 Relevant Policies And Strategies

Relevant Commonwealth and State Government policies are summarised in *Table 3.1*. The policies reflect a focus on sustainability and positive regional development.

Table 3.1 *Summary of Key Policy Documents*

Policy	Purpose
Commonwealth Government Regional Policy Statement (2001): <i>"Stronger Regions, A Stronger Australia"</i>	In 2003, an Action Plan for the implementation of this Policy was created by an independent panel. The Action Plan assesses regional development issues, according to the broad subject areas of business, government, people and infrastructure.
Western Australian Government (2003): <i>"Hope for the Future – The Western Australian State Sustainability Strategy"</i>	This Strategy provides a framework for a whole of government approach to the State's development in accordance with sustainability objectives.
Western Australian Government (1998): <i>"The State Planning Strategy"</i>	This Strategy indicates that <i>'in the next three decades, the Pilbara region will be a world leading resource development area focusing on mineral extraction, petroleum exploration and production and the primary stages of downstream processing...'</i>
Western Australian Government Regional Development Policy (2003): <i>"Regional Western Australia – A Better Place to Live"</i>	This Policy provides a framework for the development of the state's non- metropolitan regions to achieve <i>'social, economic and environmental progress in a sustainable way'</i> .
Western Australian Government (1997) <i>"Pilbara Land Use Strategy"</i>	The Pilbara Land Use Strategy is a strategic 25 year plan for the Pilbara, based on the principles of ecologically sustainable development and multiple land use principles. The Strategy sets broad objectives for the development of the Pilbara.

The State Government has established a Regional Development Council as the peak advisory body to it on all regional development issues. The Council consists of the chairpersons of the nine Regional Development Commissions, two local government representatives and an independent chairperson. The functions of the Council are to:

- promote development in the regions;
- develop policy proposals on regional issues;
- assist commissions and relevant government agencies to work closely on regional issues; and
- report back to the Government on matters referred to it³.

Table 3.2 summarises the key regional and local policy and planning documents relevant to the project. These include regional development and town planning policy. At the regional level the focus is on sustainable development in particular positive population growth, reduction in the use of and impacts associated with FIFO workforces, indigenous unemployment and increasing economic diversity.

Table 3.2 *Regional and Local Policy Summary*

Policy	Purpose
Pilbara Development Commission (1996) <i>“Pilbara Economic Development Strategy”</i>	The strategy was released by the Pilbara Development Commission with a timeframe of 2010. The aim of the strategy is to achieve a less mobile, and increasing population. The nine major objectives of the strategy include: <ul style="list-style-type: none"> • diversity of economy; • opportunities for Aboriginal people; • removal of impediments to development; • normalisation of housing; • improvement and enhancement of service provision of education, health and other social issues; • improvement of the general public perception of the Pilbara; • exploitation of the Pilbara’s competitive advantage; • advocacy of multiple land use in the Pilbara based on the principles of ecologically sustainable development; and • improvement of infrastructure.
Pilbara Development Commission (2003): <i>“Pilbara Regional Priority Plan”</i>	The Pilbara Regional Priority Plan was formulated in response to a Cabinet Standing Committee on Regional Policy determination in June 2003. The Plan was developed using the sustainability framework provided in the State Sustainability Strategy and involved the engagement of stakeholders. The Plan attempts to achieve the creation of a social environment that attracts and retains a skilled workforce, and provides an attractive and safe environment for residents.

³ <http://www.regional.wa.gov.au/comms.asp>

Policy	Purpose
Town of Port Hedland (<i>unpublished – nearing completion</i>) “Port Hedland Industrial Land Strategy”	This study is being undertaken as part of a strategic planning process designed to ensure that the Town, together with key stakeholders, is prepared to meet future demands for the various forms of industrial land. It is expected to develop a long-term strategy for the provision of industrial land in Port Hedland and address concerns of the community to ensure that an adequate and appropriate supply of industrial land is available to support the future growth of the town. This study will provide a review of the social, demographic, economic, environmental, heritage, and cultural aspects of the town of Port Hedland. It identifies the type of industrial land likely to be required in the future and identifies sites that have the potential to meet these future demands.
Town of Port Hedland (2001) “Town Planning Scheme No. 5”	The Town of Port Hedland’s Town Planning Scheme No.5 (TPS5) was gazetted on 31 August 2001. TPS5 controls land use within the municipal boundaries and is a legislative document. It establishes zonings within the Town and dictates what land uses are permitted within these zones. Being a statutory document, TPS5 strictly enforces the requirements indicated in the text and deviation from these requirements has every right of being refused.
Shire of East Pilbara (2003) “Draft Town Planning Scheme No. 4”	The Shire of East Pilbara’s Town Planning Scheme No.4 is presently at draft stage awaiting gazettal. Like the Town of Port Hedland’s TPS5 it controls land use within the municipal boundaries and is a legislative document (once gazetted). It establishes zonings within the Shire and dictates what land uses are permitted within these zones. Development within the two main local government areas are guided by town planning schemes.
Town of Port Hedland (September 2003) “Port Hedland Area Planning Study”	This study was undertaken by the Government of Western Australia and the WAPC to identify the major issues facing the Study Area and provide recommendations at a subregional strategic level. The Study also incorporates the Port Hedland Structure Plan. This Structure Plan is intended to guide the growth and the townsite development of Port Hedland over the next 30 years to cater for an expected population growth of 40,000.
Port Area Town Centre Development Plan (1997)	This policy is relevant in so much as town centre development may impact buffers of Port operations.

4 COMMUNITY PROFILE

4.1 DEMOGRAPHICS

4.1.1 Population

The social baseline has a focus on the towns of Port Hedland and Newman. However, it is important when establishing a demographic baseline to present the characteristics of these towns in the context of the Pilbara region and the State. The estimated resident population (ERP) of the Pilbara region was 39,676⁴ in 2001 and the population of the Pilbara constitutes around 2% of the State's population. The vast majority of Pilbara residents are located in the western third of the region, which includes the towns of Port/South Hedland, Karratha, Newman, Tom Price, Paraburdoo, Roebourne, Wickham, Dampier, Onslow and Marble Bar. The eastern portion of the region is largely desert, and home to a small number of indigenous people.

Port Hedland/South Hedland is the largest town in the Pilbara region and is a focus for major resources development in the region. *Table 4.1* shows the key population characteristics for Western Australia, the Pilbara region and townsites relevant to this baseline. The key conclusions to be drawn from *Table 4.1* include:

- Port Hedland/South Hedland is the main centre of population in the region;
- the local communities adjacent to the Project have a higher proportion of males than females in the workforce compared with the State average. This is common to the Pilbara and reflects the resource-oriented employment in the region;
- age profiles for the local communities generally reflect the State average with the exception that there are significantly less people aged over 65 years and significantly more under the age of 15 years and the median age is lower in Port Hedland and Newman;
- there is a significantly higher proportion of indigenous people living in Port Hedland than either the State average or Newman; and
- household sizes are significantly larger in Port Hedland and Newman than elsewhere in the State.

⁴ Department of Local Government and Regional Development (2003) *Indicators of Regional Development in Western Australia*

Table 4.1 Population Characteristics of Western Australia, Pilbara and Local Communities, 2001

Characteristic	State of W.A	Pilbara Region	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Population	1,851,252	39,676	19,855	13,099	3,535
Total Males (%)	50%	56%	57%	55%	54%
Total Females (%)	50%	44%	43%	45%	46%
Mean Household Size	2.6	2.9	3	3.6	3.4
Age Characteristics					
% Pop. aged < 15 yrs	21%	24%	24%	25%	28%
% Pop. aged > 15 yrs	79%	76%	76%	75%	72%
% Pop. aged > 65 yrs	11%	5%	4%	4%	3%
Median Age	34	31	32	30	30
Indigenous Population					
Total number	58,496	5,736	3,418	1,829	165
% of total population	3%	13%	17%	14%	5%

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001.

4.1.2 Population Change

Population in the Pilbara decreased during the early to mid 1990s before stabilising in the mid to late 1990s during the period of resource investment. The population declined again as world demand for resources slowed in the wake of the Asian financial crisis. Census data from 2001 does not clearly show to what extent the current investment cycle has reversed the decline in resident population.

Table 4.2 shows population change between 1996 and 2001. It demonstrates that during the period 2001 to 2002, the population of regional Western Australia grew by 1.1% and the State population grew by 1.4%. The population in the Pilbara decreased and the population of the Shire of East Pilbara decreased significantly. It is apparent that the population of Newman has declined in response to BHP Billiton restructuring of Pilbara operations. By 2001, the Shire of East Pilbara had lost 33.6% of its 1991 population.

The population of Town of Port Hedland decreased 0.1% from 1996 to 2001 and the population of East Pilbara decreased 14.6% from 1996 to 2001.

Table 4.2 Population Change Between 1996 and 2001

Locality	1996	2001	% Change 1996 – 2001
East Newman (SLA)	7,945	6,786	-14.6%
Port Hedland (SLA)	13,116	13,099	-0.1%
Pilbara Region	44,798	42,747	-4.5%
Perth Metropolitan SD	1,244,320	1,339,993	7.7%
Western Australia	1,726,095	1,851,252	7.3%

Source: ABS Census of Population & Housing, Basic Community Profile (Table B01), 1996 & 2001

Notes: 1. SLA – Statistical Local Area 2. SD – Statistical Division

4.2 REGIONAL DEVELOPMENT

Development within the Pilbara coincided with the discovery of vast deposits of iron ore in the region. Large-scale mining commenced in the 1960's, and to cater for this, a number of small mining towns were established in the Pilbara, including Dampier, Tom Price, Paraburdoo, South Hedland, Newman, Wickham, Pannawonica, Goldsworthy and Shay Gap (now closed). These towns provided logistical support and living quarters for the miners, and were heavily dependent on the mining industry to sustain them. Responsibility for the townsite of Newman was handed over from BHP to Shire of East Pilbara in 1981.

In the 1970's and 1980's, discoveries of oil and natural gas were also made off the Pilbara coastline in the seas around Australia's North West shelf. Development of these oil and gas resources caused the Pilbara's economy and population to grow dramatically.⁵

Resources projects are the main economic and employment generators in the region – in 2001, nearly a quarter of Pilbara employment was in the mining sector⁶ - and resource projects naturally impact on the social profile and communities of the towns that support them. Dampier Salt and BHP Billiton Iron Ore are the major enterprises in the Town of Port Hedland and mining also dominates the social and economic life of the Shire of East Pilbara. The cyclical nature of many of these resources projects (ie. peak workforce during construction phase, and a much smaller workforce during operations) tends to lead to a corresponding boom/bust economy and transient population for these small towns that service these projects. Social structures appear less stable than other parts of the State (eg. 62% of residents in the two shires are living at the same address as a year ago compared with 75% for WA as a whole).

⁵ Pilbara Development Commission website; "History of the Pilbara"; <http://www.pdc.wa.gov.au/region/history.htm>

⁶ www.regional.wa.gov.au/perspectives/pdfs/pilbara.pdf

Further, many of these operations use a FIFO regime from Perth which are not considered by the Pilbara Area Consultative Committee to benefit the towns in the region and are of concern to Pilbara Development Commission⁷ and some local governments. FIFO operations are associated with adverse social impacts⁸ on both the workers and their families (alcoholism, depression, and stress).

4.2.1 *Amenity and Cultural Assets*

Because of the proximity of the majority of the regional population to the coast, fishing, diving and other marine-based recreational pursuits are common. In addition to this, the region's main towns contain basic cultural and recreational facilities, and residents have access to a range of sporting and recreational activities that are supported by local, regional and state agencies.

The region is also culturally and environmentally diverse, and is well known for its heritage assets. There are numerous examples of Aboriginal rock art throughout the Pilbara and there are also a variety of natural attractions in the region, including the Karijini and Millstream/Chichester National Parks and the Dampier Archipelago.

Shire of Port Hedland has recently completed a cultural development plan and facilities include: Matt Dunn Cultural Centre (theatre, music and movies) and Courthouse Arts Centre & Gallery. In the public domain there are art installations (banners and sculpture) and a heritage trail.

The Port Hedland port operations are an attraction for visitors and there are some expectations that the success of recent feature film *Japanese Story* may stimulate additional industrial tourism to mining areas.⁹

4.2.2 *Housing*

Housing stock is varied across the Region in response to differing climate types. Cyclone resistant building and the remote location make house building relatively expensive. However, housing is generally more affordable than in the Perth metropolitan region due to a higher median income in the Pilbara and lower land values. The median price of a single residential unit in the Pilbara is \$173,000 and median home loan repayments are \$400-599 per month. Against this, median weekly household income is \$1,200-\$1,499 - making home loan payment around 9% of income¹⁰.

⁷ Pilbara Development Commission (2003) "Pilbara Regional Priority Plan"

⁸ Sibbel A (2002) "The psychosocial well-being of children from FIFO mining families", Honors thesis, Edith Cowan University, WA

⁹ John Crowley, BHPB IO, presentation to Public Relations Institute of Australia, April 2004

¹⁰ ABS - 2001 Census 540 Pilbara (Statistical Division)

Median monthly home loan repayments in Perth are \$800-\$999. Median weekly household income is \$800-\$999, therefore home loan repayments are around 25% of income.

Table 4.3 presents summary data on the status of residential dwellings in the local area. It is evident that there are a significant number of unoccupied dwellings in Port Hedland and Newman. The impact of this will be more significant in Newman due to the lower population base in the town. The town has 37% of dwellings unoccupied.

A significant number of vacant premises are the former homes of BHP Billiton workers who have left the town and it is understood most are still owned by BHPB. BHP Billiton Iron Ore is likely to increase its workforce in Newman and even allowing for building of a new supply of homes, vacancy rates are likely to decrease.

Table 4.3 *Housing Characteristics in Selected Areas, 2001*

Residential Dwelling Characteristics	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Dwellings	7,862	4,971	2,097
Total Occupied	6,224	4,261	1,324
Total Unoccupied	1,638	710	773
% unoccupied	21%	14%	37%
Rental (%)	42%	47%	37%
Government Rental (%)	7.8%	11%	1%

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001.

Table 4.4 presents summary data on rent and housing loan repayments for 2001. While Port Hedland is generally on par with the State average in terms of housing repayments and weekly rents, in Newman and other parts of the two shires, the median levels are considerably lower. The excess supply of housing in Newman and rent subsidies will have an affect on average rents, but it is likely basic land economics of ample land supply in remote areas with limited housing demand are a more powerful force. Consultation will provide a qualitative assessment of the market dynamics.

Table 4.4 Summary Data on Rent and Housing Repayments, 2001

Characteristic	State of W.A	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Population	1,851,252	19,855	13,099	3,535
Housing Factors				
Median monthly housing loan repayments	\$800-\$899	\$200-\$399	\$600-\$799	\$200-\$399
Median weekly rent	\$100-\$149	\$50-\$99	\$100-\$149	\$50-\$99
Average household size	2.6	3	3.6	3.4

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001.

4.2.3 Social Infrastructure

Provision of social services in the Pilbara varies. While the main Pilbara towns have a reasonable level of social service provision, it is generally recognised that the health and welfare services in the remote communities outside the main towns of the Pilbara region are inadequate¹¹. A Population Employment Ratio index score of service provision provided by the Commonwealth Department for Transport and Regional Development¹² shows Pilbara (4.4) trailing WA as a whole (3.2). Aboriginal health is also regarded as being poorly serviced, exacerbated by the difficulty in attracting doctors and other health workers to the Pilbara. Other commonly identified issues¹³ include:

- restricted choices in secondary and tertiary education courses and facilities; and
- lack of full time drug and alcohol counsellors working in the Pilbara.

¹¹ WALGA (2003) "Submission to Health Consumers Council in Response to Health Reform Committee Discussion Paper"

¹²

http://www.dotrs.gov.au/regional/northern_forum/locations/pilbara/situation_report/regional_situation.htm

¹³ Pilbara Development Commission (2003) "Pilbara Beyond Priority Plan"

4.3

VISUAL IMPACTS, AESTHETICS AND NOISE

The proposed site of port facilities is adjacent to existing operational port facilities. For much of its length, the proposed rail alignment passes through grazing land and is generally between 2-3km of the existing BHP Billiton Iron Ore line and the proposed Hope Downs alignment. Near the light industrial area of Wedgefield it passes within approximately 1.5km light industrial properties with homes permitted under town planning provisions as 'caretaker residences'.

The proposed mining areas are in extremely remote areas.

Stockpile areas within port operations are a potential source of dust. Dust is a well-recognised nuisance issue for residents of Port Hedland and especially impacting the development potential/vibrancy of the West End of the town. The health effects of dust are of concern to some residents and environmental regulators.

The port and rail operations are also a potential source of noise. Noise can create a nuisance for local residents and may be of concern to the local community and regulators.

4.4

CULTURAL HERITAGE

Assessment of potential impacts on Aboriginal heritage is outside the scope of this current study. Consultation is ongoing and heritage studies are being conducted with the close cooperation of indigenous people and their legal representative body, the Yamatji Marlpa Barna Baba Maaja Aboriginal Corporation through their service arm the Pilbara Native Title Service.

The project will affect five Native Title claim areas:

1. Nyiyaparli people;
2. Palyku people;
3. Mart Idja Bunjima people;
4. Karriyara people; and
5. Karriyara/Yinjibarndi people.

Negotiating protocols have so far been established with four of these groups and regular meetings with their working groups and representative body is taking place.

FMG is working closely with regional Aboriginal groups and the Pilbara Native Title Service to develop a vocational training program based on meaningful training with guaranteed employment on completion.

Environmental scoping documents for the two projects have noted there are no European heritage sites within the Project boundaries, however, there are many sites in Town of Port Hedland listed and provisionally listed on the Australian Heritage Database.

5.1 NATIONAL AND STATE ECONOMY

The resources industry (including mineral and petroleum production) accounts for 35% of Australia's good and service exports. Australia's balance of payments is critically dependent on the success of this sector, with capital investment in the resources sector accounting for 12% of annual private capital investment in Australia.

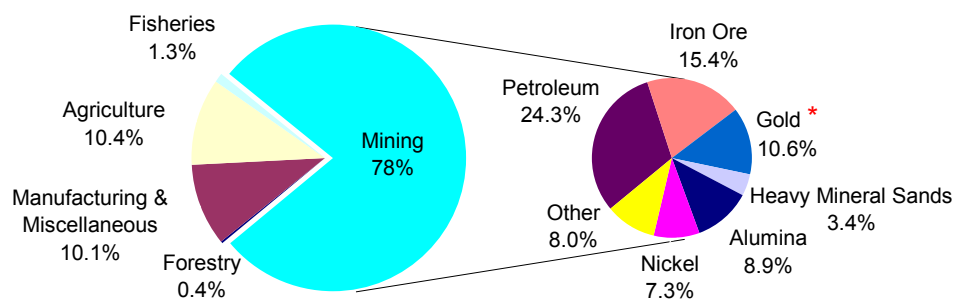
The WA economy is dominated by the resources sector. Western Australia is one of the world's major iron ore producers. During 2002, the State accounted for approximately 16% of the world's iron ore production with 96% of production (or \$4.87 billion) sold to overseas markets.¹⁴

The WA resources sector is very significant in terms of the national economy, accounting for:

- over 48% of the nation's mining and petroleum production;
- over 60% of the nation's mineral exploration investment; and
- 97% of the nation's iron ore production.

The composition of WA's exports is shown in *Figure 5.1*.

Figure 5.1 Western Australian Commodity Exports 2002-03 – A\$32.4 billion¹⁵



* Includes \$1.5 billion gold originating from States and Territories outside of

¹⁴ DOIR *Western Australian Iron Ore Industry 2003*

¹⁵ WA Department of Industry & Resources, *Resources Sector Summary Report, 2002-03*

The State is a major player in the resources sector with almost 500 projects and some 50 different minerals in commercial production.

The resource sector is the largest single contributor to Gross State Product (GSP) in the WA economy. In 2002-03¹⁶, the sector:

- provided over 78% of the State's total exports estimated at A\$25 billion;
- contributed 23% of Western Australia's Gross State Product (GSP), mainly through export income as well as downstream manufacturing and processing;
- directly employed 5% of the State's workforce; and
- indirectly employed an additional 15% of the State's workforce;

Iron-ore accounted for 20% of the State's resource revenue. However, Australia's share of the growing Chinese market for iron ore has been declining in recent years.¹⁷

- WA's business investment in 2002-03 recorded a solid 19% increase compared to the previous year. Business investment in Western Australia is highly dependent on activity in the State's resource sector, with around 55% or A\$3.9 billion of capital expenditure being accounted for by the mining sector in 2002-03;
- Mining investment in the State rose by 26% to A\$3.9 billion in 2002-03, compared to A\$3.1 billion in 2001-02; and
- WA accounted for 43% of the total Australian mining investment of A\$9.0 billion in 2002-03. This compares to 43% of Australian mining investment of A\$7.3 billion in 2001-02.

Comparisons of total new investments within the State and Australia over recent years can be seen in *Figure 5.2*.

¹⁶ WA Department of Industry & Resources, *Resources Sector Summary Report, 2002-03*

¹⁷ FMG analysis of GSJBWere presentation

Figure 5.2 Private New Capital Expenditure: Western Australia and Australia¹⁸

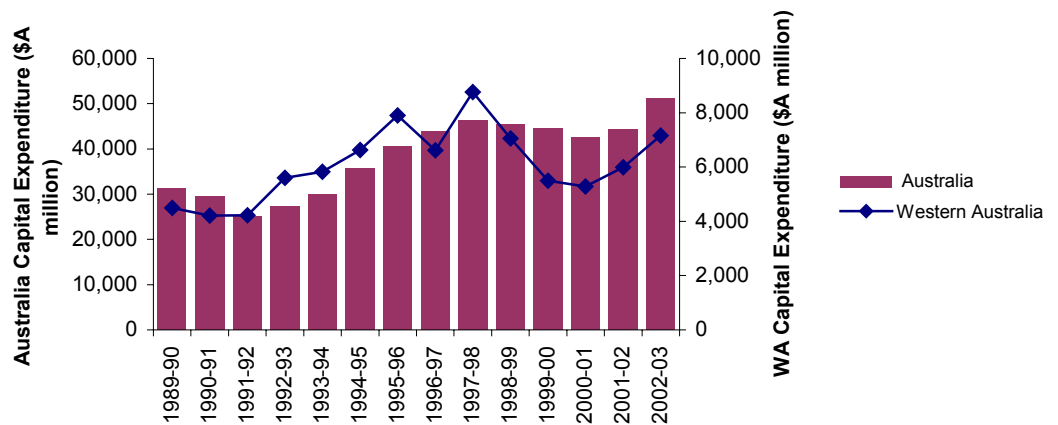
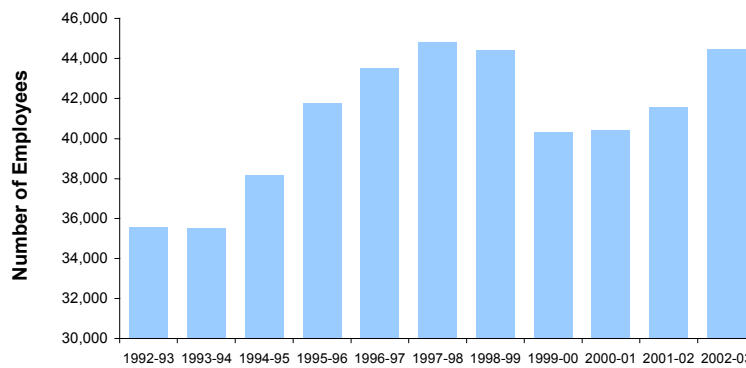


Figure 5.3 shows the number of people in the State directly employed in the resource sector over the past decade.

Figure 5.3 Direct employment in the Western Australian Resource Sector over the past decade¹⁹



5.2 REGIONAL ECONOMY OF THE PILBARA

5.2.1 Overview

The Pilbara is one of the most vital and dynamic wealth producing regions in WA, responsible for the production of goods and services worth more than A\$16 billion per annum.

¹⁸ WA Department of Industry & Resources, *Resources Sector Summary Report, 2002-03*

¹⁹ WA Department of Industry & Resources, *Resources Sector Summary Report, 2002-03*

The mining and petroleum industries continue to be the predominant earners for the region, with a total value of production of A\$15.3 billion per annum, which accounts for more than 55% of WA's total mineral and energy production. While the mineral and petroleum sectors will continue to be the mainstay of the Pilbara's economy, the region is continuing to diversify and expand its economic base with the continued development of its tourism, retail, trade and agricultural industries.

The Pilbara economy is based primarily on iron ore, petroleum and solar salt production. The region produces 97% of Western Australia iron ore production and the value of iron-ore products contributes around 15% (A\$2.25 billion) of the Region's mineral and petroleum export income.

In 2002-03, sales of iron-ore increased 13% to A\$5.0 billion²⁰. The majority of all iron ore produced is exported, primarily to East Asia, however 7.2 million tonnes of the Region's 155.8 million tonnes iron ore production was traded domestically.

5.2.2 *Other Development Projects*

Ongoing development of mining and oil and gas and associated downstream processing opportunities is expected to underpin future economic growth in the region. *Table 5.1* shows planned and proposed projects.

Table 5.1 *Planned and Proposed Pilbara Minerals and Energy Projects*

Project	Project Value (\$ M)	Employment - Construction	Employment - Operations	Construction Commencement
<i>Iron and Steel</i>				
BHP Billiton: Mining Area C iron ore mine and infrastructure	1,000	500	200	2003
Hope Downs iron ore mine	1,050	500	300	-
Cape Preston mine	3,000	5,000	1,050	-
<i>GAS</i>				
Woodside: 4th LNG Train, 2nd Trunkline	2,400	2,000	70	2003
Woodside: 5th LNG Train, 2nd Trunkline	Contingent on market conditions			
Gorgon 2 Train LNG	6,000	2,900	600	Late 2005
<i>PETROCHEMICALS</i>				
Dampier Nitrogen ammonia-urea plant	900	1,000	130	-
Burrup Fertilisers ammonia plant	630	500	60	30 April 2003
Japan DME dimethyl-ether plant	1,000	1,000	150	First half 2004

²⁰ www.doir.wa.gov.au/documents/statisticaldigest/ironore2003.pdf

Project	Project Value (\$ M)	Employment - Construction	Employment - Operations	Construction Commencement
GTL Resources methanol plant	770	500	60	2006
Sasol-Chevron gas to liquids plant	2,000	2,500	200	-
<i>OTHER</i>				
Telfer gold mine expansion	1,200	1,222	620	2002
Port Hedland manganese dioxide project	136	500	115	-
Port upgrades (Dampier and Port Hedland)	25	50	10	-
Sundry other projects	3,000	1,500	300	-
Total value	23,111	19,672	3,865	

Source: DoIR website;

<http://www.doir.wa.gov.au/investment/4D11F2E967724180A2CA089ECA538E90.asp>

5.2.3 *Competitive Situation*

The Pilbara is well placed to service increasing demand from the Far East and particularly China. As well as satisfying demand during the current boom, Western Australia projects are positioning for long-term supply deals often in joint venture.

Iron ore production is currently highly concentrated within the Pilbara with Rio Tinto's Hamersley Iron and Robe River, and BHP Billiton effectively controlling Pilbara's 44% share of the world's seaborne trade in iron ore.

FMG has identified 2.1 billion tonnes of 'stranded resource' in the Pilbara that could be developed using this proposed rail infrastructure. The line could support production of 100mtpa if port facilities were available.²¹

5.2.4 *Local Economic Profile*

Table 5.2 shows the key employment characteristics of the local communities in the context of the State and the Pilbara. It is evident that the local communities of Port Hedland and Newman have a higher rate of labour force participation as well as higher levels of employment than the State average. Unemployment levels in Port Hedland and Newman are 5% and 3% respectively, compared with a State average of 8%. The majority of those people who are employed (approximately 75%) are employed on a full-time basis.

²¹ Chris Catlow, Chief Financial Officer, FMG

While unemployment levels in these areas are relatively low on average, the incidence of unemployment for indigenous people is significantly higher. In the Pilbara region in total, approximately 20% of indigenous people are unemployed²² compared with the non-indigenous average of 4.4%. Further, non-indigenous people earn considerably less income on average than non-indigenous people. In 1998/99 the Aboriginal Affairs Department estimated the annual average income for indigenous people to be \$9,126 compared with the non-indigenous average of \$34,210.

Table 5.2 *Employment Characteristics of Selected Areas, 2001*

Characteristic	State of W.A	Pilbara Region	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Population	1,851,252	39,676	19,855	13,099	3,535
Labour Force					
Total	896,266	22,108	10,259	6,339	1,906
% of total population	48%	52%	52%	50%	54%
Not in Labour Force					
Total	486,740	7,866	3,650	2,441	422
% of total population	26%	18%	18%	19%	12%
Employment					
Total employed (no.)	828,781	21,062	9,792	5,999	1,845
Total employed (%)	92%	95%	95%	95%	97%
Full-time (no.)	520,491	14,913	7,091	4,284	1,348
Full-time (%)	63%	70%	72%	71%	73%
Part-time (no.)	285,302	5,492	2,433	1,507	465
Part-time (%)	33%	26%	25%	25%	25%
Total unemployed (no.)	67,485	1,046	467	340	61
Total unemployed (%)	8%	5%	5%	5%	3%
Employed not stated (%)	<1%	3%	3%	3%	2%

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001.

Income levels in the Pilbara region and the local communities adjacent to the FMG project tend to be higher than elsewhere in the State. Pilbara residents generally earn an above average wage and combined with an unemployment rate that is substantially lower than the State average, the employed can enjoy an attractive lifestyle. Total employment in the Pilbara Region in the June 2003 quarter was 23,287 people. This represented an increase of 0.7% over the previous quarter when there were 23,128 people employed in the region²³.

²² Aboriginal Affairs Department Annual Report, 1998/99

²³ Department of Local Government and Regional Development (June 2003) *Regional Trends and Indicators – Pilbara Region*.

Table 5.3 provides a comparison of income characteristics which demonstrates that median monthly housing repayments are considerably lower in Port Hedland and Newman than the State average, reflecting the transitory nature of the population in these areas and the fact that much of the housing is supplied by mining companies, particularly in Newman. In addition, the table highlights the relatively high income levels in the region, reflective of the resource industry as a whole and the higher levels of educational attainment/specialist skills in the mining industry. The population in the two shires has higher than State average attainment of Certificate qualifications and 7.3% of the 15+ population have a bachelor degree compared to the State average of 9.3%.

Table 5.3 *Income Characteristics*

Characteristic	State of W.A	Pilbara Region	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Population	1,851,252	39,676	19,855	13,099	3,535
Income Factors					
Median weekly individual income	\$300-\$399	\$500-599	\$700-\$799	\$500-\$599	\$700-\$799
Median weekly family income	\$800-\$999	\$1,500 - \$1,999	\$1200-\$1499	\$1200-\$1499	\$1500-\$1999
Median weekly household income	\$700-\$799	\$1,200-\$1499	\$1200-\$1499	\$1200-\$1499	\$1200-\$1499
Average household size	2.6	2.9	3	3.6	3.4

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001

Livelihoods and lifestyles are influenced by the nature of employment and the interactions between different economic sectors. Table 5.4 provides a summary of the major employment sectors for the region and the different employment levels. This data highlights the dominance of the resource sector in Newman and to a lesser extent in Port Hedland. Other key economic sectors for Port Hedland include government and service industries, construction and retail trade. In Newman mining is particularly dominant. The only other industry sector that provides greater than 10% of employment is the retail sector.

The same Community Profiles also indicate more than 50% of all males employed in Newman are employed in the mining sector. In Port Hedland approximately 26% of all males employed are employed in the mining sector.

Table 5.4 Employment by Industry Sector and Occupation, 2001

Characteristic	State of W.A	Pilbara Region	Combined LGA's ¹	Port Hedland ²	Newman ³
Total Population	1,851,252	39,676	19,855	13,099	3,535
Total Population Employed (TPE)	828,781	21,062	9,792	5,999	1,845
Employment by Industry (% of TPE)					
Agriculture, Forestry and Fishing	4.4	2.1	1.9	0.7	0.5
Mining	3.5	23.8	25.1	18.1	39.8
Manufacturing	10.2	5.5	5.9	7.2	4.8
Electricity, Gas and Water Supply	0.8	1.0	0.6	0.8	0.3
Construction	7.5	10.3	10.0	9.8	4.7
Wholesale Trade	5.1	4.0	3.8	4.6	3.1
Retail Trade	14.8	9.7	9.0	11.0	11.0
Accommodation, Cafes, Restaurants	4.6	4.7	4.8	4.4	5.7
Transport and Storage	3.9	4.2	4.0	5.1	2.4
Communication Services	1.5	0.9	0.9	1.0	0.7
Finance and Insurance	2.9	0.7	0.7	0.8	1.0
Property and Business Services	10.8	8.2	8.1	9.4	5.0
Government Admin. And Defence	4.4	4.6	5.1	4.8	3.0
Education	7.3	6.2	6.3	6.9	6.2
Health and Community Services	9.6	5.6	6.7	8.0	5.0
Cultural and Recreational Services	2.2	0.9	0.6	0.7	1.0
Personal and Other Services	4.0	3.6	3.8	3.7	3.3
Non-classifiable	0.8	1.2	1.3	1.6	1.5

Source: ABS Basic Community Profiles, 2001

- Notes:
1. Includes the combined Local Government areas for Port Hedland and Shire of East Pilbara.
 2. Represents the Urban Centre Locality of Port Hedland as defined in the ABS Basic Community Profiles, 2001.
 3. Represents the Urban Centre Locality of Newman as defined in the ABS Basic Community Profiles, 2001.

The dominant occupations for those people employed in Port Hedland are trades persons and related workers (18% of total employed), professionals (15%), intermediate production and transport workers (14%), associate professionals (13%) and intermediate clerical/sales workers (12%).

In Newman, intermediate production and transport workers are predominant (22%) followed by trades persons and related workers (18%), associate professionals (14%) and professionals (13%).

It should be noted that if FMG's employment projections are correct and 2000 full time job equivalents are employed during the construction phase, this is equal to 10% of the entire Pilbara workforce, 20% of the current workforce in the two shires, and is more than double the current number of workers in the construction industry in the two shires. The market for skilled and semi-skilled labour will tighten (labour costs go up) as several construction projects progress simultaneously.

6 *SUMMARY OF MAJOR SOCIAL OPPORTUNITIES AND RISKS*

6.1 *OVERVIEW*

The social and economic context described in Sections 4 and 5 presents a number of opportunities and risks which FMG and stakeholders should consider in planning for the Project. These have been derived from an assessment of project activities, likely impacts and potential consequences, as outlined in Section 7. A summary of those likely to be of the greatest magnitude is outlined below.

6.2 *OPPORTUNITIES*

The key opportunities relate to economic development and infrastructure provision in the Pilbara including:

- contribution to economic development of the Pilbara Region through local procurement and multiplier effects of income;
- creation of opportunities for sustainable indigenous employment;
- additional investment in services infrastructure (eg. power);
- promotion of reconciliation and contribution to solution of indigenous issues;
- contribution to increased standards of living in indigenous communities; and
- use of leverage with State Government to negotiate funding to meet additional demands on local governments and services providers.

6.3 *RISKS*

Key risks identified to date include:

- unsuccessful investment decisions by local business people based on unreal expectations;
- additional demands on unfunded service provision;
- social impacts on families of FIFO workers;
- wage inflation and local price inflation (including housing);

- supplier organisation and community dependency;
- damage to indigenous heritage sites;
- increase in the relative poverty of the indigenous community;
- anti-social behaviour, crime, drug supply/abuse and increased prostitution;
- health concerns (dust);
- lose of social amenity (dust, noise, vibration); and
- port traffic safety.

6.4 *FMG SOCIO-ECONOMIC GOALS*

FMG has developed a range of policy goals and commitments to address some of these risks and realise opportunities. In summary these are:

6.4.1 *Community Development*

FMG will:

- facilitate community involvement in company planning processes and decision making;
- not use a predominantly FIFO workforce; and
- develop a housing plan to ensure quality and equitable housing for employees whilst minimising negative impacts on existing communities.

6.4.2 *Indigenous Community Development*

FMG will develop a Vocational Training and Education Centre (VTEC) to provide:

- meaningful training opportunities for indigenous people who would like to work for FMG with guaranteed employment on completion; and
- small business opportunities for local indigenous community members.

6.4.3

Economic

FMG will maintain a focus on regional capacity building through:

- offering local employment opportunities;
- implementing education and training programs for a local workforce;
- using local suppliers and establishing partnerships with local businesses wherever possible; and
- offering a competitive open access regime for the use of its port and rail infrastructure to contribute to the long term economic sustainability of the Pilbara region.

Ongoing stakeholder liaison will enable FMG to further assess potential risks, opportunities and mitigation measures.

7.1 IDENTIFICATION OF RELEVANT FACTORS REQUIRING ASSESSMENT

Table 7.1 shows a summary of potential project activities and the potential impacts that may arise from these activities. The Project activities that have the potential to give rise to socio-economic impacts include those in the planning/pre-construction, construction, operation and decommissioning phases. In summary, these activities are:

Planning/Pre-construction

- project approvals and negotiations (including Native Title negotiations);
- public communications about the project;
- procurement; and
- changes to land tenure.

Construction

- procurement;
- mobilisation of construction workforce;
- construction of temporary workcamps;
- earthworks and blasting activities;
- general construction activities; and
- creation of an area around construction activities that excludes the public.

Operation

- payment of royalties and taxes;
- procurement;
- mobilisation of the operational workforce;
- training;
- operation at the port;
- operation of the railway;
- mining operations;
- power use; and
- water use.

Decommissioning

- demobilisation of the workforce.

Table 7.1 is a summary of a purely desktop review by the project. This table can be further developed through consultation with relevant stakeholders to:

- assess the relative significance of potential impacts;
- add other impact which may not have been listed; and
- determine management strategies which are acceptable to the key stakeholders.

Some recommendations for the consultation approval and how the above points might be achieved are outlined in Section 8.

Table 7.7.1 Project Activities and Predicted Impacts

Project Phase	Source of Impact (Project Activity)	Predicted Impact	Location of Impact	Potential Consequence/s of Impact
Pre-construction/ planning	Project approvals and negotiations	Increased awareness of project	Western Australia, Pilbara region and communities of Port Hedland and Newman Western Australia, Pilbara region and communities of Port Hedland and Newman Port Hedland	Cynicism and opposition in the community or engagement
		Investment confidence		Businesses invest anticipating greater opportunities
Future development		Development now restricts future development options at port/stockpile Depressed real estate values		
Changes to land use Native Title negotiations		Wedgfield, pastoral leases Mt Nicholas mine-site; railway alignment; Port site	Development of relationships with indigenous people Tension between Native Title parties Proposed Hope Downs investment does not proceed	
	Completion of project finance	Consolidation of rail proposals	Western Australia	
Construction	Procurement	Employment opportunities	Western Australia, Pilbara and local communities of Port Hedland and Newman Western Australia, Pilbara and local communities of Port Hedland and Newman	Increased direct employment in local areas, region, State and interstate Increased activity for existing businesses
		Business development and investment confidence		Increased business service diversity through larger (viable) markets
		Indirect economic activity		On-spend multiplier effects of initial spend and indirect employment
	Mobilisation of construction workforce	Temporary population increases	Western Australia, Pilbara and local communities of Port Hedland and Newman Port Hedland, Newman	Additional demands on social infrastructure
		Changed demographic characteristics through increased number of males, increase in transient population	Port Hedland, Newman Port Hedland, Newman Port Hedland, Newman	Pressures on operating budgets of local governments Increased demand for local housing Potential increase in workers with families providing further population increase
	Construction of camps to accommodate temporary workforce Earthworks and blasting	Modification to physical or social landscape by camp structures	Port Hedland, Newman Mt Nicholas mine site, railway alignment	Additional anti-social behaviour Interruptions to view corridors or visual amenity
		Disturbance of Indigenous archaeology or anthropology Interruptions to social amenity as a result of noise, dust and vibration	Railway alignment Mt Nicholas mine site Port Hedland	Indigenous peoples opposition to the project Local complaints and/or opposition to the project
	General construction activity Creation of construction exclusion area	Interruptions to social amenity as a result of noise, dust and vibration	Port Hedland	Local complaints and/or opposition to the project
		Restriction on operations of pastoral lessee in the restricted area	Chichester mine sites Along railway line	Negative perceptions of the project by pastoralist
		Requirement for fence removal and	Pastoral lease	Increased costs for pastoralist

Project Phase	Source of Impact (Project Activity)	Predicted Impact	Location of Impact	Potential Consequence/s of Impact
		coordination of animal movements		
Operation	Payment of taxes and royalties	Revenue to State	Western Australia	Payroll tax and royalty income
	Procurement	Employment opportunities	Western Australia, Pilbara, Port Hedland and Newman	Increased direct employment in local areas, region, State and interstate
		Business development and investment confidence	Western Australia, Pilbara, Port Hedland and Newman	Increased activity for existing
	Mobilisation of operations workforce	Indirect economic activity	Western Australia, Pilbara, Port Hedland and Newman	New business start-ups and increased service diversity
		Income dependency	Port Hedland and Newman	On-spend multiplier effects of initial spend and indirect employment Businesses may become solely dependent upon FMG expenditure
		Increase in permanent population levels	Port Hedland and Newman	Increased demand for social infrastructure Increased opportunity for local Government to lobby for additional Government services that are dependent on population nos. Increased community activity and candidates for community participation Pressures on operations and operating budgets of service providers (health, welfare, emergency response, transport, civic, recreation) Impacts on cohesion of workers' families
		Creation of Non-FIFO and FIFO employment opportunities	Newman	
		Use of contract employment	Newman and Port Hedland	Community cohesion and sense of place is undermined by temporary nature of stay in towns
		Increased demand for housing	Port Hedland and Newman	Housing market is underwritten by increased employment Reduction in vacancy rates in Newman and Port Hedland; house price inflation Redevelopment/urban design opportunities
		Economic stimulus associated with new workforce	Port Hedland and Newman	Spending by employed families creates demand in service industries Spending with local companies creates additional local wealth
	Training	Enhanced skill base in local communities Improved opportunities for employment	Port Hedland and Newman Port Hedland and Newman	Improved economic well-being of communities Improved economic well-being of communities Reduced pressure on social welfare and support systems
	Port operations	Congestion in the port operations area	Port Hedland Port	Shipping operations of others delayed Increased challenge to manage shipping safety Stimulus to additional government spending on infrastructure/additional infrastructure costs
		Reduced social amenity and public health resulting from noise and dust	Port Hedland community	Community concerns and complaints about operations

Project Phase	Source of Impact (Project Activity)	Predicted Impact	Location of Impact	Potential Consequence/s of Impact
				Negative perceptions of FMG reputation
				Enhanced public concern about public health impacts of dust
	Rail operations	Payment of royalties to Port Authority Reduced social amenity associated with noise, vibration and dust from rail operations	Western Australia Communities adjacent to the railway line in Port Hedland/Wedgefield	Reduction of State borrowing/capital investment opportunities Community concerns and complaints about operations
	Mining operations	Increased potential for impacts on public safety due to operation of rail line Clearing and general operations reduce area available for other uses	Communities adjacent to the railway line in Port Hedland Pastoral lease and Native Title Rights	Negative perceptions of FMG reputation Potential concern and/or stakeholder criticism of project
	Power use	Additional power plant required at Newman and extra capacity at Port Hedland	Newman and Port Hedland	Increased infrastructure costs associated with power supply; reduced entry costs for subsequent industry expansion at Newman
	Water use	Greenhouse gas regulation and/or customer demand for carbon credits Concerns about future allocations of groundwater	Western Australia Pastoral	Customer buying trends and/or regulation may impose commercial penalties on project and State FMG reputation damage and increased regulator/NGO scrutiny
	Research & Development	Identification of opportunities for improved environmental management, socio-economic development and training	Western Australia, Pilbara, Port Hedland and Newman	FMG reputation enhancement; increased local social capital
Decommissioning	Demobilisation of workforce	Reduction in permanent workforce and population in Newman and Port Hedland	Port Hedland and Newman	May lead to decline in availability of services
				Reduction in demand for housing leading to increased vacancy levels Reduced availability of community members for participation in local groups and activities
		Reduced rate base for local Government	Port Hedland and Newman	Reduced capacity of Local Government to invest in local communities and maintain infrastructure
		Reduction in local procurement associated with mine operations	Port Hedland and Newman	Reduction in employment opportunities and economic multiplier effects

7.2 *DESCRIPTION OF POTENTIAL PROJECT IMPACTS*

The following gives a summary description of the potential socio-economic impacts as listed in *Table 7.1*.

7.2.1 *Pre-Construction*

The potential impacts that may occur in this phase will be generated by community awareness of the project and the interactions with stakeholders in relation to project approvals and negotiations over land tenure and Native Title. In particular, the project may generate investment confidence in the region and locally. This has the potential to be both a positive and a negative impact. Positive impacts will result from the development of additional local business through expansion or new start-ups in addition to multiplier effects. Negative impacts may occur where poor investment decisions are made, potentially on the basis of false expectations about project benefits.

7.2.2 *Construction*

The potential impacts for this phase of the project will relate to the mobilisation of the workforce and procurement of goods and services. These activities have the potential to have significant positive impacts in terms of employment, economic activity and business development.

The temporary increase associated with the construction population in Port Hedland has the potential to create issues associated with social cohesion, increased demand for housing and social infrastructure. However it is important that this is understood in the context of the general decline in population and the housing vacancy rates. Given that mining is a significant economic activity for Port Hedland the presence of additional construction workers is not likely to create a significant social impact. The 14% housing vacancy rate in Port Hedland indicates there is some capacity for this workforce to be absorbed in the local community. In addition, it is also likely that some of the workers will be drawn from the Port Hedland and Newman communities.

Few construction workers are expected to be based in Newman and therefore impacts are not expected in this location to the same degree as Port Hedland. Given the restricted capacity of the local construction industry, it may be that relatively few construction workers will be residents of Port Hedland or East Pilbara. If this is the case, the positive impacts of wages spending will be small. The ability of local people to acquire the skills required by FMG during the construction phase, will determine to a large extent, the benefits felt by the existing community during this phase.

Construction activities may create nuisance factors such as noise and dust. Which will need to be managed effectively by FMG to ensure the community is not affected. This likely only to be a concern in Wedgefield where the proposed rail is located in proximity to residential-industrial areas.

In areas where pastoral activities occur or where indigenous people use the lands, construction activities may restrict or modify these activities.

7.2.3 *Operation*

The impacts of the Project will result from the payment of royalties and taxes which will have impacts at the State level. The benefits of these royalties and taxes will be felt broadly through Government expenditure/reduced borrowing.

Procurement and employment related to port, rail and mining operations will predominantly be felt at the State and the local (Port Hedland and Newman) levels. State level impacts will be largely economic benefits associated with the export of iron ore.

Local level impacts which largely be a function of employment, local procurement and training. The Project is expected to result in 124 jobs in Port Hedland, associated with port activities, and 394 jobs for mining operations, with 124 of these employees (and their families) to be based in Newman. This represents 3% and 6.5% of the Port Hedland and Newman labour forces respectively.

These employees have the potential to contribute to social activities in these locations and to contribute to the local economy. Employees based in Newman may bring families into the town, thereby increasing the demand for social infrastructure but also the potential for local government to access a greater level of social services such as education, health and welfare workers. There are currently a significant number of vacant houses in Newman, and to a lesser extent Port Hedland, and the operations workforce could feasibly reduce these vacancy rates.

Training activities associated with the Project have the potential to create benefits for local communities.

7.2.4 *Decommissioning*

Demobilisation of the operations workforce will cause potential socio-economic impacts during this phase of the Project. This will potentially result in a decline in the population of Newman and Port Hedland. The impacts are likely to be most significant in Newman where the town is smaller, more heavily dependent on mining and more dependent on a smaller number of operations.

8.1 MANAGEMENT OF STAKEHOLDER CONSULTATION PROGRAM

A stakeholder disclosure and engagement plan has been determined to be outside the scope of this report. However, it is recognised such a tool is required in further assessment of the project's social and economic impacts. FMG has requested advice on key characteristics for the effective management of its Stakeholder Consultation Program. The most significant observations are outlined below.

8.2 DEFINING REQUIRED STAKEHOLDER INPUT

Ultimately, the success of FMG's management of socio-economic issues will depend upon how focused the organisation is about what it wants from stakeholders. The chances of disagreement on consultation processes and unrealistic/unmet expectations developing are reduced when stakeholders have clarity about what role they are expected to play in interactions with FMG (eg. what kind of input is required at what stage, what are the boundaries of their influence on decisions, what does FMG want them to do/think as a result of a particular consultation activity?). Ambiguity about expectations can result in stakeholder communications being a source of additional business risk rather than the management solution intended.

FMG management should describe its risk profile with regard to social issues and decide on specific objectives of a consultation program by stakeholder grouping. Broadly, the range of these objectives could include:

- to inform stakeholders about FMG's plans without inviting requests for changes to Project design and procurement;
- to obtain opinion or technical expertise feedback on designs;
- to make final decisions in consultation with stakeholders, with adequate feedback as to "why" key decisions are made;
- to collaborate with stakeholders on the detailed design sharing some responsibility/privilege of decision-making;
- to build industry/community capacity to reduce operating costs/ensure a supportive project environment; or
- to place final decisions on certain matters in the hands of stakeholders.

8.3 *DETERMINING SIGNIFICANCE*

It is wise to engage stakeholders in the decision about how they will work with FMG to determine the significance of the impacts and opportunities identified engage in this study.

One successful decision support tool that stakeholders may wish to consider is to use a significance matrix to “rank” the relative importance of each impact identified (an example format is shown in *Annex A*).

The data on which to base conclusions of significance can be gathered by either qualitative methods (such as stakeholder interviews and consultative committee meetings), quantitative methods (such as stakeholder questionnaires and telephone survey) or a combination of both.

8.4 *STAKEHOLDER RELATIONS PROCEDURES*

By having clear lines of responsibility and authority in relation to stakeholder issues, FMG can eliminate some of the risks associated with stakeholder engagement. Some of the procedures questions FMG should consider are:

- Media enquiries – how will these be prepared for, handled, researched/approve/responded to, followed up, recorded, evaluated and by whom?
- Complaints – is the use of a standard process based on ANS 6269-1995 (including keeping a complaints log, defining an information flow process and staff inductions to sensitive issues) the most effective way for FMG to manage reputation risks? Will an FMG commitments register (including recording outcomes of consultations to date) and/or corporate sponsorship guidelines help manage stakeholders’ expectations? What conditions will be placed on site tours?
- How will intelligence on stakeholders be shared, stored and retrieved and how do various people’s responsibilities in this area relate?

8.5 *STAKEHOLDER ANALYSIS*

The plan should list all stakeholders and develop the objectives for each stakeholder grouping (as per section 8.2), then prioritise which grouping should receive most management attention and then (considering the ease with which these audiences can be reached and engaged) prioritise management/budget effort.

Consideration should be given to research of additional organisation / individuals and editing down of the existing list based on these objectives. Stakeholders may include:

- Local government entities (eg. shires, Pilbara Regional Council);
- State government entities (eg. Ministers, Dept of Community Development, Development Dept of Health, emergency services, Port Hedland Port Authority, Dept of Indigenous Affairs, Office of Aboriginal Economic, Dept of Industry and Resources);
- Federal government entities (DoTARS, Environment Australia);
- Non government organisations (eg. Pilbara Area Consultative Committee has policies on FIFO, Conservation Council has policies on mining, WWF has an initiative to pursue 3rd party verification of sustainable mining operations; Oxfam Community Aid Abroad wants a mining complaints ombudsman; Mining Policy Institute, Friends of the Earth);
- Industry peak bodies in addition to local bodies (eg. Chamber of Minerals and Energy, Technology and Industry Advisory Council, Pastoralists and Graziers Association; CCI);
- Trades and Labour Council WA, unions;
- Mining industry analysts; and
- Federal Members.

8.6

INTEGRATED MARKETING COMMUNICATIONS

A comprehensively scoped stakeholder consultation program is inextricably linked to broader corporate communication objectives.

FMG should consider in the context of building long-term relationships with key stakeholders, just how synchronised is its management team's understanding of external perceptions of the company.

Corporate communications tend to be more efficient the fewer messages they aim to communicate. Ideally there is one big idea that an organisation wants to get across to corporate stakeholders that will help it to differentiate it from the competition. It is always possible to develop a hierarchy of key messages for the corporate entity or a specific consultation sub-project. Awareness and retention of key messages tends to increase with the frequency with which the audience is exposed to them. In practice, this means frequency needs to be balanced with the optimal breadth or 'reach' of stakeholders comprising the target audience.

Consistency of application of 'brand' messages is the key to achieving communication objectives and this relates to the broadest range of communication activities including: personal meetings (golf or an elevator!), group meetings, trade shows, physical appearance of workers/office, advertising, sponsorships, publicity, and investor briefings.

Explicitly considering company and brand values as a management team appears to be a significant opportunity to advance the aims of the Draft Scope through more consistent application of key communication messages.

The set of communication techniques employed should be adapted to the preferences of the most important audiences which in this case, may include: a 'Freecall' complaints number, an after hours contact number, web site/email/sms bulletins, large print brochures, and the extensive use of maps and photography.

Annex A

Example Format of a Significance Matrix

Project Phase	Predicted Impact	Location of Impact	Potential Consequence/s of Impact	Significance Factors					Overall Significance and + or -
	Reduced social amenity and public health resulting from noise and dust	Port Hedland community	Community concerns and complaints about operations	NS	S	S	S	S	-S
			Negative perceptions of FMG reputation	NS	NA	S	NA	S	-S
			Enhanced public concern about public health impacts of dust	NS	NA	S	NA	NA	-S
	Payment of royalties to Port Authority	Western Australia	Reduction of State borrowing	NS	S	NS	NA	NS	+NS
	Reduced social amenity associated with noise, vibration and dust from rail operations	Communities adjacent to the railway line in Port Hedland	Community concerns and complaints about operations	NS	S	S	S	S	-S
	Increased potential for impacts on public safety due to operation of rail line	Communities adjacent to the railway line in Port Hedland/Wedgefield	Negative perceptions of FMG	NS	S	S	S	S	-S
	Clearing and general operations reduce area available for other uses	Pastoral lease and indigenous people's land	Potential concern and/or stakeholder criticism of project	NS	S	S	S	S	-S
	Additional power plant required at Newman and extra capacity at Port Hedland	Newman and Port Hedland	Increased infrastructure costs associated with power supply	S	S	S	S	S	-S
	Greenhouse gas regulations	Western Australia	Commercial penalties to project/economy	NS	S	NS	NA	NS	-NS
	Water allocations	Pastoral leases	FMG reputation damage and increased regulator/NGO scrutiny	S	NS	S	S	NS	-S