CUMMINGS ECONOMICS

MINING & INDUSTRIAL SERVICES OPPORTUNITY STUDY

Cairns/Far North Queensland

Ref: J2070
June 2008

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SUMMARY OF MAIN POINTS

Introduction

- The purpose of the study was to:
  - Identify opportunities for the provision of services from the Cairns/Tablelands/Cassowary Coast area (especially by air) to mining and industrial projects throughout northern Australia and adjacent areas to the north.
  - Identify opportunities to expand the range of aviation services to mining and industrial projects throughout this wider area.
  - Develop strategies/action plans to capitalize on these opportunities.

Identification of Projects

- Mining and industrial projects have been grouped in nine different areas:
  1) Cairns area.
  2) Peninsula.
  3) North West Queensland.
  4) Townsville/Charters Towers.
  5) Mackay.
  6) Northern Territory.
  7) Western Australia.
  8) Papua New Guinea.
  9) Eastern Indonesia.
- Projects have been classified as operating, under construction, advanced, and exploratory.
- Depth of identification of projects has been varied with exploratory projects identified intensively in Queensland and Northern Territory ranging through only currently operating projects being identified in Western Australia.
- Almost 500 projects have been identified and listed in a data base provided separately that where possible, includes further information about the projects including contacts, locations, current transport arrangements, employment and production.
- Maps show the location of projects identified in Queensland and the wider area of Northern Territory, Western Australia, Papua New Guinea and Eastern Indonesia.

Factors Affecting Level and Types of Services

- There is a need to recognize the different types of workforce needed for mines – operations, construction, maintenance and specialist service personnel and ranging from trades people, plant operators, supervisory and training staff, office staff and professionals.
- There is also a need to recognize the range of suppliers of personnel and services involved, many on a contract basis.

- Decision making about air services normally has three key parties - the mining/industrial company, aviation companies, and service providers including labour/personnel supply firms. However, the final arbiter is usually the mining/industrial company itself.

- Air services range from international, domestic and regional RPT services, to regular charters, to casual charters. A few companies have their own aircraft.

- Labour/personnel suppliers identified:
  - A need for upskilling of the region's workforce and specifically for the mining industry, including availability of courses/inductions. They also identified potential use of some areas, eg. the coalfields and Pilbara as upskilling areas with less stringent initial requirements.
  - A need to improve perceptions of the Cairns area as a supplier of mining industry workforce.
  - Opportunities to use Cairns' superior air links for those types of businesses supplying sporadic services (eg. maintenance, shutdowns).
  - Opportunities to use lifestyle and employment opportunities for partners to attract workforce.

- Mining companies Identified:
  - A need to differentiate strategy between professional, supervisor/training and trades/plant operator staff.
  - A need to expand workforce volumes available from the area if it is to be established as a 'point-of-hire' (PoH) for staff.
  - A need to improve 'mine readiness' of potential workers and the perception of Cairns as a volume source of suitable personnel.

- Aviation operators identified:
  - Cairns' superior flying distance to many mines compared with other major centres. (Mt Isa is as close to Cairns as Townsville, the Mackay coal fields closer to Cairns than Brisbane, the Kimberleys as close to Cairns as Perth, Papua Indonesia closer to Cairns than Jakarta.)
  - Cairns' superior air hub position both in terms of connectivity to the rest of the north, the rest of Australia and internationally, and the range and capacity of local aviation companies both able and willing to respond to new opportunities to provide services.

Existing Aviation Services to Mines & Workforce Involved

- A review of current extent of aviation services to mining operations indicated that Cairns has mining operation related air services to 18 different centres (Papua New Guinea and Papua Indonesia 6, Northern Territory 2, Far North Queensland 5, and North West Queensland 5) with an estimated seat capacity of approximately 4,000 a week (about 200,000 per annum), making it the leading centre in northern Australia for air services to mining operations (eg. Townsville was identified as having 9 centres connected involving about 3,400 weekly seat capacity). Maps in the report plot centres connected.

- Workforce flying into mining operations ex Cairns is estimated at about 2,100 composed as follows:

		Estimate
Estimated workforce flying into mines in the region		200
Estimated workforce flying in to mines outside the region		1,400
North West Queensland	970	
PNG and NT	460	
Estimated equivalent full time workforce for construction and maintenance operations at mines		500
Total		**2,100**

Analysis by Areas

Cairns Area

- Mining operations in the area have come off a low base but are expanding rapidly with new mines just on stream or under construction at Wolfram Camp and Chillagoe and a further 4 substantial new mines in an advanced state of planning. A great deal of exploration activity is taking place.

  Apart from engaging with companies in relation to new 'fly-in' operations, there is a need to attend to infrastructure issues and possible new industrial opportunities.

Peninsula

- A further major expansion of bauxite operations is planned including Rio Tinto Weipa operations rising from 10 million tonnes a year a few years ago, to 18,000 tonnes currently, to 35,000 tonnes by 2015 (with a major new deep water port being established), a new mine being established by Chalco at Aurukun and Cape Alumina developing leases in the area.

  Further new kaolin mines are being looked at and exploration underway for geothermals and mineral sands.

  Issues include how local infrastructure will develop in the area and a need to establish working relations with existing and new operators.

North West Queensland

- There are 12 major existing mines in the area and a workforce of about 6,600.

  A further 11 advanced projects were identified involving about 1,900 extra jobs. Most are likely to be supplied by 'fly-in' workforce. A great deal of exploration activity is currently taking place.

  Air services involving 'fly-in' workforce out of the Cairns area have been expanding with connections to 5 different centres, with 2 new services coming on stream while this report was being finalised.

  Much of the new activity would be located in the Cloncurry area.

- Major competition to meet in 'fly-in' services is from Brisbane.

- There are substantial infrastructure issues, especially relating to power, water, and roads.

Townsville/Charters Towers

- Six existing operations were identified with a further 6 in an advanced state that would involve substantial additional workforce, putting pressure on Townsville's ability to meet increasing needs elsewhere in the north.

- Some $4 billion in infrastructure/industrial projects was identified.

Mackay Region

- Some 15 existing operations were identified involving a workforce of over 9,000 and 12 advanced projects identified along with further exploratory activity and $2bn of infrastructure/industrial projects.

- A number of the mines are residential. Substantial workforce comes from Mackay. 'Fly-in' workforce is mainly from Brisbane via Mackay airport and direct services ex Brisbane to Moranbah.

- Sheer volume of existing and potential demand, proximity to Cairns, and the potential to use the area as a stepping stone for gaining mine workforce experience make it a potential target for 'fly-in' operations from the Cairns area either direct, or via Townsville.

Northern Territory

- There are four sub areas of relevance – the three major mines in the eastern side (Gove, Groote and McArthur River), those around Darwin, those around Alice Springs and those in the central areas of Tennant Ck and Tanami Desert.

- Cairns has had traditional air links with the three eastern mines, but also has strong tourism and general traffic links with Alice Springs and Darwin. It is currently losing services to McArthur River, but regaining them to Groote.

  It should however, stay interested in McArthur River as current policy to source out of Darwin only may not be viable.

- The Cairns area is well placed to provide workforce to Alice Springs area if major mining development takes place and to meet any shortfall in supply to growing on-shore and off-shore operations in the Darwin area.

Western Australia

- The demand for 'fly-in' mining workforce is massive in the Pilbara area. The area is also a potential training stepping stone. It has already drawn sporadic 'fly-in' workforce from Cairns, especially for maintenance/construction work and there are a few large operators who could be targeted.

Papua New Guinea

- Six major operating mines were identified and two oil and gas groups, Oilsearch/Exxon and Interoil.

- There are already direct services ex Cairns to four operations in the area – Oktedi, Porgera, Moro and Lihir, and some new services to Hidden Valley near Wau. Part of the traffic on Port Moresby flights will be mine related.

- 'Fly-in' workforce is mainly at a supervisor/trainer level and higher, and substantial part of the traffic is R&R, business and connector traffic as opposed to 'fly-in' workforce.

- Apart from new mines coming on stream over the next five years, there will be a massive requirement for workforce that cannot be met from PNG sources for the construction of two major LNG plants near Port Moresby.

  The Cairns region is in an ideal position to be a major source of workforce supply with potential need for a major increase in airline capacity on Port Moresby flights. It is also in a position to become a training centre for upgrading the PNG national workforce.

Eastern Indonesia

- Some 11 mining operations in Eastern Indonesia have been identified. The major mining operation of Freeport Indonesia has its Australian buying base in Cairns shipping $300m of goods a year on a 10-day shipping cycle through Cairns seaport and has weekly flights into Cairns. Both the shipping and air services are restricted to carrying the companies own goods and traffic.

  Air traffic is all R&R, business and connector, with no 'fly-in' workforce supplied ex Cairns.

- A major issue in this area is how to organize services into other mines.

Strategy Development

Future Workforce Demand & Cairns' Position

Current and additional estimated mining company workforce needed in Queensland from the Mackay region north is as follows.

	Estimated Existing	Estimated Additional	Estimated % Increase
Cairns/Tablelands	700	600	86%
Peninsula	900	1,000	111%
North West	6,600	2,000 *	30%
Townsville/Charters Towers	1,200	500 *	42%
Mackay	9,000	2,600 (1)	30%
Total	**18,400**	**6,700 * (1)**	**36%**

- Includes some uranium projects dependent on approval of additional uranium mining.

(1) Note: Estimates of additional mining activity in the Mackay area are growing by the month and actual expansion seems likely to far exceed this figure.

- The two major LNG projects near Port Moresby alone are talking about an expatriate construction workforce need peaking towards 10,000.

- Major workforce expansion is likely in the Northern Territory and Western Australia and mining in Eastern Indonesia is likely to increase.

- Expanding workforce needs is likely to be increasingly met on a 'fly-in' basis with a preference for larger, more comfortable, aircraft.

- Mining industries employment in the region is expanding.

  Current employment of about 3,500 (1,600 within the region and 1,900 'fly-in' to centres outside the region) is likely to expand strongly. Expected expansion of mining within the region on a 5-year time frame would take this to 5,100. Expansion of 'fly-in' activity to projects outside the region could take this to over 8,000, especially if Cairns developed as a major source of workforce for the major LNG projects near Port Moresby.

- There are good reasons for the Cairns/Tablelands/Cassowary Coast area pursuing an expansion of this type of employment activity.

  It can pursue this type of employment opportunity:

  1) Because of the size of its population and workforce, and its desirability as a place to live in the context of northern Australia.
  2) Because of its strategic position and airport hub role.

  It should pursue it:

  1) As an opportunity to continue the diversification of the regional economy.
  2) Especially over the next few years, at a time when there are negative pressures on tourism and local construction activity.

Supply Side Training Issues

- If the region is to expand its role in this field, substantial urgent development of workforce will need to take place involving local private enterprise training firms, TAFE, James Cook University and mining workforce training organisations at State and national levels.

Marketing

- Realising the opportunity will need a substantial marketing effort:
  - To the relevant mining and industrial organizations in a Primary Area of Engagement within Queensland, Papua New Guinea and eastern Northern Territory, and
  - less intensively in a Secondary Area of Engagement further afield in the rest of the Northern Territory, Western Australia and Eastern Indonesia.

- Other marketing activity needs to include:
  - Marketing within the local community.
  - Attracting suitable workforce to the region.
  - Attraction of more mining corporate offices to the area on top of the seven existing offices.

Potential Air Services

- The region's aviation operators will need to be key partners. The study found them both willing and able to respond.

- Prospective additional or increased services include charter services to new mines in the Cairns hinterland, expansion of services into the Peninsula, especially to Weipa, services to additional existing and new mines in the North West Queensland and to mines in the eastern Northern Territory area, development of services into the Mackay region, exploitation of opportunities as they occur into the secondary area of engagement in the Northern Territory, Western Australia and Indonesia, mainly for indirect services via other centres.

Action Plan

- Action plan needs to include:
  - A policy decision by the Cairns Chamber of Commerce representing the region's business community and the State Government to recognize the opportunity and pursue a program to expand the area's capabilities.
  - For the Chamber to expand its organizational capacity and funding by continuing its existing taskforce, seeking funds to expand staff capacity, urgently reacting to the special needs of workforce for the LNG projects in PNG, and the need to pursue infrastructure needs and new industrial development opportunities.
  - The Chamber continuing to pursue its existing program of marketing to mining companies (including engagement with key staff by inviting them to Cairns for special events like the Amateurs), promoting Cairns as a source of workforce at industry trade shows and conferences, producing marketing material, working with media, and working on critical relations with other Queensland regions and other relevant State and national governments.
  - Undertaking a program of 'supply side' development and training by engaging with relevant public and private education and training providers, marketing the opportunity within the community, attracting suitable workforce to Cairns and attracting additional mining corporate offices.
  - Liaising with aviation companies to develop additional air services.
  - Attending to infrastructure needs and industrial development opportunities.

1. INTRODUCTION

1.1 GENERAL

Cummings Economics was retained by the *Department of Tourism, Industry and Regional Development* (DTRDI), in liaison with the *Cairns Chamber of Commerce Resources & Industry Taskforce* to carry out a study of opportunities for the provision of services (especially by air), to mining and industrial projects, by businesses located in Cairns and surrounding districts.

The objective of the study was to gather and analyse data to:

- Identify opportunities to expand the range of regional aviation services provided to the domestic and international resources and industrial sector by Far North Queensland, and

- Develop strategies to capitalize on these opportunities.

The tasks to be carried out were set out as follows:

Develop a database of resource and industrial projects currently operating and proposed in Northern Queensland, the Northern Territory, and Papua New Guinea, through desktop research and surveying of companies.

Identify the opportunities for increasing regional aviation services to these projects.

Prepare an action plan to capitalize on these opportunities and to promote regional aviation services to identified resource and industrial projects. The action plan will include activities such as:

a) Attendance of the Cairns Chamber of Commerce at mining industry events including the Mt Isa Mining Expo, May 2008, and

b) Suggested marketing collateral for the promotion of Far North Queensland services and products that will use and support Far North Queensland regional aviation services.

1.2 STUDY AREA

After consultation with the study's Steering Committee, it was decided to include in the study, projects in the area:

- Queensland from Mackay region northwards.
- Northern Territory (NT) and Western Australia (WA), north of the Tropic, ie. the Pilbara and Kimberley regions.
- Papua New Guinea (PNG).
- Eastern Indonesia, especially Papua Indonesia.

For study purposes, the Queensland area was broken into five different areas:

- The immediate Cairns region out to Croydon and north to Cooktown.
- The Peninsula area.
- North West Queensland.
- The Townsville/Charters Towers area.
- The Mackay region.

1.3 METHODOLOGY

The study was broken into a number of phases.

Phase 1 - Desk Work & Supplementary Information Gathering

Identification of Mines and Projects

Major sources of information were:

a) Register of Australian Mining, 2007/08.
b) Websites Queensland Mines, NT Mines, WA Mines, PNG Chamber of Mines.
c) Various other individual websites.
d) North Queensland Mining Advocate and other media.

Collection of information about labour/personnel supply firms in the Cairns area and those outside the area relevant to supply to mines/projects in the study area.

Collection of information about aviation firms and operations based in Cairns or otherwise relevant to the study.

Collection of information about other interested parties.

Phase 2 – Mail out and follow up interviewing of labour personnel supply firms and aviation firms. (Contact letter is given in Appendix 1).

After this phase, an interim report was delivered to and discussed with the Steering Committee.

Phase 3 – Contact with and interviewing of selected mining and other operations.

Phase 4 – Finalization of data bases, maps and report writing.

In practice, as a lead up to and in the process of this study, a great number of formal interviews were conducted face-to-face (about 20) and over the telephone (about 60). In addition, hundreds of telephone calls were made and website searches undertaken to obtain basic information about companies and operations.

1.4 INFORMATION RELIABILITY

Information in this report was collected over the first half of 2008. The sector is changing very rapidly. Where more recent information up to end June 2008 has come to our attention, it has been included. However, there are likely to be sections where conditions have changed and the report is now out of date.

While care has been taken in obtaining information, much has been obtained from single source interviews, media reports and publications, often not able to be cross referenced. At times, figures given are estimates only.

It is advised that before information is relied upon for decisions, it should be further verified and cross checked.

2. IDENTIFICATION OF MINING & INDUSTRIAL OPERATIONS IN THE STUDY AREA

2.1 GENERAL

In practice, the intensity of identification of projects in the different areas has varied depending mainly on distance from Cairns.

In the northern Queensland area, identification has included existing mining operations, advanced projects, and exploratory activity taking place.

In the Northern Territory, the study has identified existing mines, major prospects and exploration as listed by the NT Mines.

In Papua New Guinea, the study has also included existing mines and major prospects as listed by the PNG Chamber of Mines.

In Western Australia and Eastern Indonesia, the study has been limited to existing mines or, in the case of Indonesia, projects under development.

Industrial Projects have not been included in the Cairns and Peninsula areas. They have been heavily included in the rest of Queensland and in a limited way in Papua New Guinea and Northern Territory.

2.2 DATA BASE

The detailed data base developed is provided as a separate document.

The data base is set up in 9 separate areas:

1. Cairns Area.
2. Peninsula.
3. North West Queensland.
4. Townsville, Charters Towers.
5. Mackay Region.
6. Northern Territory.
7. Western Australia.
8. Papua New Guinea.
9. Eastern Indonesia.

Stage of mine development is identified as:

1. O Operating.
2. A Advanced Project.
3. E Exploratory.
4. UC Industrial Project - Under Construction.
5. A Industrial Project – Advanced State.
6. E Industrial project – Under Consideration.
7. C Mine - Recently Closed.

The data base also gives, where possible, details of company contacts, minerals involved, more detailed locations, latitude and longitude where possible for operating mines, information about workforce and production, whether open cut or underground, and relevant transport arrangements.

2.3 SUMMARY OF DATA BASE

The following table summarises the data base.

Number of Listings [(1)] of Identified Operations

	Mines				
Area	**Operating**	**Advanced**	**Exploratory**	**Industrial**	**Total Listings**
Cairns Area	12	9	52	N/A	73
Peninsula	3	3	3	N/A	9
North West	17	11	76	1	105
Tvl/Charters Towers	13	8	34	20	75
Mackay Region	15	12	8	21	56
NT	20	9	44	0	73
WA	37	N/A	N/A	N/A	37
PNG	12	10	5	5	32
Eastern Indonesia	6	2	1	2	11
Total	**135**	**64**	**223**	**49**	**471**

(1) Note: This list is of entries of identified operations. It should be noted that industrial projects have only been extensively identified in the Mackay, Townsville/Charters Towers and North West Queensland area, and exploratory activity only extensively identified in the Queensland areas and to a lesser extent, in the Northern Territory.

Almost 500 projects have been identified and listed.

For operating mining projects, the largest number were in Western Australia and the Mackay region.

The Mackay region also figures heavily in advanced mining projects. (Advanced projects in Western Australia were not identified.)

While the Cairns and Peninsula regions have limited number of existing and advanced projects, heavy exploratory activity has been identified approaching that of the North West Queensland region.

2.4 MAPS

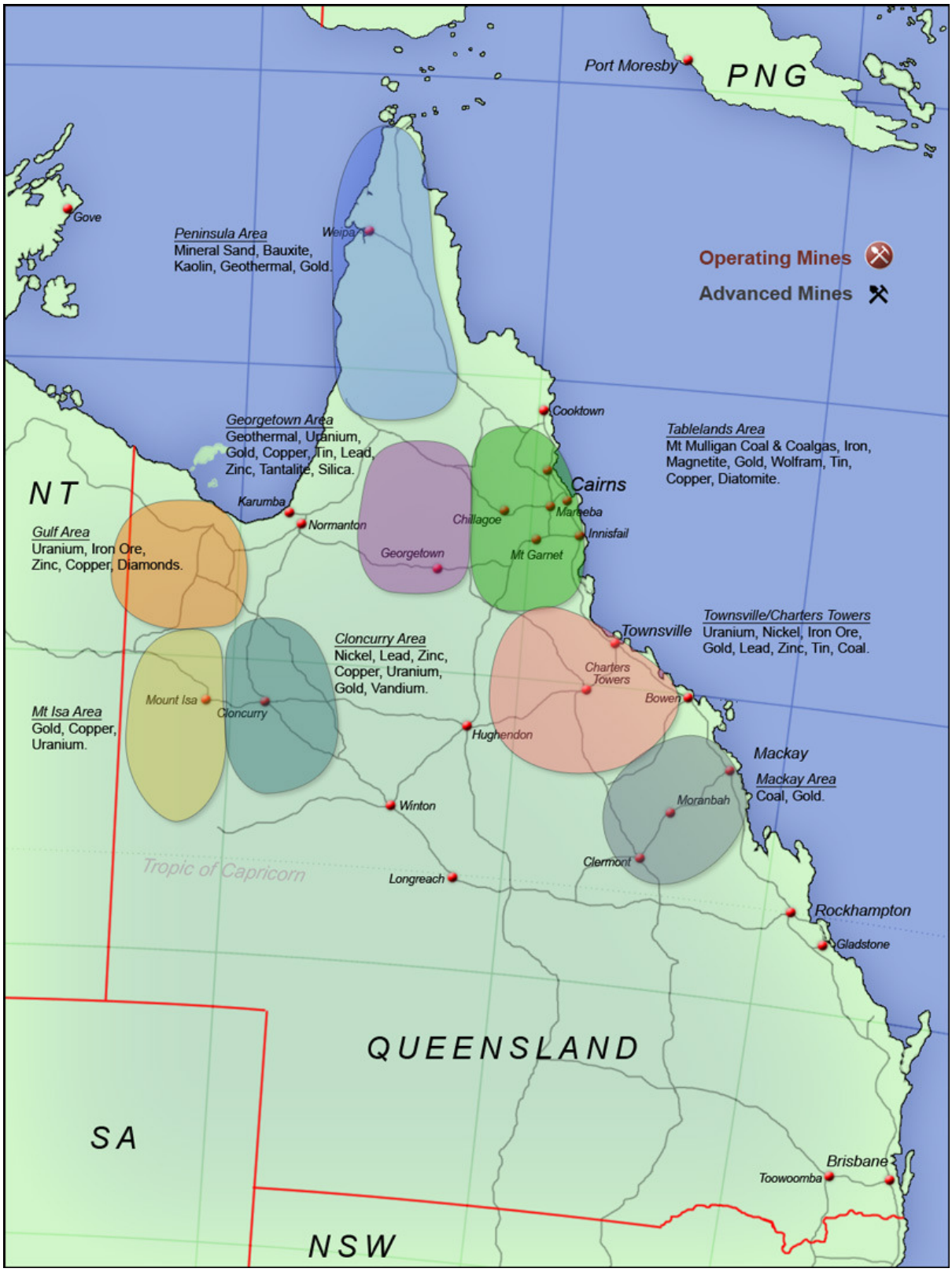
The following pages gives Maps (prepared for other uses), identifying approximate location of identified mines and industrial projects listed as follows:

		Page
1	Operating mines identified, Queensland.	9
2	Advanced mines identified, Queensland.	10
3	Mining exploration identified, Queensland.	11
4	Industrial projects identified, Queensland.	12
5	Mining and Industrial operations identified, outside of Queensland.	13
6	Lines of Equal Flying Distance.	23
7	Mining Related Air Services, Queensland Areas.	29
8	Mining Related & Other Relevant Air Services, Interstate & Overseas.	30
9	Marketing Primary and Secondary Engagement Zones	70

Map 1 – Operating Mine Locations, Queensland

Map 2 – Advanced Mine Locations, Queensland

Map 3 – Mine Exploration Locations, Queensland



Map 4 – Industrial Project Locations, Queensland

Map 5 – Mine Operation Locations, Outside of Queensland

3. OBSERVATIONS ON FACTORS AFFECTING LEVEL & TYPE OF SERVICES TO MINES

3.1 TYPES OF SERVICES & SERVICE PROVIDERS

The services supplied to mines tend to fall into a number of categories with a different range of service providers involved:

Activity

1. Labour/Personnel supply for mining operations including ancillary processing and operations.
2. Construction workforce.
3. Maintenance contract work including shut-down maintenance.
4. Specialist service personnel movements including repairs and services to equipment, business services and the like.

The labour/personnel supply for mining operations can be broken into a number of categories:

1) Tradesmen, plant operators, etc.
2) Supervisory and training staff.
3) Office staff.
4) Professional staff including managers, accountants, geologists, engineers.

As is commented upon in the following sections, the different mining operations serviced or potentially serviced out of Cairns, vary in their requirements for different types of labour/personnel.

It should also be noted that, apart from 'fly-in' of workforce, air services to/from some mining operations are heavily involved in providing opportunities for persons and families living in remote mining areas to access Cairns for R&R and other purposes. Again, this varies with the type and situation of the mine.

Services supplied to major mining related industrial projects tends to relate to construction where there tends to be a similar hierarchy of labour/personnel needs:

1) Non-skilled.
2) Skilled workforce.
3) Supervisors/Trainers.
4) Management including professional and office staff.

In most cases, on-going staff requirements tend to be supplied locally. One exception to this however, is the Century Zinc dewatering and port operations at Karumba where personnel are believed to partially fly-in from Cairns.

Type of Supplier for Above Activity

There are a range of suppliers for the above.

1) Some mines recruit directly but many use labour/personnel supply firms who supply direct to mining companies and to major sub contractors including:
    i) Mining contractors.
    ii) Catering contractors.
    iii) Health services contractors.
2) Civil, structural, electrical and other engineering contractors.
3) Mainly structural engineers including specialists, eg. Relining.
4) Numerous types of service and repair providers including:
    i) Heavy machinery, vehicles, electrical, office equipment, telecommunications, catering equipment.
    ii) Business services, finance, insurance, valuers, unions, etc.
    iii) Health, training and safety services.

Implications of the foregoing for a strategy include:

a) There is a need to recognise that there is a range of 'players'/stakeholders involved in the provision of 'fly-in' services.

b) That the 'fly-in' requirements of different mines and mines in different areas vary considerably and that labour/personnel requirements for construction, although similar, vary from those of on-going mining operations.

3.2 DECISION MAKING ABOUT AIR SERVICES

Organisation of services provision by air normally involves three key parties:

a) The mining/industrial company.

b) Aviation companies.

c) The service providers/including personnel labour supply firms.

By and large, the final arbiter is the mining/industrial company who will seek tenders from aviation companies for the supply of air services on a regular basis. Where public RPT services are available, the arbiter is the aviation operator who will assess likely market demand, although special arrangements between major mining companies and airlines can be important.

In practice, use of fly-in services varies substantially over the study area.

There are four types of aviation services relevant to 'fly-in' services for mining/industrial project work:

1) Major airline domestic and international RPT services – usually aircraft of 100 pax capacity plus (eg. Qantas Link, Air Niugini, Airlines PNG).
2) Regional airline RPT services - usually 50 – 100 seats, (eg. Airlines PNG, MacAir, Regional Pacific).
3) Regular scheduled charter flights (eg. Alliance (ex Tvl), MacAir, Skytrans, Regional Pacific, Airlines PNG, National Jet).
4) Ad hoc smaller charters to smaller nearby mines.

There are a number of key factors driving decision making about whether a particular mine/project will use 'fly-in' services.

a) The size and expected life of the mining operation.

   Small operations may not have sufficient scale to support 'fly-in' services. On the other hand, large long-life projects (eg. Freeport Indonesia, Mt Isa, Weipa, and Gove) can opt for having permanent on-site workforce, infrastructure, and families.

b) Distance from existing service centres.

   Obviously, mines remote from district service centres will tend towards direct 'fly-in' from major service centres. Remoteness can be a factor of the level of ground transport infrastructure between the mine/project and a service centre. In places like Papua New Guinea and Papua Indonesia, safety conditions on the access road to a mine can be a factor.

c) Existing RPT services to nearby airports/airstrips.

   If a mine is close to an existing serviced airport, it will tend to use existing/expanded services to that airport. At times, there will be a balancing of cost considerations – the cost of building and operating an airstrip at the mine against the cost of upgrading road access to a nearby airport and the travel time penalties of workers travelling from the existing airport to the mine.

Our enquiries indicate that the general trend has been towards 'fly-in' services. 'Fly-in' services offer the following major advantages:

a. Avoidance of major infrastructure costs to cater for worker families.
b. Attraction of better quality, more skilled workforce.

The labour market situation in Australia at present is so buoyant that many mines are finding it difficult to attract labour to live in difficult and remote areas and are finding they are having to resort more and more to 'fly-in' activities. This includes some large long established mines.

A number of other trends are evident.

a) Better aircraft are making 'fly-in' services relatively less costly and safer with shorter travel times.

b) Workforce is looking for larger more comfortable pressurised aircraft.

c) Improvements in local road infrastructure is increasing the possibility of using local hub airports for mines in close proximity.

d) There was evidence of a trend towards operations where a central processing facility is established with ore being trucked in from a number of surrounding smaller deposits.

Implications of the foregoing for a strategy include:

a) Recognition of the key decision making role of selected key management personnel in the mining/industrial operations themselves about whether to use 'fly-in' services, extent of use and where to fly from and establish 'Points of Hire'.

b) Recognition of the range of mining/industrial projects and their need for 'fly-in' services.

c) Recognition of a possible variety of types of air services including trends to use larger more comfortable aircraft.

d) That the general trend has been towards more, rather than less, 'fly-in' services

3.3 LABOUR/PERSONNEL SUPPLIER CONSIDERATIONS

There is a great deal of competition in the business. There are strong players in Cairns, Townsville and Brisbane that have been traditional suppliers who have strongly entrenched links with mining companies. There were some indications that some new players in those centres were finding it difficult to break in.

Recruiters agree there is a shortage but mines are not desperate.

Most mines want qualified and experienced staff, not 'green' staff or 'clean skins'.

It was recommended by some suppliers that new entrants start in WA, or NT, where standards are not as strict, before progressing to Qld, or starting in the coal fields (which are expanding quicker and have a high turnover in open cut operations), before progressing to other mines.

Underground mines get higher pay for some operations, but are required to be highly skilled/experienced.

Best money is in PNG. However, there are safety factors in those countries. Indonesia's 'travel advisories' are 'a worry' and foreigners are required to have permits and report in when they arrive in a locality.

Mines in north west Queensland have traditional 'fly-in' links with Townsville but are having to go further afield to access 'experienced' staff and are willing to pay for 'experienced' staff including costs of flights from Brisbane, Melbourne, Perth, etc., especially for professional/supervisory level staff.

The Cairns area has not been seen as a strong recruitment area. There is a perception among some that Cairns' workers have no heavy industry experience and that experience in relevant trades (eg. diesel fitters) is in fields like fishing and agricultural machinery and not mining.

The recruiting firms tend to advertise heavily on the internet, particularly "Seek", but also "Career One", "My Career" and "Info Mine".

There is a public perception that mines will take anybody. In fact, workers need to obtain as much experience in mining or a similar heavy industry, and as many tickets as possible to get in the door, eg. General Mining, Induction, Metalliferous, Confined Space, Working at Heights, Heavy Machinery, Tickets in First Aid (Senior). Most mentioned training provider was Krause Safety Training in Townsville. The other is Axial. The need for training facilities in Cairns was raised.

To be work ready, besides having relevant inductions, training and experience, workers can increase their marketability by having current medicals. There are some medical centres in Cairns that offer specific mine medicals, usually for four years and paid by the company. Recruitment training companies ask workers to pay for medicals, but they usually only last for two years. Drug and alcohol testing is often done immediately prior to flight by labour recruiters or at site by mine.

Mt Isa Chamber of Commerce is reported to be working on air service problems, ie. capacity constraints. It was mentioned that some staff are going to Mt Isa from Cairns via Brisbane at twice the cost because mines need them now and can't wait for staff to come on flights direct from Cairns.

Overall, it appears that a substantial part of the recruiting of labour and personnel from the Cairns area takes place by personnel supply firms based outside of Cairns.

The demand is such that personnel companies are being forced to look further and further afield, especially for professional and qualified staff. It was identified that of workers in one mine in PNG, only a few were from the Cairns area and the great bulk were from elsewhere in Australia and only transited in Cairns.

In the category of shut down maintenance type suppliers, Cairns has been positioning itself well, especially through Dawson Engineering and Pacific Relines. Pacific Relines have their own aircraft based in Cairns. A Perth based company who are in this business have also moved into Cairns recently. Apart from lifestyle advantages, for these types of suppliers, Cairns' superior airlinks are important, enabling them to more easily service mines right across the north and into PNG than from other centres.

As a location for 'fly-in' mine workers, Cairns is seen to have advantages in attracting workers in this field (who are mainly but not totally males) to locate in the area which include:

a) Lifestyle/Safety.

b) A good environment and education facilities for families.

c) Extensive local availability of full-time jobs for females and part-time jobs in industries like tourism, retailing, business offices, and health services, etc.

Implications of the foregoing for a strategy include:

a) A need for up-skilling/training of the region's workforce specifically for the mining industry, including:

i. A need for availability of specialised short-term courses/inductions for locals who wish to enter in to mining work.

ii. Recognition of an opportunity to target different areas, eg. (WA, NT, coalfields) to provide up-skilling opportunities.

b) A need to improve perceptions in the mining industry about what workforce and services are potentially available out of the Cairns area.

c) An opportunity to use Cairns' superior air links position for those types of businesses that supply sporadic services to individual mines (eg. maintenance, shut downs).

d) An opportunity to sell the area's lifestyle/safety and job availability for partners to encourage workers seeking these types of jobs to locate in Cairns.

e) Recognition of an opportunity to attract R&R type traffic on flights established mainly to service 'fly-in' workforce.

3.4 MINING COMPANY CONSIDERATIONS

Varying Skill Requirements & Volume Requirements

Mines need to juggle differing levels of skill requirements and volumes of personnel needed to economically fill aircraft from designated points of hire (POH).

In the first place, operating and advanced planning stage mines are finding that for professional, supervisory and specialized staff they are needing to look further afield. This level of staff tend to be flown in from all capital cities in southern Australia and at times, from overseas. Cairns is generally not seen as a major source of this type of staff.

If Cairns is going to position itself as a supplier of any significance in this type of field, a special different strategy will probably be needed.

In the past, for tradesmen/plant operators etc., mining companies have been able to source personnel from nearby major service centres, especially those with traditional mining/heavy industry backgrounds (eg. Townsville, Mt Isa) which have been traditional POH locations. (The mine is responsible for employee travel costs from the POH to the mine.)

However, they are finding a need to spread the net further and to use multiple POH's as a strategy to source experienced staff.

However, multiple POH's increases the complexity of human resource management and can result in charter flights not being filled to capacity. Charter flights can be utilized by both mine employees and contractor staff. Generally, mine employees and contractor staff are on different rosters, further complicating flight arrangements.

The majority of operating mines realize that the regional pool of available experienced labour is diminishing with many now actively sourcing labour from Brisbane and chartering larger aircraft from Brisbane than are currently servicing the Cairns POH.

The general perception is that all short-term labour requirements can be filled by throwing the net out wider and enticing the potential employee with an attractive package which would include salary, rosters, mine camp conditions and nearby POH.

However, as discussed in a later Section 5.1, there is every indication that the labour availability situation is going to get even tighter over the next few years.

The mining industry across Australia is aware of the shortage of experienced labour and Federal and State governments in conjunction with industry have developed initiatives to address the looming shortage. Should this resource boom continue past 2008, the volume of new mines progressing to construction and operation will result in workforce limitations causing an artificial ceiling on both the size and number of operating mines. Regardless of how wide the net is thrown in Australia or how attractive the salary package, the labour will not be available. Operating mines are yet to feel the full brunt of the resource boom on workforce availability.

To Charter or Block Book or Share a Charter

A mine company chartering their own plane has the benefit of maximum flexibility with regards to staff movements and rosters. The addition of another Point of Hire can result in empty seats on the new POH or empty seats from existing POHs.

In some locations, no RPT service is available and consequently block booking is not an option.

Some mining companies have indicated their willingness to share either:

- a charter direct to a central airstrip.
- a charter that services multiple mine sites.
- a charter that would allow a mine to drive to another mine's airstrip to pick up employees.

If an RPT could not be developed allowing mines to block book, sharing a charter can be an option

Fatigue and Safety Record

Mines and their contractors need employees to arrive work ready to start their shift. In some mines employees arrive the night before their shift or have 12 hours rest before the start of a shift. However in many situations employees start their shift after arriving at the mine site. The issue of work readiness is dependent on how the employee has coped with the travel to the Point of Hire and between the POH and the mine site. Travel time, mode (whether air direct to mine or combination of road, air and road) and level of comfort can be critical to work readiness and safety. Travel time, mode and comfort is determined by the proximity of the mine to POH, road conditions, proximity and certification of the nearest airstrip and cost of 'fly-in'. Increasingly in a tight labour market experienced labour is taking into consideration travel time and comfort when choosing a mine.

Rosters

Rostered time on and off can vary between mines, between contractors and the mining companies on the same mine site and between different trades on the same mine site. More favourable rosters are increasingly being used as a tool to attract experienced staff. Many mines are opting for even time rosters (7 days on 7 days off) for direct mine employees whilst contractor labour is more commonly a 14/7 roster. Another common roster is 8/6.

The problem arising from the increasing prevalence of the 7/7 roster is that it exacerbates the labour shortage. Experienced crew are effectively only working half the year necessitating the employment of another experienced crew.

Ability to Retain Staff and Maintain a Stable Workforce

To recruit and train new staff can range in cost from $5 000 to $50 000 per employee. With a diminishing pool of experienced labour, mines are keen to keep experienced staff and to train less experienced staff for supervisory roles.

Mines are very clear – the mining life is not for everyone. Staff need to be able to cope with a mine site workplace – isolation, dust, dirt and long hours. Staff are also selected for their ability to work as a team and to be safety conscious. The personal characteristics of a mine employee are just as important as their qualifications.

Some mines that are experiencing high turnover are actively recruiting non traditional sources of labour such as women.

A stable reliable workforce in an isolated site is easier to manage particularly in a 'fly-in' operation. If an unreliable employee does not turn up for their flight, the next charter flight may not be until next week and commercial flights are not available into some locations.

Perceptions of Cairns

Cairns has been a regular POH for some mines for a considerable period of time and some are re-establishing links with Cairns. However, the bulk of operating mines and advanced projects do not consider the Cairns region to have mining "type" staff. The Cairns region is not viewed as having any significant heavy industry other than sugar mills. Farming experience is not highly regarded as transferable skill to the mining industry.

Mines are looking for the skill set (the full range of mining skills from a POH). Mines also require volume of workers. Both are perceived not to be on offer in Cairns.

In addition, the majority of mines have a perception that any 'green labour' interested in joining the mining industry would be sourced from the tourist industry and therefore not suitable for mining work.

Training

As the labour pool diminishes, mines indicated that they would look favourably at an inexperienced individual who had taken the initiative to seek training.

However, most mines state they would still conduct their own mining inductions regardless of any prior mining induction qualifications. The exception being if the Registered Training Organisation is accepted by the mining company as providing quality mining inductions and training.

Courses such as "Working in Confined Space", "Working at Heights", "Heavy Machinery Tickets" and "Senior First Aid" were looked on favourably.

Implications of the foregoing for a strategy include:

a) *There needs to be a differentiation between strategy for professional supervisory and training staff from tradesmen/plant operators, etc.*

b) *An expansion of availability (volumes and skill sets) of personnel out of Cairns will help generate volumes to compete as a POH and viability of direct flights using larger aircraft in competition with other sources, especially Brisbane.*

c) *Responses from the mines reinforce the need for action to improve 'mine readiness' of potential workers from the area.*

d) *There is a need for Cairns to improve its perception as a suitable volume source of labour/personnel for mining operations.*

3.5 AVIATION FACTORS

Flying Distance Factors

Cairns' location gives it, at times, unrecognised flying distance advantages.

The following map shows approximate lines of equal flying distance – Cairns/Townsville, Cairns/Brisbane, Cairns/Darwin, Cairns/Perth and Cairns/Jakarta.

It can be seen that Mt Isa is the same distance from Cairns as from Townsville. Mines north of Mt Isa are closer to Cairns.

All the north west mining province and central Queensland coal fields down to Clermont are closer to Cairns than to Brisbane. Longreach is closer to Cairns than to Brisbane.

Alice Springs is almost the same distance from Cairns as from Darwin. McArthur River is almost as close to Cairns as to Darwin.

Much of the Kimberleys area is marginally closer to Cairns than to Perth.

Almost all of Papua Indonesia is closer to Cairns than to Jakarta.

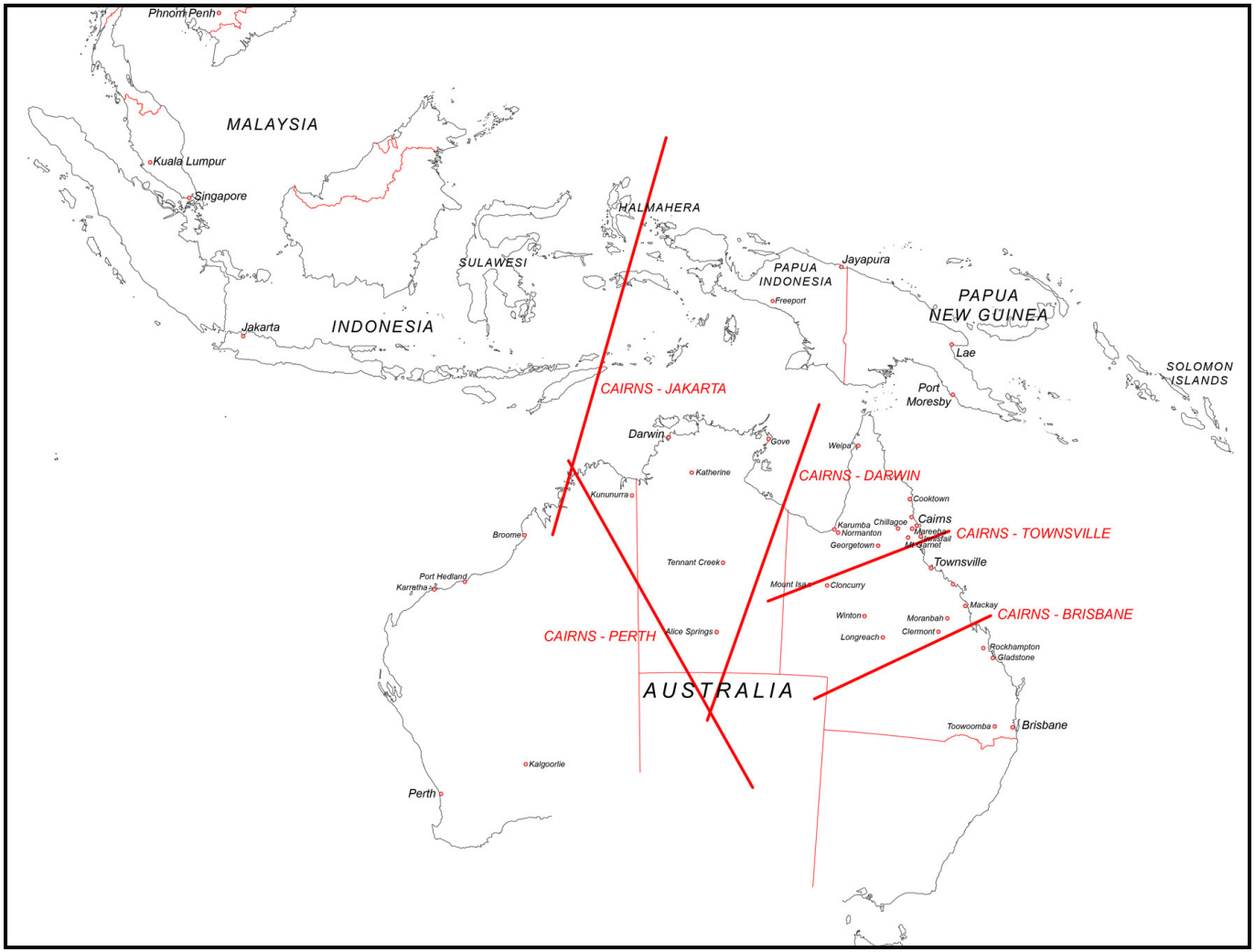
Aviation Capacity Factors

By and large, aviation capacity based at Cairns Airport is superior to any other centre in the north.

There is a suitable range of existing operators who are willing and able to respond to expanded mining industry service requirements across the study area, ranging across international, domestic, regional and smaller charter operations.

Cairns Airport also has the best connector RPT services of any centre in the north, both to centres within the north, and to the rest of Australia and overseas, making it an excellent POH at which workforce and personnel can be assembled not just form the immediate region, but from other parts of the north and other parts of Australia, and where applicable, from overseas.

Map 6 – Lines of Equal Flying Distance



Current Extent of 'Fly-In' Activity

The following gives census data for employment in mining by place of usual residence and place of employment for statistical divisions across the north.

Employment by Industry – Mining, 2006 Census			
	Place of Usual Residence	Place of Employment	Difference
Far North	1315	695	+620
North	2815	1277	+1538
Mackay	8478	8055	+423
Fitzroy	5898	5862	+36
North West	2885	4128	-1243
NT	1706	1930	-224
Kimberley	547	1041	-494
Pilbara	5748	8523	-2775
Source: ABS, 2006 Census data.			

The difference is an indication of the extent of 'fly-in' activity. It indicates that the Queensland coastal regions are major suppliers of 'fly-in' labour to mines.

It should be noted however, that the definition of mining used in this table, is fairly narrow.

For instance, Rio Tinto indicate that they employ over 700 at Weipa. The ABS data for Weipa however, records only 120 of its workforce being classified as mining. About 400 are classified in manufacturing.

Thus, the above tends to understate the employment by mining companies, especially where significant additional processing takes place, eg. at Weipa, Gove, Mt Isa, etc.

The following gives a summary of current air services ex Cairns to relevant mining centres and individual mines identified to date. Maps 7 and 8 illustrate. The following gives details.

Summary of Number of Mining Centres Linked by RPT & Charters to Mines ex Cairns & Townsville and Estimated One Way Per Week Seat Numbers

		One Way Seats Per Week	Total
Ex Cairns	**Overseas**		**679**
	▪ Lihir	72	
	▪ Port Moresby 800 (Part 20%) [1]	160 (est)	
	▪ Mt Hagen	87	
	▪ Moro	36	
	▪ Tabubil	108	
	▪ Timika	216	
	Northern Territory		**833**
	▪ Gove	805	
	▪ McArthur R	28	
	Queensland – Far North		**1,218**
	▪ Weipa	1008	
	▪ Skardon R	30 (est)	
	▪ Cape Flattery	80	
	▪ Chillagoe	20 (est)	
	▪ Karumba	80	
	Queensland – North West		**1,266**
	▪ Century	170	
	▪ Mt Gordon	50 (est)	
	▪ Mt Isa	746	
	▪ Cloncurry	280	
	▪ Mt Cuthbert	20 (est)	
Total 18			**3,996**
Ex Townsville	**Overseas**		**Nil**
	Northern Territory		**Nil**
	Queensland		
	▪ Century	500	
	▪ Mt Isa	1568	
	▪ Cloncurry	306	
	▪ Eloise	200	
	▪ Cannington	468	
	▪ Osborne	200	
	▪ Phosphate Hill	268	
	▪ Chillagoe	20 (est)	
	▪ Mt Gordon	50 (est)	
Total 8			**3,380**

[1] *Note: Much of the Port Moresby traffic out of Cairns would not be mining related but a significant amount would be. We have brought an estimated 20% to account.*

The above indicates that there are regular services to 18 mining centres out of Cairns and 9 out of Townsville and seat numbers are about 4,000 out of Cairns and about 3,400 out of Townsville.

However, it is likely that 'fly-in' workforce ex Townsville is higher.

A higher proportion of the traffic into Cairns would be other than 'fly-in' workforce including R&R, general business and joining other flights.

Workforce living in the Cairns/Tablelands/Cassowary Coast area involved in regular 'fly-in' to mining operations is estimated at about 3,400 as follows.

The following estimates are of current direct employment by:

a) mining companies in the region (including major contractors carrying out mining operations).

b) 'fly-in' personnel living in the region employed by mining companies (including major contractors carrying out mining operations).

c) construction and maintenance workforce living in the region, employed by non-mining companies, but flying in to various mines on short to medium-term construction and maintenance contracts.

There is some overlap between (a) and (b) above of workforce living in the Cairns/Tablelands/Cassowary Coast area and flying into more remote mines in the region (eg. Cape Flattery, Skardon River).

Employment in (c) above can be transitory and the following estimate is of equivalent full-time employment.

		Estimate
Estimated employment at mines in the region		1,600
Estimated workforce flying in to mines outside the region		1,400
North West Queensland	970	
PNG and NT	460	
Estimated equivalent full time workforce for construction and maintenance operations at mines		500
Total		**3,500**

It should be noted that this is direct employment at mine site and does not include off-site employment in providing a wide range of goods and services to mines.

Implications of the foregoing for a strategy include:

a) Cairns' existing role as an air services centre for mining operations is much larger than is generally recognised.

b) The Cairns area can use its flying time superiority to advantage in a number of areas.

c) The Cairns area can use its superiority as an aviation hub both in terms of local availability of aircraft capacity and wider connectivity to great advantage.

d) The aviation sector needs to be recruited as important partners in the strategy implementation.

3.6 SUMMARY OF CAIRNS' ADVANTAGES & DISADVANTAGES AS A PROVIDER

Cairns' advantages as a provider of 'fly-in' services appear to include:

a) Superior living conditions/lifestyle factors for workforce and their families.

b) Its dominant regional, national, and international air services hub position in northern Australia and adjacent Asia Pacific area.

c) Arising from (b), its superior back-up facilities for servicing aircraft and as an operational base for aviation companies.

d) The superior size and diversity of the business services the Cairns region offers.

e) Arising out of (a), (b) and (d), its increasing attractiveness as a base for mining services operators.

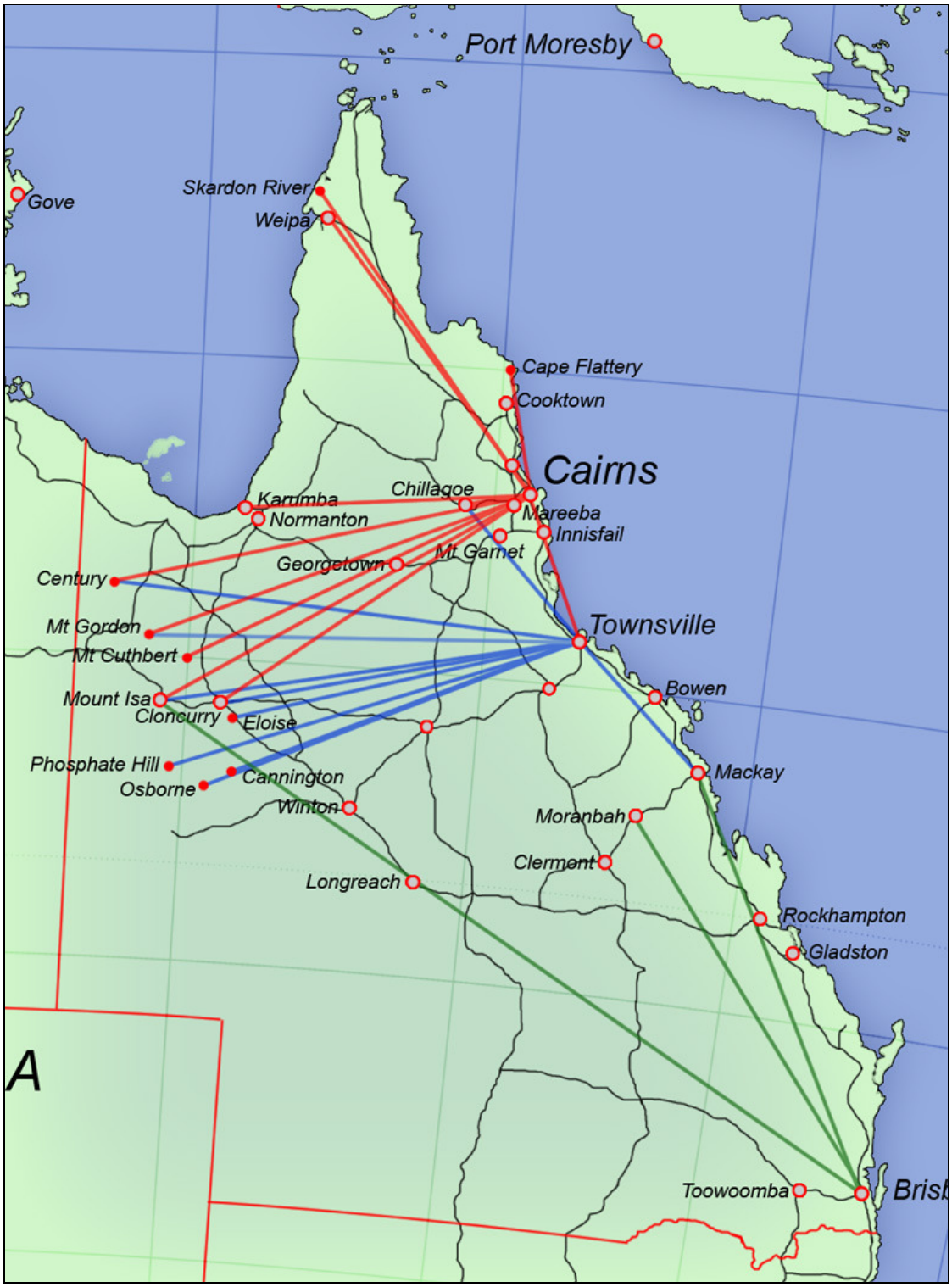
f) The size and diversity of its workforce including availability of jobs for partners in industries with high female employment opportunities.

Cairns' main disadvantage is that its immediate regional area is not as strong in mining activity as some others, although this turns into an advantage of less strains of past strong demand from the mining sector on its workforce. However, as is commented upon further in this report, the past history of lower mining activity leads to a perception problem of the workforce potentially available from the area.

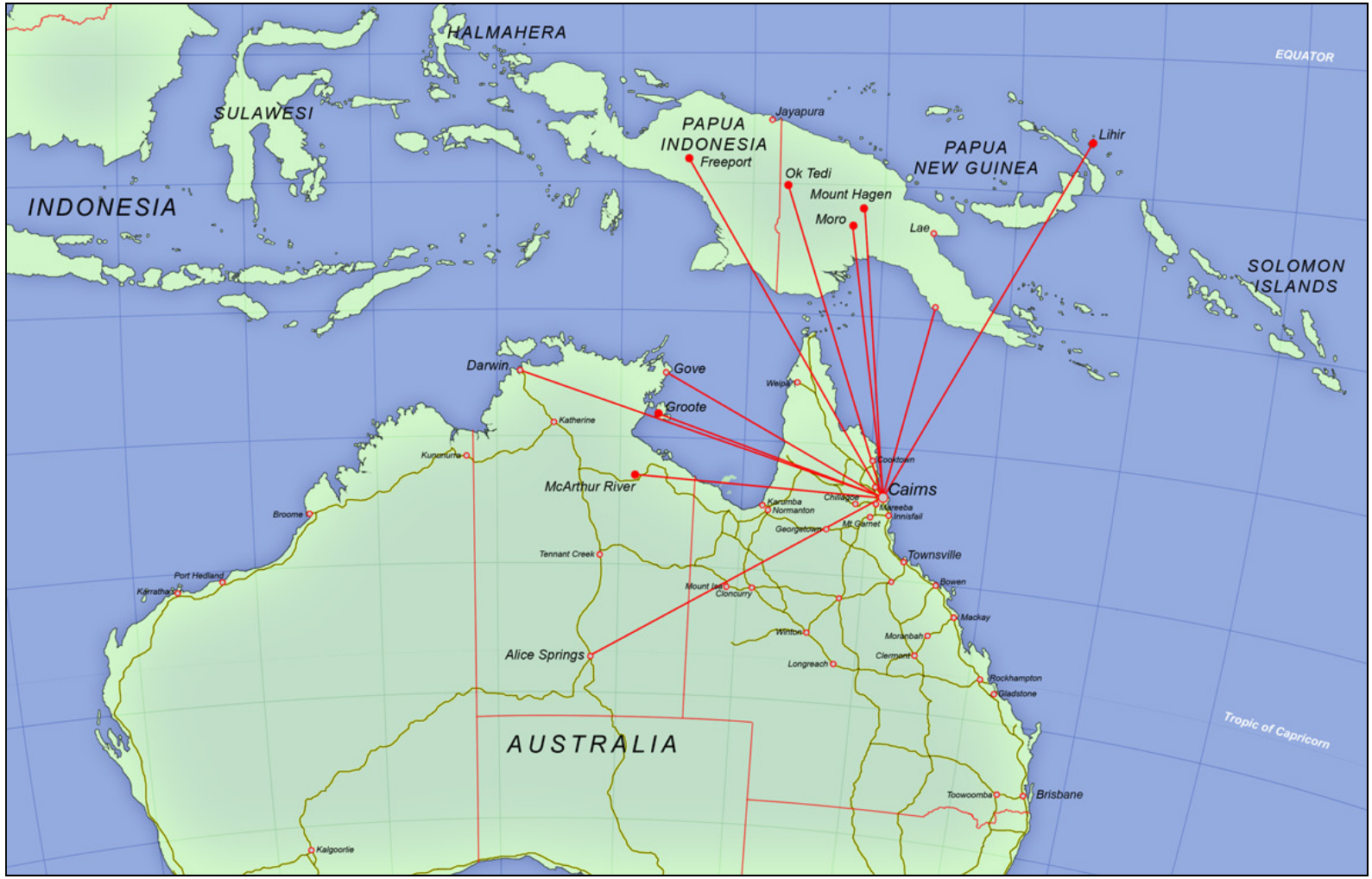
The following gives an idea of the comparative levels of production from various areas as at 2003/04.

Value of Mineral Production, 2003/04		
Northern & Central Qld		$11.2 bn
Far North (Cairns)	$0.371 bn	
North (Townsville)	$0.946 bn	
North West (Mt Isa)	$4.127 bn	
Mackay (Mackay)	$2.985 bn	
Fitzroy (Rockhampton)	$2.733 bn	
Northern Territory		$2.3 bn
Papua New Guinea (12 months Mar Q 2005)		$2.2 bn
Freeport Indonesia		$5.4 bn
Western Australia (not just north) est 2005		$17.8 bn
Total		**$38.9 bn**
Source: Cairns 2020/2050 Business Research Manual.		

Map 7 – Mining Related Air Services, Queensland Areas



Map 8 - Mining Related & Other Relevant Air Services, Interstate & Overseas



4. ANALYSIS BY AREAS

4.1 GENERAL

The following looks at mining and industrial activity in detail in the study area.

The areas are grouped for analysis as follows.

	No. of Projects Listed in the Data Base
Cairns Area	73
Peninsula	9
North West	105
Townsville/Charters Towers	75
Mackay	65
Northern Territory	72
Western Australia	37
PNG	32
Indonesia	11

Previous Maps 1 to 5 charts the relevant mines/industrial projects.

Database, Appendix 2, lists details.

4.2 CAIRNS AREA

Area Covered

This area covers south to the Lynd Junction area, west to Georgetown/Croydon area, then north to the Palmer River and up to Cape Flattery north of Cooktown.

Except for Cape Flattery silica sands operation, mining in this area has been small, sporadic, and short lived over recent decades. However, with high world mineral prices, a surge of development is taking place.

For this report, mining operations and prospects tend to fall into the following sub areas:

Mareeba/Chillagoe

Mt Garnet area/Herbert Valley area

Georgetown/Croydon

Cooktown area

There are a number of small sand, gravel, limestone, dolomite, marble and slate mines operating in the area and listed in the data base that are not likely to involve air services and are not covered further in this report.

In this field however, it should be noted that Mirriwinni Lime, owners Wilkens, apart from having interests in the Cairns area, also have gypsum deposits listed in the Winton area of the North West.

Mareeba/Chillagoe

There are two existing mining operations in the area, both involved in further processing.

Solomon Mines, Tartara Copper Sulphate mine, just north of the 2nd Walsh River crossing, west of Chillagoe. Workforce is about 10. The operation is supplying copper sulphate for zinc processing and other purposes.

Chillagoe Perlite, small Nychum perlite mine, also north of the 2nd Walsh River crossing with the perlite being processed at Mareeba (workforce about 5).

Development is underway of three new mines.

Kagara's Mungana copper, lead, zinc mine, just west of Chillagoe involves a central processing plant that will also be supplied progressively by other mines in the area including King Vol, north of the 2nd Walsh River crossing. A workers camp at Chillagoe is currently under construction. Construction workforce is estimated to peak at about 330 in August this year. Operating workforce will be about 220. It is believed that this is generating charter FIFO's on a weekly basis from Cairns and Townsville. However, most seems likely to be drive-in.

Queensland Ores, Wolfram Camp, wolfram mine near Dimbulah, is under construction. Workforce will be about 50. Seems likely to be drive-in.

Vital Metals, Watershed scheelite (tungsten ore) mine north of Mt Carbine. Operators' workforce will be about 100. Workforce will drive from Mareeba.

There is substantial exploration going on in this area including Mt Mulligan coal/coal seam gas, Magnetite (iron) south of Almaden, gold, copper, wolfram, and tin.

There were proposals aired in 2006/07 for a major porphyry stone mine near Dimbulah with original talk of 300 employees and involvement of the Chinese Fortune River group, but no further progress has been identified.

Two major transport issues in this area are:

- To complete the sealing of the Burke Developmental Road through to Chillagoe, on to Mungana, and over the 2nd Walsh River crossing to the Wrotham Park boundary.
- To upgrade the Almaden, Gingerella, Mt Garnet road.

Mt Garnet Area/Herbert Valley Area

Kagara Zinc have mining operations at Mt Garnet supplying its processing plant and transports ore up from Balcooma down near the Lynd Junction. Processed ore is shipped south via the Kennedy and Gregory Developmental Road to Townsville.

Kagara Zinc are now a substantial mining company with a total workforce as follows:

	Employees	Contractors	Total
Mt Garnet	133	51	184
Balcooma/Dry River Area	176	93	269
Mungana (Chillagoe area)	57	26	83
Thalanga (Charters Towers area)	52	37	89
Total	**418**	**207**	**625**

Over the next two years, they expect to go to a workforce of 850 with increases likely to be mainly at Chillagoe.

Mt Garnet operation is starting to go underground.

Advanced projects in the area include:

Metallica/Nornico's Nickel prospect, Bell Creek/Minnamoolka/Kokomo. The nickel deposits commence about 30km south of Mt Garnet and are part of a series of deposits held by the company that stretch south to Greenvale area and Lucky Break, north of Charters Towers.

It is proposed that the nickel ore will be upgraded and transported to the Nickel Refinery at Yabulu near Townsville.

The project was moving ahead rapidly, but has hit an unexpected two-year delay due to a dispute with the refinery. Kagara has taken a stake in it and projected. Earliest time for commencement of operations at the most southern deposit, Lucky Break, was third quarter this year and Bell Ck/Minnamoolka projected for late 2009.

The company had hoped to be operational by late 2010. Capex is expected to be $350m. Construction workforce is expected to peak at 250 and construction take two years. Permanent workforce of 100 is planned in on-site village.

North Qld Metals, Baal Gamon, Tin, Copper, Silver, Iindium prospect, 7km west of Herberton is at feasibility study level, but no early start up is indicated.

Australian Diatomite Earths, Diatomite deposit in the Conjuboy area has been listed by Queensland Mines Department in the past as being advanced, but no evidence has been able to be ascertained of any early start. It has been listed as exploratory in the data base.

Other exploration taking place in the area include Intermet Magnetite (iron) west of Mt Garnet, Auzex Gold, Diatreme Gold, Metallica Gold.

Georgetown/Croydon Area

There has been no substantial mining in this area since the closure of the Kidston and Croydon gold mines a decade ago.

However, the whole area is currently subject of a great deal of exploration. There are two well advanced projects that seem to be rapidly approaching construction go-ahead.

Copper Strike's Einasleigh Copper/Zinc deposits. Feasibility studies indicated an employment of 100. This mine is just north of the old Kidston gold mine whose workforce was flown in from the Tablelands. The main deposits are right at Einasleigh and next to the Einasleigh airstrip. Feasibility study is due for completion first half 2008 and construction to commence in 2nd half 2008 involving about 100 contractors. Production to start 2010. Workforce is expected to be 30 permanent and 35 in each of two shifts. It is expected to be open cut going to underground, with a mine life of 10 years.

Rennison's Agate Ck Gold prospects deposit. Exploration is well progressed and it is listed as likely to start up late 2009. Workforce is likely to be construction about 100, operation 80-90, 50% being contractors. Although small, the mine is in a remote area south of Kidston and likely to involve a 'fly-in' operation. Barrick Gold has a 35% interest. They have an airstrip question. Can fly into Forsayth or Old Robin Hood Station, but wet season problems of getting to mine site especially from Forsayth. A power supply problem to mines in the Georgetown area has been identified.

Calcifer Industrial Minerals' Lighthouse Silica Quartz prospect near Einasleigh was earlier listed as being advanced, but appears to have proven not as promising as first thought.

Exploration taking place in the area includes:

Geothermal – Kuth exploration area at Eveleigh near Mt Surprise.

Uranium – Mega Uranium Ltd and others, Maureen deposits near Georgetown and other locations.

Lead Zinc – Gold Aura, BHP Far West.

Copper – Plentex, Georgetown Mining, Glengarry.

Gold – Plentex, Gold Aura, Qld Gold & Minerals, Auzex, Diatreme, Echelon.

Tin – Kangaroo Metals.

Tantalite - Qld Gold & Minerals, Buchanan Gully's Tantalite prospects near Georgetown look interesting. Tantalite is used in mobile phones.

Tungsten – Republic Gold's Whumbal West prospect.

Note: There is an observable trend in other areas towards establishing regional treatment plants (eg. Mt Garnet, Mungana, Charters Towers, Ravenswood, Cloncurry) drawing on smaller surrounding deposits. It seems likely that Georgetown area could move in this direction.

Cooktown Area

The only major operating mine in the area is Cape Flattery Silica Mine/Mitsubishi, silica operations at Cape Flattery, north of Cooktown. At mine, employment 105 and 10 in Cairns office. Labour force is drawn, in part, from nearby Hopevale Aboriginal community. The company has its own aircraft at Cairns, a Caravan with fly-in of about 10 daily, except Thursdays.

A decision was recently made to close Bluestone's tin mining operations (workforce 80), near Helenvale south of Cooktown due to unexpectedly poor grades.

Workforce

Summary of the workforce in the area (not including the quarrying operations), is as follows:

Current		
Cape Flattery	115	
Kagara (Mt Garnet/Balcooma area)	453	
Kagara (Mungana/Chillagoe)	83	
Solomons Mines	10	
Nychum Perlite	5	
Wolfram Camp	40	
Total	**706**	
Prospective Additional (Operating)		
Kagara Additional	225	(committed)
Rennison Agate Ck	80	(likely)
Copper Strike Einasleigh	100	(likely)
Vital Metals	100	(likely)
Nornico	100	(delayed)
Total	**605**	

Thus, the current workforce of 700 seems likely to almost double over a five-year time frame.

'Fly-in' workforce is relatively minor at present (mainly Cape Flattery and some Chillagoe), but is likely to increase strongly especially to the Georgetown area mines.

Implications of the foregoing for a strategy include:

a) *There are infrastructure questions to be attended to in this area, including road development, power supplies and land release around towns where expanded workforce is locating.*

b) *There is a special urgent need to engage with existing and potential new 'fly-in' operations in the southern part of the area.*

c) *There are mining workforce training needs emerging in the area with mining companies reporting some difficulties sourcing skilled workers. Some 17 mining and exploration companies attended a meeting on the question organised recently by Department of Mines and Energy and the Indigenous Coordinating Centre (see also Section 6.2).*

d) *There is a great deal of exploration activity taking place in this area that could quickly develop into additional workforce needs.*

e) *Projects such as the Mt Surprise Geothermals, Mt Mulligan coal and coal gas and iron ore could have ramifications for power generation and processing in the region.*

f) *Some of the projects like Mt Mulligan coal and the magnetite could have potential demand for export by ship via regional ports.*

4.3 PENINSULA

Area Covered

This is taken to include the area down to Alice River west of Laura.

Bauxite

Major operation in the area is Rio Tinto's (formerly Comalco's) bauxite mine at Weipa - workforce 800. The mine recently went through a major expansion of capacity from 11m to 16m tpa. Reports have been received that difficulties organising for some skilled tradesmen to be located at Weipa is leading to increased 'fly-in' from Cairns. Attempts to engage with the company for the research were not successful indicating that there may be a need for the Cairns business community to engage further with the company.

Qantas Link has recently had its license to operate on the route reconfirmed. It provides an excellent daily service.

Shipping services by Perkins (who took over Gulf Freighters service ex Karumba) was shifted to being ex Townsville, then to ex Cairns.

Rio Tinto operate Alcan's leases. It appears that Rio Tinto are planning to reduce effort in the north at Andoom and switch to the south towards Aurukun.

Subsequent to our main research, Rio Tinto have advised (see Financial Review, 10-06-08) of plans to upgrade their operations further:

a) To build a new deep water port to load larger ships to be located south of the Embley River.

b) To bring into service, five 'Post Panamax' size vessels (two of which have been delivered).

c) The port possibly taking 'Capesize' vessels, ie. even larger than 'Post Panamax'.

d) To expand production from the 10 – 12 million tonnes a year a few years ago (mainly for the QAL Alumina Plant, Gladstone) to about 18,000 at present, to 35 million tonnes a year by 2015 with a 50-year minelife at this rate.

e) To expand its alumina refineries such as Yarwin two and Yarwin three, and potentially QAL and possibly shipping ore to Gove.

Implications for workforce at Weipa is not known. However, an approximate doubling of outputs by 2015 would certainly involve an expanded workforce and a notional 300 is included in a 5-year time frame.

Cape Alumina/Metallica in association with Xinfa (China) have been taking up leases in the area around the Rio Tinto/Aurukun leases including the deposits at Vrilya Point up towards Bamaga. Drilling is taking place to prove up reserves. Projected start of construction would be 2010. Potential operating workforce is given as 260 drawn from indigenous communities and 'fly-in' from Cairns.

Aurukun deposits are proposed to be developed by Chalco (China) to produce about 6 – 7 mtpa (cf Rio Tinto Weipa 18 mtpa) with workforce of, construction 1,000, operational 300 to 400 mine, and 50 port. The mine would feed an east coast alumina plant.

Aurukun is 70km south of Weipa. A good road would put it less than an hour's drive from Weipa airport.

A major question for mine services is whether a separate port is built there (as seems likely) and whether 'fly-in' services develop direct or via Weipa.

Other

There are extensive high grade kaolin resources throughout the area, at times under the bauxite.

Minerals Corporation Skardon River, 85km north of Weipa, workforce 45, has an office in Cairns and has had 'fly-in' of workforce. It has entered into an agreement with Metallica/Gulf Alumina to undertake joint mining.

Kendall Resources is exploring a kaolin prospect further down the coast between Aurukun and Pormpuraaw.

Matilda Minerals (who have a mineral sands operation on the Tiwi Islands), are exploring the west coast/NPA area north of Weipa for mineral sands. It appears that the deposits could be larger than Tiwi Islands and are looking promising. Employment is estimated at 40. The deposits commence along the coast just north of Weipa and presumably air access would be via Weipa Qantas Link flights.

Kuth Energy have recently commenced investigating geothermal prospects near Aurukun.

There is gold exploration around Coen (the old Ebagoola field) and Alice River, west of Laura, including King Eagles (Archer River Gold prospect, 55km N Coen). North Queensland Mining and Explorations, (Posie / Alice Queen / Peninsula King), but no substantial mining plans have been identified.

Summary of workforce implication is as follows:

Current	
Rio Tinto (Weipa)	825
Skardon River	40
Total	**865**
Prospective Additional (Operating)	
Rio Tinto (Weipa)	300 (est)
Chalco (including port 50)	400
Cape Alumina	260
Matilda Mines	40
Total	**1,000**

More than a doubling of workforce seems likely on a 5-year time frame.

Implications of the foregoing for a strategy include:

a) *How local infrastructure of ports and roads will be developed in the area.*

b) *The degree to which indigenous workforce can be mobilised and trained affecting the extent of 'fly-in' workforce.*

c) *The degree to which in current tight workforce conditions, Rio Tinto Weipa will be able to sustain a residential workforce compared with a 'fly-in' workforce.*

d) *Need to establish a working relationship with existing and potential new operators in the area.*

4.4 NORTH WEST QUEENSLAND

Area Covered

Area covered is west of Charters Towers (including Hughenden) to the Northern Territory border, south to the Winton area and north to the Gulf and including the Woolgar area, north of Richmond.

Woolgar is marginally closer to Cairns than to Townsville, however the current road system makes access via Richmond easier.

It should be noted that some of the exploration prospects are close to the Northern Territory border. There are some exploratory prospects across the border that might be jointly serviced (see NT Area).

Existing Mines

Up until about a decade ago, mining in the area was dominated by the Mt Isa Mines (MIM) operation at Mt Isa.

Today, a total of 17 operating mines have been identified in the area.

		Estimated Workforce
Mt Isa Area	Mt Isa & Surrounds	
	○ Xstrata Mt Isa (including Enterprise, George Fisher, Blackstar with the new Handelbar mine opening (copper, lead, zinc)	2,400
	Northern/Gunpowder Area (north of Mt Isa)	
	○ Aditya Birla's Mt Gordon (copper)	290
	○ Copper Co's Lady Annie (copper)	160
Gulf Area	Century Area (south of Burketown)	
	○ Zinifex Century Mine (zinc)	1,100
Cloncurry Area	Cloncurry & Surrounds	
	○ Ernest Henry Minings Ernest Henry Mine, 38km NE (copper,gold)	500
	○ Breakaway Resources Eloise Mine, 60km SE (copper	200
	○ Exco's Great Australian Mine, 2km south (gold, copper sulphate)	15
	○ Q'ld Minings/Cudeco, Mt Norma Mine, 30km SE (copper sulphate)	9
	○ Xstrata's Greenwood Limestone Mine, 51km E Cloncurry	N/A
	Cloncurry North	
	○ Matrix Metals Mt Cuthbert/Leichhardt Mine, 110km N (copper)	140
	Cloncurry South (Selwyn Range)	
	○ BHP Billiton Cannington Mine, 85km SW (lead, zinc, silver)	900
	○ Barrick/Placer Dome's Osborne Mine, about 100km SW (gold, copper)	430
	○ Southern Cross Fertilisers/Incitec Phosphate Hill Mine at Duchess, 140km S of Mt Isa	500
Winton Area	Winton/Hughenden	
	○ Three Gypsum Mines (Cork, Eden Valley, Main River), SW of Winton and one outside Hughenden)	N/A
Total		**6,644**

Advanced Projects

Some 11 projects have been identified in the advanced category as follows.

Most are around Cloncurry.

Cloncurry & Surrounds

Exco's Cloncurry project involves various deposits in Cloncurry/Ernest Henry area (copper). Prefeasibility study is looking to production, Jan 2010. 1 to 2mtpa operations producing 15,000 - 25,000 tonnes of copper concentrate. Open pit and underground with about 200 employees.

Zinifex Dugald River – lead, silver, zinc, 60km NW Cloncurry – Underground – expected to come into production in 2011. 40,000 tonnes of concentrate per annum. Employment construction 300, on-going 400.

Universal Resources/Xstrata Roseby Mine, 60km NW of Cloncurry (next to Dugald River) – copper 8mtpa. Estimated 150 employees. Start production late 2008.

Cudeco's Rocklands Copper, 15km W Cloncurry – copper – Stand alone or feed Ernest Henry – still drilling – size and start up uncertain.

Matrix White Range Copper, 50km S of Cloncurry – Finance arranged, 15,000 tonnes of copper, Bankable Feasibility Study stage. Construction estimated to commence in the first quarter 2010 and operating workforce about 120.

Ivanhoe/Barrick's Mt Elliott/Selwyn Copper Project – Still exploring, size and start up uncertain. Eventual operating workforce is estimated at 500.

Mt Isa North

Summit Resources Valhalla and other uranium deposits, 30 – 40km north of Mt Isa – Still drilling and no set program but reported potential employment 500.

Scarborough/Xstrata Lady Loretta Lead, Zinc, Silver, next to Lady Annie, 115km N of Mt Isa. Prefeasibility completed 2007 into 1mtpa operation – no start up date.

Julia Ck

Intermin Resources Julia Ck Vanadium – Expects to commission engineering and scoping studies 2008.

Woolgar

Oxiana/Strategic Minerals Woolgar (including Lost World) Gold, 120km N of Richmond – Still drilling – no size and start up information – dam constructed preliminary to mining.

Identified prospective additional operating employment is as follows:

Exco Cloncurry	200
Dugald River	400
Ivanhoe	500
Summit Valhalla, etc	500
White Range	120
Roseby	150
Total	**1870**

Also listed as advanced, but with prospective workforce not identified in the above list are Lady Loretta, Rocklands, Julia Ck Vanadium and Wolgar.

We thus have a substantial increase in prospective workforce demand of the order of about 2,000 and probably larger.

Exploration

A further 76 exploration projects have been identified ranging over the area including the following.

Gulf Area

- Uranium at Westmoreland, near the Northern Territory border (Laramide).
- Iron ore Constance Range (Summit/CHB Resources).
- Zinc at Elizabeth Ck & Riversleigh (Zinnifex.Icon/Smart Trans).
- Copper at Kamarga/Walford Ck (Copperstrike).
- Elkedra Diamonds/Uramet, 130km NE Mt Isa. (This search extends across the NT border.)

Mt Isa/Cloncurry Area - Major Exploration Programmes

There are a number of companies involved in major exploration programs in the Mt Isa/Cloncurry area.

Copperco (with Millenium Resources), apart from developing Lady Annie (see Operating), is active in exploration for copper, 30km south at Buckley River and for gold around Cloncurry.

Exco Resources, apart from their interest in the small Great Australian operation at Cloncurry and advanced Cloncurry project, are extensively involved in gold and copper exploration in a radius around Cloncurry and in lead, zinc and silver exploration with BHP Billiton at Soldiers Cap and Black Rock, 20km SW of Cloncurry.

Haddington Resources, apart from their advanced Monakoft's project just north of Cloncurry, have other exploration taking place E and SE of Cloncurry.

Matrix Metals, apart from their Leichhardt/Mt Cuthbert operation, are in gold exlporation SSW of Cloncurry and for copper and uranium in the White Range area.

Universal Resources, apart from advanced Roseby copper project are exploring in the nearby Cameron River area and SE of Cloncurry for copper.

Summit Resources, apart from advanced uranium exploration at Valhalla and other, 30 – 40km N of Mt Isa and Constance Range iron ore exploration in the Gulf area, are exploring for lead, zinc, silver N and S of Mt Isa and gold around Mt Isa.

Red Metal, specialises in copper exploration and is exploring areas around the Mt Isa/Cloncurry area, mainly areas adjacent to existing mines from Ernest Henry in the north, south to Eloise, Cannington, Selwyn area (lead, zinc) and W of Mt Isa.

Other Exploration Recorded

Cloncurry Surrounds

Anglo American/Falcon Minerals – Saxby - nickel, 150km NNE.

Pegmont Mines - Pegmont – lead, zinc, 180km S.

Murchison United - Millenium – copper, 35km WNW.

Minotaur – Naraku – copper, 50km N.

Bon Evergy – uranium, Glen Iris, 45km NNW.

Central Gold – uranium, Mary Kathleen.

Goldsearch – uranium, Mary Kathleen.

Gryphon Minerals – uranium, near Cloncurry.

King Minerals – gold, copper, Cloncurry area.

Paradgm – Toole Buc etc – uranium, 40k E.

Glengarry – Snake Ck – uranium, 30km S.

Gold Star/Q'ld Gold – Top Camp – gold, 35km SW.

Eschelon/BHP Billiton – Selwyn etc – LZS – 100km S.

Platsearch/NCP – Horse Ck/Lilleyvale – copper, SW of Cannington.

Mt Isa Surrounds

Gateway Mining/Minotaur – Surprises – gold, copper, 100km NNE.

Perilya – Mt Oxide – copper, 100km NW.

Red Metal – Mt Isa – copper, 20km NE.

Mosquito Gold – Trikay – gold, copper, 53km E.

Deep Yellow – around Mt Isa – uranium.

Liontown Resources – Fort Constantine – gold, copper, 25km W.

Malachite Resources – Mt Lidster – copper, E Mt Isa.

Glengarry – Mt Guide – gold, 35km S.

Goldminco/Diatreme – Tick Hill – gold, 110km S.

Cullen Resources/Minotaur – Duchess – copper, 100km SE.

Woolgar

Convergent Minerals – Steam Engine – gold.

Pepinnini Minerals – Woolgar – gold.

Geographical Layout & Air Services

Road and rail infrastructure patterns have meant that services to the North West Mineral Province have been predominantly delivered from Townsville.

However, previous Map 6 illustrates that in flying distances, Mt Isa is the same distance from Cairns as it is from Townsville, and Cloncurry is only marginally further from Cairns.

Qantas direct flights from Brisbane provide a conduit for workers from the south east to Mt Isa.

Extent of demand for 'fly-in' workers in the area however has been such that companies have been experiencing difficulties in getting sufficient workers from Townsville and have been increasingly been looking to the Cairns/Tablelands/Tropical Coast area and flights ex Cairns to the North West area have been increasing.

Relatively poor regional service roads and distances from the main regional airports of Mt Isa and Cloncurry lead to a pattern of direct flights, especially into the larger mines distant from the main airports.

Pattern of services identified is set out in previous table, Section 3.5.

At one time, all services seemed to be ex Townsville except the MacAir service via Gulf centres.

Out of nine airports/strips being serviced in the area, five have services from the Cairns area, the four not from Cairns are in the far south of the region - Eloise, Phosphate Hill, Osborne and Cannington.

Future Development

Demand for 'fly-in'/'fly-out' services in the area is set to increase further.

Of the advanced projects listed, seven are relatively close to Cloncurry. Cairns' services to Cloncurry are relatively limited and it is an obvious target for expanded larger aircraft services.

(In the course of the study, Skyair World announced it was commencing services three days a week from Brisbane and from Cairns.)

The question for Cairns/Mt Isa services is the introduction of larger aircraft onto the route, possibly associated with tourism flows.

Any new Gulf area mining (eg. Westmoreland Uranium, Constance Range Iron Ore) is well within Cairns area of flying time advantage.

Lady Annie and Lady Loretta are within Cairns' area of flying time advantage and might be targeted.

The operations to the south of Cloncurry including Cannington, Osborne and Phosphate Hill and any Mt Elliott/Selwyn development could be targeted to follow the pattern of other mines with Point of Hire and services ex both Cairns and Townsville.

Implications of the foregoing for a strategy include:

a) *A major part of the mining workforce in North West Queensland is supplied on a 'fly-in' basis and most new development is likely to be based on 'fly-in' services.*

b) *Many of the comments in Section 3.4 "Mining Company Considerations" and 3.3 "Labour/Personnel Supplier Considerations" relate to this area.*

c) *To establish and maintain services ex Cairns, volume is needed enabling use of larger aircraft. Availability of volume out of Brisbane is a threat.*

d) *While there are prospects of providing greater volume flights into Mt Isa, much of the new development will be around Cloncurry and the question of establishing more direct flights into that centre will need to be addressed. (See late note re proposed new services to Cloncurry by Skyair World.)*

e) *There are substantial infrastructure issues in this area, especially delivery of cheaper power to mines, roads and in some cases, water supplies.*

4.5 TOWNSVILLE/CHARTERS TOWERS

Area Covered

Area covered is south to Collinsville, north to the Lynd Junction area and west to Pentland.

Operating Mines

Six operating companies have been identified apart from three limestone/dolomite operations.

Charters Towers Area

Citigold, Charters Towers, gold mine with workforce 100.

NQ Metals/Helmskirk Pajingo Gold operation, 60km SSE Charters Towers. (Note: NQ Metals recently purchased the mine from Newmont who had a recorded workforce of 400. These became redundant. AVKO Mining have been brought in as mining contractor and production is continuing. The size of the processing plant is being reduced. Current employment is 100.

Resolute Minings, Ravenswood Regional processing plant takes ore from various deposits in the area including Sarsfield. Workforce 350.

Kagara's, Thalanga Copper mine and processing plant, 65km west of Charters Towers also takes ore from Waterloo nearby and from Balcooma. Workforce 90.

Collinsville Area

Collinsville Coal Company Pty Ltd (Xstrata 55%, Itochu/Sumitomo) Collinsville Coal mining operations workforce 508. Export is via the port at Abbott Point north of Bowen.

QCoals – Sonoma – coking and thermal coal for shipment via Abbott Point, 6km south of Collinsville, is under construction and due to commence production in 2008. Construction workers are being bussed from Townsville. Workforce construction 160, operating 100.

Advanced Projects

Advanced prospects include development of additional deposits to feed into the central gold processing plants at Charters Towers and Ravenswood.

Citigold's Charters Towers new mines Brilliant, Day Dawn and Sunhurst with workforces of 60, 80 and 120 are to come on stream 2010, early 2008 and late 2008 respectively.

Resolute Mining's Ravenswood new Mt Wright prospect.

These developments mean that loss of employment based in Charters Towers from downscaling Pajingo is likely to be offset.

Other advanced projects include:

Mega Uranium's Ben Lomond Uranium project, 50km west of Townsville. A project concept study by Golder Associates and GRD Minproc is due for completion 2nd quarter 2008. A go ahead would be dependent on a government decision to allow expansion of uranium mining.

Mettalica Mineral's Nornico Lucky Break Nickel deposit, 90km north of Charters Towers (see also Cairns area – Bells Ck and Minnamoolka deposits) was due to commence shipping ore to the nickel refinery in Townsville late 2008, but this has been delayed.

Curtin Bros' Mount Moss Iron Ore, 105 km west of Townsville, status – currently trial mining with workforce of 64. Proposed to be operational end 2008, provided transport issues can be sorted out.

Conquest Mining's Mount Carlton Gold prospect, 20km north of Collinsville. It is reported that the deposit could become the biggest gold deposit in northern Queensland. Still drilling. (Conquest are also exploring at Crush Ck and Normanby prospects in the area.)

Liontown Resources, Mt Windsor Copper Lead, Zinc, Silver, Gold deposit, 35km south of Charters Towers has been listed by Queensland Mines as advanced.

Other Exploration

Other exploration in the area includes:

Upper Burdekin/Greenvale

Gold – Metallica (Six Mile).

Lynch Mining (Big Rush) Diatreme (Burdekin), Tamaga Resources gold and other base metals. Beacon/Glengarry (Greenvale) RMA (McCauley).

Uranium – Ellendale (Clarke River), Epsilon (Pandanus West), Mantle (Phantom Ck).

Tin – RMA (Coane), Kangaroo Metals (Ewan).

Nickel – Resource Mining (Three Rivers), Giralia Resources (Cargoon).

Charters Towers/Ravenswood Area

Gold – Echelon (Fenian – Mt Leyshon), Mantle (Granite Castle and Gt Britain), Redbank (Newstar), Houma (Old Man, Waterloo , Wellington), ActiveX (Pentland), Axiom (Poley Cow), Gold Co (Three Sisters), BMAC (Wellesley), Maximus (Selheim).

Uranium – Metex (Nebo).

Substantial interest has been expressed recently in developing a power station for the area based on Xstrata's Pentland coal deposits.

Some 20 industrial projects were identified in the area.

Air Services

Cairns has excellent Qantas Link services to Townsville supplemented by Skytrans and Queensland Regional services.

Most of the mines in the area are within drive range of Townsville.

There is a concentration of activity around Charters Towers and Collinsville. However, it is difficult to see viability of direct services from Cairns to these centres.

Current workforce demand is as follows:

Current	
Citigold	100
Ravenswood	350
Thalanga	90
Collinsville	500
Sonoma	100
Pajingo (reduced from 400)	100 (est)
Total	**1,240**

There is substantial prospective additional workforce demand.

Citigold at Charters Towers is likely to involve an extra workforce of 260 which will offset the recent reduction at Pajingo.

The other prospective projects of Ben Lomond, Lucky Break, Mt Moss, Mt Wright and Mt Windsor are likely to involve a substantial increase in workforce demand out of Townsville. Full prospective additional workforce has not been fully researched and an interim estimate of 500 has been included.

In addition to mining projects, some $4 billion of industrial/infrastructure projects were identified in the area as follows:

Under construction	$1.582 bn
Advanced	$1.065 bn
Being explored	$1.373 bn
Total	**$4.020 bn**

Implications of the foregoing for a strategy include:

a) *Increasing demand for mining workforce in the immediate region is likely to put pressure on Townsville's ability to meet increasing needs elsewhere in the north.*

4.6 MACKAY REGION

Area Covered

The area has been taken to extend north towards Charters Towers, but not include Collinsville area, and south to the Clermont area, but not include the Emerald area.

Existing Operations

Some 15 existing operations with a workforce of approximately 9,000 have been identified as follows.

Coal

Moranbah Area

- BHP/Mitsubishi's Alliance Goonyella/Broadmeadows coking coal mine, 30km north of Moranbah - workforce 2,650.
- AMCI/Broadlea Coal Management – Broadlea North, open cut coal mine, 24km NE Moranbah – workforce 265 (see also Carborough Downs advanced project).
- Millenium Coals/Peabody's – Millenium Thermal Coal, 20km E Moranbah - workforce 180.
- Anglo Coals, Moranbah North, coking coal mine – workforce 670.
- Peabody's, North Goonyella, coking coal, 40km north of Moranbah – workforce 330.
- Vale's Isaac Plains Mine near Moranbah – workforce 70.
- BHP's Poitrel Mine near Moranbah – workforce 160.

East of Coppabella

- Macarthur Coal's, Coppabella Thermal Coal mine between Coppabella and Nebo – workforce 510.
- Macarthur Coals, Moorvale PCI Thermal Coal mine, 10km south of Coppabella – workforce 200.
- BHP/Mitsui, South Walker Ck Thermal Coal mine – workforce 320.

Glendon Northern Area

- Marubeni Coal's Hail Creek Coking Coal mine, near Glendon – workforce 500.
- Xstrata's Newlands Thermal Coking Coal mine, north of Glendon – workforce 661.

Peak Downs/South

- BHP/Mitsubishi's Peak Downs Coking Coal mine, south of Moranbah – workforce 1300.
- BHP/Mitsubishi's Saraji Thermal Coal – workforce 1030.
- Rio Tinto's Blair Athol Mine near Clermont – workforce 225.

A further 12 advanced projects were identified and 8 exploratory. The situation is developing rapidly and more recent reports have listed a total of 33 projects that could be operational by 2015.

Two operating gold mines recorded (Twin Hills and Belyando) appear to have closed.

Current and prospective workforce demands are as follows:

Current	
Broadlea North	265
Goonyella and Associated	2650
Coppabella	510
Hail Ck	500
Millenium	180
Moorvale	200
Moranbah North	670
Peak Downs	1300
South Walker	320
North Goonyella, etc	330
Saraji	1030
Blair Athol	225
Isaac Plains	70
Poitrel	160
Newlands	661
Total	**9071**

Advanced Prospective	
Clermont	380
Duania	160
Grosvenor etc	300
Isaac Plains South	40
Olive Downs	60
Peak Downs (expansion)	180
Ellensfield	230
Eagle Downs	180
Moorvale West (expansion)	150 (est)
Moranbah South	300
New Saraji	300
Vermont	280
Total	**2560**

The Mackay region is thus facing an increase in demand for mining company workforce (identified during the course of the study), of about 2,600 or about 30%. This is only identified company workforce and full additional workforce needs in the region are likely to be higher.

More recent reports have indicated even more projects are likely to come on stream in a 7-year time frame with total additional job requirements in the region by 2015 of the order of 15,000 (see Mackay Daily Mercury 24-05-08).

Apart from mining developments, the research identified a further $2bn worth of industrial and infrastructure projects as follows:

Industrial/Infrastructure Projects	
Under Construction	$1.634 bn
Advanced Planning	$0.235 bn
Being Planned	$0.312 bn
Total	**$2.181 bn**

Air Services

Much of the Mackay region's demand for labour is met from local residents in Mackay but also in centres like Moranbah, Glendon etc and some companies have definite policies of developing residential capacity.

However, substantial 'fly-in' activity is reported to be taking place into Mackay.

Apart from flights and drive-in from Mackay to Moranbah, Clermont, and the coal fields, MacAir are flying from Brisbane to Moranbah.

The volume of workforce required could justify an air service from the north. However, initially this would probably be an extension of one of the Cairns/Townsville services into Moranbah.

Volumes of tourist movements justify direct Cairns/Hamilton I flights. The question is whether potential volumes of mine, workers, business and tourism traffic would justify direct Cairns/Mackay flights as opposed to the current Cairns/Townsville/Mackay services.

Implications of the foregoing for a strategy include:

a) *The sheer size of the industry and likely increases in workforce demand mean that the Cairns area probably should interest itself in becoming a source of supply for 'fly-in' to this area, if it is going to seriously pursue building up its capacity as a supply centre.*

b) *A further reason for interest in the Mackay area comes from comments about skill requirements generally being lower in this area. This raises the possibility of 'green' workers using the area to upskill.*

c) *Because different mining companies have different policies, approaches to the industry in this area should be selective, and confined to those companies that look to source 'fly-in' workforce.*

d) *Alternatives for improved air services to be explored include:*

- *Direct flights to Mackay.*
- *Cairns/Townsville/Moranbah (or Clermont) services.*
- *Direct Cairns/Moranbah (or Clermont) services.*

4.7 NORTHERN TERRITORY

Area Covered

Mining in the Northern Territory has been divided into six areas for this study:

Eastern NT.

Tennant Creek Area.

Alice Springs.

Tanami Desert.

The Darwin/Pine Ck Area.

Offshore Darwin.

Eastern NT

There are three major long-term mines in this area that are important to NT's value of mineral production.

Alcan's Gove operation, involving its mining of bauxite and processing into alumina - 1,200 employees.

Gemco's Groote Eylandt manganese mine - workforce 600.

McArthur River Minings, lead, zinc, silver mine at McArthur River, 45km west of Boorooloola - workforce 400.

There have been air links from Cairns to each of these mines. Map shows equal distance line that runs approximately east of Alice Springs, McArthur River, Groote and Gove.

Gove is serviced by regular Qantas Link services Cairns/Gove/Darwin.

Groote has been serviced by flights out of Cairns in the past, but current link from Cairns would be Qantas Link to Gove and then Air North to Groote. Groote is going into an expansion and residential capacity is not adequate. They have called for tenders for flights out of Cairns.

McArthur River is currently serviced by one flight a week by Regional Pacific. It was three until recently. Whether it is sustainable to draw workforce only out of Darwin, will be tested in time.

There are bauxite deposits further west of Gove at Vashon Head, but no development activity identified.

However, there is substantial exploration activity taking place in the McArthur River area.

Diamonds

North Australian Diamond's Merlin deposit. There are proposals to reopen the mine in one to three years' time.

Copper, Lead, Zinc etc

Redbank Mines (Redbank Mine), Admiralty Resources (Bulman Exploration), Hydromel Corp (Stanton – Exploration (cobalt)).

Manganese

Finching Pty Ltd.

Uranium

Westmoreland Uranium deposit in the Queensland Gulf area extends across the border. Nupower and Gulf Mines are active in the area.

The extent of this exploration activity and its location almost equidistant from Darwin reinforces the potential interest of this area for 'fly-in' services.

Tennant Ck Area

Operating mines in the Tennant Ck area are:

Bootu Ck, Manganese, 125km north of Tennant Ck - workforce 110.

Peko's, Tailings, Magnetite, Gold, Copper, Cobalt Mine at Tennant Ck - workforce 30.

Advanced projects include Excalibur Mining's Juno gold prospect (expected to reopen the mine over the next 1 to 3 years).

Exploratory activity in the area includes:

Adelaide Resources, Rover, gold copper prospect.

Territory Resources, Warrego, magnetite tailings/iron ore.

Arafura Resources, gold prospect.

Minemakers, phosphate prospect between Tennant Ck and Mt Isa.

The area is closer to Darwin and has mainly involved smaller mines. Air services even to Darwin are poor. It would need a large development to occur to be of interest for 'fly-in' services from Cairns.

Alice Springs

Alice Springs area is almost equidistant from Cairns, Darwin and Adelaide.

Because of tourism flows, Cairns' air links are every bit equal to those from Darwin and Adelaide.

There are the Mereeni gas operations south west of Alice Springs (with a small workforce only) and the small Mud Tank vermiculite mine north of Alice Springs in the Harts Range area, and a small White Range gold mine, south east.

Advanced projects listed include:

Olympia Resources, Harts Range, Garnet Mine - workforce 60.

Thor Mining, Molyhil, wolfram, molybdenum – workforce, construction 100, production 70.

Arafura Resources, Nolans Bore, Rare Earths.

Energy Metals, Bigrlyi, uranium - (340km NW Alice Springs).

Exploratory prospects scattered around the region include uranium, copper, lead and zinc, vermiculite, vanadium.

Alice Springs is also a road and air services gateway to the Tanami Desert area.

Tanami Desert

Newmont's Tanami Desert gold nine (the Granites, Oberon, etc) is a large operation with a workforce of 560.

It is supplied by road ex Alice Springs. Pearl Aviation has aircraft at Alice Springs to service it.

There is also some gold and uranium exploration recorded in this area.

Darwin/Pine Ck Area

Operations include:

Energy Resources Australia, Ranger uranium mine – workforce 400.

GBS Gold's Tom Gully gold mine – workforce 70.

Compass Resources, Browns, copper, cobolt, nickel.

Territory Resources, Frances Ck, iron ore – workforce, construction 23, production 73.

Advanced projects include:

GBS Gold's, Union Reef, North Point and Princess Louise, Maud Ck and Cosmo Deeps - gold – workforce at least 100.

Arafura Resources, Mt Porter gold – workforce 30.

Western Desert Resources, Spring Hill gold.

Exploration in the area includes iron, uranium, gold, copper, lead and zinc, diamonds, tin and tantalin.

Cairns has excellent Qantas and Qantas Link connections with Darwin.

Darwin Offshore

Minerals

There is Matilda Minerals, Tiwi Islands mineral sands operation – workforce 20, who are also exploring mineral sand prospects in the Peninsula area.

Oil & Gas

Existing operations are:

Woodside, Laminara/Corallina oil – direct workforce 150 – 200. Supplied ex Darwin by vessel "Northern Endeavour" and helicopter.

Coogee Resources, Jabiru and Challis oil.

Projects underway are:

Coogee Resources, Montara/Skua oil - $500m.

AED Oils, Puffin South West oil field - $100m.

Australian Pipeline Trust, Bonaparte Gas Pipeline to carry Blacklip gas to Wadeye to link with the Darwin pipeline - $150m.

Other projects being explored are:

Darwin Clean Fuels – Condensate processing facility producing gas and lime, diesel, LPG and jet fuels - $450m – workforce construction 250, start up 2010.

Woodside's Sunrise Gas Project – Concept Study underway. Could involve either floating LNG plant, or LNG plant East Timor, or LNG processing Darwin.

AED, Talbot oil field.

MEO Australia – Timor Sea LNG project involving an offshore LNG plant located offshore in 44 meters of water at Tassie Shoal.

Coogee Resources – Floating Methanol and LNG plant as part of Montara project.

There has also been speculation that Connoco Phillips may expand their LNG plant at Wickham Point, Darwin, currently based on the BayuUndan offshore operations.

Various other companies are involved in oil and gas search in the area.

An access to these developments would be via the Cairns/Darwin flight.

Comparative distances of Darwin from Cairns and major metropolitan centres:

Darwin from	Approx Distance
Cairns	1700 km
Perth	2500 km
Adelaide	2600 km
Brisbane	2900 km
Sydney	3400 km
Melbourne	3400 km

Implications of the foregoing for a strategy include:

a) *The three major mines in the eastern NT area need to be the target for marketing the Cairns area as a source of workforce. Although flights are scheduled to cease to McArthur River, it will be important not to lose contact with this area. It is not certain that drawing all workforce ex Darwin will work and there is strong exploration activity in the area.*

b) *Good relations need to be established with the NT Government and industry.*

c) *A watching brief is appropriate for the Alice Springs area for any significant developments in that area in view of Cairns' excellent services to Alice Springs. This could include using Alice Springs as a gateway to the large Tanami Desert "The Granites" mines.*

d) *A watching brief should be maintained on operations in the Tennant Ck area.*

e) *Obviously, a substantial increase in workforce requirements in the Darwin area is taking place which may not be able to be met out of Darwin. Some lightweight contact that alerts companies in this area to the excellent connections to Cairns and its potential to act as an alternative supply source of workforce could be appropriate.*

4.8 WESTERN AUSTRALIA

Area Covered

Only that part of Western Australia north of the tropic has been included.

There are two distinct areas:

a) The massive mining area of the Pilbara.

b) The Kimberleys area

Identification of operations in this area has mainly been restricted to operating mines.

Pilbara

We have not analysed the mining activity in this area in detail for this report. However, the area's mining activity is mainly in iron ore, offshore gas, salt and some other base metals. Mining is massive and growing and is Australia's major generator of 'fly-in' jobs (see table in Section 3.5).

Major on-going employers are the iron ore mines.

The offshore oil and gas sector generates large construction work but much less on-going operational employment.

Some of the iron ore companies actively target Queensland through the Courier Mail but don't target Cairns. The companies themselves have developed large residential capacity for mine employees but have some 'fly-in' of specialist employees. However, most of their contractor workforce is 'fly-in'.

Interviews with mining companies confirmed the information from local labour/personnel suppliers that the industry in that area was geared to taking workforce with prior experience, confirming its potential role as a stepping stone for inexperienced workforce out of the Cairns area. This applies especially to construction.

The mines have highly developed airstrips capable of taking 100 seater jets, which at present, come almost exclusively out of Perth.

There is an expectation that they will need to increase the 'fly-in' component and extend it from specialist to general workforce.

Very high rentals are a contributing factor.

Currently, Cairns' major air access to these mines seems to be via Perth. Apart from some direct overnight Cairns/Perth services each week, there are daily services from Cairns to Ayers Rock linking with services from there to Perth.

In terms of flying distances to Perth, Cairns is closer to Perth than Brisbane and the same distance as Sydney, although the Qantas website indicates there are some direct flights from Sydney to the Pilbara. Cairns is not as close to the Pilbara as Melbourne or Adelaide to Perth.

Direct distances between Cairns and the Pilbara are further than from Perth, but almost as close as from Adelaide and closer than Melbourne, Sydney and Brisbane.

Currently, there are some regular Air North services between Darwin and the Pilbara that could provide shorter access than via Perth, but frequency would be lower and cost probably higher.

The need for workers is massive. Earlier comments indicate an opportunity to use the Pilbara as an upskilling area.

Cairns' firms have done business in the area. There was a traditional link between the Torres Strait and the area through Torres Strait Islanders originally being engaged in building the area's early railways.

Kimberleys

Operating mines in the area are as follows:

Argyle Diamonds (Rio Tinto), Argyle diamond mine, south of Kununnara – workforce 850.

Sally Malays Mining's, Sally Malay nickel mine, Halls Ck area – workforce 130.

Kimberley Diamond's, Ellendale diamond mine, east of Derby – workforce 190.

Portman's, Koolan I/Cockatoo I, iron ore, north of Derby – workforce 117.

Kimberley Oils, Blina/Lloyd, oil production east of Derby.

Tanami Gold's, Coyote gold mine, western Tanami down near Newmont's Granite mine in NT.

Teck Cominco/Xstrata, Leonard Shelf, zinc mine, east of Broome.

Kagara Zinc also have an advanced zinc project 140km south of Broome.

Inpex's, Ichtylys Field/Maret Islands proposed offshore gas and onshore LNG facility along the Kimberley coast via a 200km pipeline. This is at an advanced stage of planning, but running into some environmental opposition leading to some indications that the LNG plant might be relocated to Darwin.

The area is closer to Cairns than to Perth and there are prospects of some tourism synergies.

Immediate access would be via Air North services out of Darwin.

Implications of the foregoing for a strategy include:

a) *The volume of workforce demand in Western Australia is such that if Cairns is to seriously position itself as a 'fly-in' workforce supply area, it is appropriate to target some marketing effort to this area, seeing it especially as a 'stepping stone' for 'green' workers.*

b) *There are a few very large operators that could be targeted.*

4.9 PAPUA NEW GUINEA

Area Covered

Coverage in this section is of the operating mines and advanced prospects listed by the Papua New Guinea Chamber of Mines.

It also includes some major industrial projects.

Current Operations

Minerals

Current mining operations include:

- Ok Tedi Minings Ok Tedi Mine (copper) close to the Papua Indonesia border at the head of the Fly River has an output of $2.1bn and a workforce 2,000 plus contractors 1,200. The mine has been operating since 1984 with close-down expected in about 10 years.
- Barrick Gold's Porgera Mine (gold) north west of Mt Hagen, formerly owned by Placer Dome Production, estimated production $0.5bn to $0.8bn per annum.
- Emperor Mines Tolokuma Gold Mine approximately 100km north west of Port Moresby. Production is about $80m a year. Everything including fuel is being flown in from Port Moresby.
- New Guinea Gold Corporation's Sinivit Gold Mine, about 50km SSW of Rabaul. Production about $30m per annum.
- Lihir Gold Ltd's Lihir Island Gold Mine, north east of New Ireland. Production about $600m per annum.
- Niuminco's small Edie Ck gold and silver mine near Wau.

Oil & Gas

PNG oil and gas reserves are located in the Gulf Province/Southern Highlands area.

There are three major players.

Oil Search Ltd (based in PNG)

Exxon Mobil (International)

Interoil (based in Cairns)

Oil Search and Exxon Mobil combine on a number of projects in the Southern Highlands area.

Interoil's interests are in the eastern Gulf area.

The following are the major operating locations.

Oil

Kutubu (joint Oil Search/Exxon). Oil production since 1992, with an export pipeline to the Gulf.

Gobe (joint venture with Santos/others). Oil production since 1998 via pipeline to join the Kutubu pipeline.

Moran and SE Mananda (Oil Search/Exxon and others). Oil production recorded since 2002 via pipeline to Agogo production facility – see also gas. There are associated production facilities Agogo, Gobe and a central production facility.

Gas

Hides – Oil Search (current production is small) supplying Hides Gas to Electricity Project (GTE).

Oil Refinery

Interoil have built an oil refinery in Port Moresby and taken over Shell's extensive network of service stations in PNG.

Workforce Demand from Australia

The large remote PNG mines have traditionally had a demand for 'fly-in' of skilled personnel direct ex Cairns. It should be noted that the PNG Government has strong policies to promote employment of nationals and the 'fly-in' demand ex Cairns is for skilled personnel, supervisors and trainers as opposed to tradesmen and unskilled workers sourced by Australian mines. There is some employment of Filipinos in PNG operations.

Existing Airline Services

There are flights at present to four of the mines operated by Airlines of PNG.

OkTedi – Tabubil (National Jet).

Porgera – via Mt Hagen (Airlines of PNG).

Oil & Gas fields – Moro (Air Niugini).

Lihir Gold – Lihir (Airlines of PNG).

In addition, Air Niugini and Airlines of PNG operate daily flights to Port Moresby with connections to other centres including the mines.

Regional Pacific who also operate extensively in PNG as Hevilift also have regular flights to PNG, mainly carrying their own pilots and personnel.

Heavylift also has operations ex Cairns to PNG.

Estimated 'Fly-in' Workforce

Workforce on a 'fly-in' basis from Cairns is estimated as follows:

Porgera – 140 of which about 100 are based in Cairns.

Interoil – about 15 of the 60 support staff travelling regularly to PNG via Port Moresby. Total employment in PNG is about 600 and could involve a degree of 'fly-in'.

Oilsearch/Chevron/Exxon – of 1,050 permanent workforce, about 140 are expatriates with about 60 from Queensland. Composition of contractor workforce is not known.. Seat capacity to Moro per week is 36.

Lihir – not established. Seat capacity is 72 per week.

Ok Tedi – not established. Seat capacity is 108 per week but is believed to heavily involve carrying employees living at the site in and out for recreation and flight connections.

In addition, there are aviation company personnel based in Cairns who regularly operate in PNG. Total 'fly-in' workforce ex Cairns is probably of the order of about 300.

Cairns Presence/Links

There is a significant corporate presence in Cairns of mining and aviation companies operating in PNG.

Mining

- Barrick Gold have a workforce recruiting and organisation office in Cairns.
- Interoil have an administrative support office in Cairns

Aviation

- Airlines of PNG have a major support office in Cairns CBD for their PNG operations but also their Skytrans operations in Queensland.
- Regional Pacific who also operate in PNG as Hevilift have a major office, hanger and servicing facilities at Cairns airport.

Advanced Projects

There are a number of advanced projects in PNG of substantial potential significance.

Gas

While substantial reserves of gas have been discovered, there has been a question of how gas is transferred to markets.

The PNG/Queensland Gas Pipeline proposal has fallen through.

There are now well advanced proposals by Oilsearch/Exxon Mobil on the one hand and a group in which Interoil is a major partner on the other hand to both build pipelines to Port Moresby for Liquefaction Plants to process the gas into liquid natural gas (LNG).

The most advanced appears to be that of Interoil group, Pacific Gas, whose gas reserves are at Elk in eastern Gulf Province.

Construction of the Interoil LNG plant will involve expenditure of $US 5 – 7bn, a workforce to peak at about 5,000 of which it is expected only about 1,700 will be local and the remaining 3,300 will be 'fly-in'/'fly-out'.

On-going workforce is expected to be about 300 – 400 with 50 local rising to 95% local in 10 years.

Construction is expected to commence late 2008 with shipments to commence in late 2011.

Apart from the construction work itself, there will be major work involved in building accommodation and back up facilities for the workforce.

This represents a major opportunity for supply of workforce out of the Cairns area.

Discussions with the company indicate there will be four levels of workforce.

1. **Management**

   Much of this will be drawn from around the world. Bechtel will construct the plant and much of the management will be regular employees, mainly from USA, Europe, Canada and Australia. Many will live in PNG for the duration of the construction period. There may be an opportunity for some to live in Cairns and commute.

2. **Supervisors including Trainers**

   Bechtel will have some of their own staff in their own field who they will bring in.

   They expect to draw out of Australia in this field. Cycle for North West Plant was 5 weeks on, 1 to 2 weeks off.

3. **Skilled Workforce**

   There is a very limited pool in PNG (estimated 50,000 many employed in mines already). Most will need to come from outside.

4. **Non-Skilled Workforce**

   Most of these will be PNG Nationals.

There will also be a need for office support staff logistics personnel.

There will be major needs for training Nationals in fields like welding, painting, rigging, etc. and fields like safety and medical support.

There is pressure on the company to base as much workforce in PNG as possible and it will be important for local companies wanting to do business to preferably have a PNG office with a prominent presence, even though some of the staff may come in and out by air.

The Cairns Chamber of Commerce might play a role in helping facilitate this.

The Exxon Mobil LNG plant will also be in the Port Moresby area with pipeline feed from the Southern Highlands and be of similar perhaps larger size (estimated cost $US 10bn), Front End Engineering Design is scheduled for early 2008 and first LNG sales in mid/late 2013.

The construction workforce is expected to be even larger rising from 1,000 in 2009 to 7,500 in 2011. It is estimated that of this workforce, only 20% will be able to be recruited locally implying a peak expatriate demand of 6,000.

Thus, peak demand for expatriates from the two projects could reach up towards 10,000 depending on timing.

There is likely to be a large demand generated for training of Papua New Guinea Nationals. One company is already sending Nationals to Australia as far south as Melbourne.

There could also be an opportunity to bring Nationals down for TAFE level training and perhaps university level.

There could also be a demand generated for use of Cairns hospital as a secondary provider.

The demands for professional staff could lead to some settling in Cairns to expand the pool of people at this level in Cairns in fields like administration, logistics, finance, human resources, but the demand form the construction phase will be of limited duration.

Associated developments in the offing are two other plants:

Petrochemical plant (methanol/DME)

Ammonia/Urea plant

both in the Port Moresby area.

Mineral Projects

Major potential mineral projects are as follows.

Wau Bulolo Area

Harmony's Hidden Valley/Hamata gold and silver mine (in the Edie Ck/Wau area), air access via Bulolo, involves a capital expenditure of about $0.5m and expected annual production of about $250m a year. The mine is under construction and expected to be operational by March 2009. It is believed that some charter services may have already commenced ex Cairns to Bulolo.

Harmony's Wafi gold copper prospect to the west of Bulolo is under exploration but with no development program yet announced.

Madang/Ramu Valley

Marengo Minings Yandera Copper Molybdemur project, south of Madang, is at prefeasibility study stage.

Highlands Pacific Ramu Nickel and Cobolt project, 75km SW of Madang is subject to a joint venture agreement with Chinese interests. Feasibility studies have been carried out but no construction timetable has been identified.

Highlands

Madison Minerals Mt Kare Gold prospect next to Porgera is highly promising but no definite development proposals have been identified . Like Porgera, access seems likely to be via Mt Hagen.

Highlands Pacific/Xstrata Freida River deposit is a major prospective copper and gold project to the north of OkTedi on the northern side of the ranges in the Sepik's headwaters. No definite development plans have been identified, but the company has been active in talking to potential suppliers of services.

Barrick's Kainautu Gold prospect is next to its existing Porgera mine.

Lae Seaport

Lae is PNG's largest seaport and industrial centre and PNG's second largest city. The proposed $154m upgrading of Lae seaport has a projected completion date of 2012.

Port Moresby/Central Province

Laloki – There is exploration activity taking place at the old gold mining area at Laloki, north of Port Moresby by McMin Silver, Mt Zion Minerals and Niuminco.

Frontier Resources' Kodu open cut copper gold Molybdenum prospect is close to the historic Kokoda Track and subject of controversy. It is 55km north east of Port Moresby with deposits reported as having a value of $10bn.

Islands Area

New Guinea Gold's, Imwauna prospect at Normanby I is still subject to exploratory drilling with no development timetable identified.

BDI Minings Woodlark I Gold prospect is reported to be a prospective $80m a year mine with a 5-year mine life. A feasibility study is being prepared.

Nautilus Minerals Solwara (Pidgin for salt water) prospect is a massive sea floor copper, gold, silver and lead deposit in 1600 metres of water to the north of Rabaul. Development activities are expected to commence in 2009 with first concentrate sale in 2010 from an on-shore processing facility.

Allied Gold's Simberi Oxide Gold prospect north of Lihir is a smaller gold mine due to come into production in 2008.

Future Air Services

The major opportunity relates to construction workforce needed for the two major LNG projects near Port Moresby and the associated boost this will give to construction activity in Port Moresby.

There could be a need to bring in thousands of 'fly-in'/'fly-out' construction workers for up to five years, and for airline capacity between Cairns and Port Moresby to be boosted.

Other further research in air services might be specially targeted at:

- Harmony's Hidden Valley mine at Bulolo.
- Allied Gold's Simberi Oxide gold project.
- Lae.
- Nautilus' Solwara project off Rabaul.

It is also possible that the further development of Interoil gas operations exploration and extraction operations in Gulf Province could reach a level where direct services out of Cairns were developed.

Implications of the foregoing for a strategy include:

a) *There is a major opportunity developing for supply of services to PNG, especially the major LNG construction projects developing around Port Moresby.*

b) *Supply of services into PNG involve a different pattern to those into mines and projects in northern Australia. The PNG Government wishes to maximise use of Nationals. This is mainly possible at lower skill levels. The emphasis of provision of services is thus at higher skill levels including provision of training and supervision. (However, the workforce demand for the LNG projects will involve moving down the scale into 'fly-in' of skilled trades persons)*

c) *It seems to us that the differences in dealing with PNG require establishment of a special response effort.*

d) *Any special response effort needs to be sensitive to PNG national interests, and coordinate with the Australian/PNG Business Council and the Queensland/PNG Business Council and involvement of those companies operating in PNG but with a strong corporate presence in Cairns.*

e) *Although the LNG project will dominate opportunities in PNG, sight should not be lost of the other significant mining and industrial projects.*

f) *The Cairns Chamber of Commerce should consider how it might facilitate Cairns' companies establishing a presence in PNG.*

4.10 EASTERN INDONESIA

Area Covered

We have listed 11 operations in an area which is confined to:

- Papua Province
- Halmahera (Maluku)
- Sulawesi (Makassar)
- The eastern section of the main line of islands including operations at Wetar off East Timur and one large operation on Sumbawa Island east of Bali and Lombok with Australian links.

These are operational or mines in advanced stages.

There are further mining operations taking place further west. Of these, those probably of most interest and not listed above would be the gold and coal mining operations in eastern Kalimantan (Borneo), mainly accessed via the long standing oil producing centre of Balikpapan.

Existing Services to the Area

There is a sharp contrast in the level of service into this area between the most easterly, the Freeport-McMoRan Indonesia's giant Grasberg mine in Papua Indonesia and the others.

Cairns has dominated Australian services to the Freeport mine since about 1975.

Freeport-McMoRan Indonesia's buying agent, International Purveyors, is located in Cairns and employs about 26 persons. They assemble cargo from throughout Australia by rail and road (road has probably become more important in recent years).

Their ship, the Java Seas. departs Cairns for the mine's seaport every 10 days. The cargo carried is 'general cargo' ranging over a great many items most of which are purchased from outside the Cairns region.

Total cargo shipped is about 50,000 tonnes with a value of about $300m. Amount bought locally has been estimated in the past to be up to $90m. The $300m represents about 40% of total general cargo purchased for the Freeport operation, the rest coming from within Indonesia and Singapore.

After switching air services to Darwin for a number of years, Freeport returned to Cairns about 12 months ago. Currently a service is operated by Airfast Indonesia with aircraft leased by Freeport every Monday and every 2nd Thursday. This replaces the services to Australia that were operated out of Darwin for a number of years.

The following seeks to identify why this pattern exists.

Freeport Indonesia

The first thing to recognise about Freeport Indonesia is its far eastern location at Tembagapura in Papua Indonesia, in a location that is east of Darwin in relation to shipping services.

Although the air distance to Cairns is more than to Darwin, it is not that much more. The combination of factors of:

- The buying base being in Cairns.
- Cairns' domestic and international connections being superior.
- Cairns R&R facilities being better.
- Cairns' range of air transportable goods and service personnel being superior

has won the Freeport services back.

The second thing that should be noted about the Freeport operation is its sheer size. It is the biggest copper and gold mine in the world. Value of production is about $5bn per annum. The operation involves mining and processing 300,000 tonnes of ore a day.

The company has a workforce and dependents of 21,000.

It is also a permanent mine. The current mine has a further 35 years to operate and a vigorous exploration program is underway that is likely to see mining continue in the area beyond this time frame.

The scale and permanence of the operation means that workforce is permanent and not heavily on a 'fly-in' basis.

The workforce is almost entirely Indonesian including a program of employment of Papuans. Only 400 to 500 are expatriates. Increasingly, the project has on-site support facilities and specialist staff.

Given the sheer size of the operation however, it generates about 80,000 air passenger movements a year. It contracts with Airfast to handle much of this traffic, mainly through daily flights from Jakarta, through Surabaya and through Makassar.

Another factor that affects operations in the area is remoteness from other development and infrastructure. This applies to almost all mining in eastern Indonesia and PNG, except those mines close to major centres.

Compounding the remoteness factors are security fears in these areas that restrict travel to mines by vehicle from regional centres. It usually means that travel is direct into the mine area and travel is restricted to company or company approved personnel.

The aircraft that comes to Cairns is a 144 seat MD82 and mainly carries company personnel moving to and from the mine, contractor and service staff, and R&R traffic to Cairns.

The aircraft is leased by Freeport who in turn contracts with Airfast Indonesia to operate it. It carries only company traffic.

Although Garuda fly from various parts of Indonesia to Timika and there is a hotel at Timika owned by Freeport and operated by Sheraton, access to the mining operations is by invitation only.

Other Mines

By comparison, the other mining operations identified, are further west. Cairns' competitive position as a service centre vis a vis Darwin is poorer.

The possibility of using the shipping and air services from Cairns to Freeport as a stepping stone to servicing other Indonesian mines has been explored.

Airfast specialise in servicing mines and also has services to:

- Tangguh gas fields (where a 2 'train' British Petroleum LGG plant is almost completed),
- Gosowong (Halmahera) Newcrest Gold mine,
- Manado in North Sulawesi, a resort town, but close to Archipelago Resources' Toka operations is under construction at Tindung, and
- Balikpapan in eastern Kalimantan (Borneo) near to gold and extensive coal mining operations.

However, Freeport's policy is not to have non-company usage of its aircraft or its ship and possibilities of using Freeport as an access point into the Indonesian transport system is not possible unless Freeport changed their policy. Apparently, they have been approached to do this by various parties. Given their size and the fact that they can get full utilisation of their aircraft and ship, it is probably not worth the bother to them.

Possibilities of gaining dedicated shipping to the other mines seems slim. (The Chamber did have an unsuccessful attempt a number of years ago when the new Newmont BatuHijau mine was being established.)

Implications of the foregoing for a strategy include:

a) *Freeport is of significant importance to the Cairns' economy and especially to its role as a general cargo seaport and every effort made to ensure that it maintains Cairns as its Australian buying base.*

b) *There is a need to explore transport links to service other mines and centres in eastern Indonesia either through:*

   - *convincing Freeport to allow non-company traffic on its sea and air services destined for other mines and centres.*
   - *developing links via Darwin especially to those mines further west, perhaps in cooperation with the Northern Territory Government.*
   - *developing direct air links into the Indonesian system, possibly via centres in Papua Indonesia that might include a tourism and general business element.*

4.11 SOME OVERALL IMPLICATIONS FOR A STRATEGY

Implication for a strategy arising from the foregoing analysis by areas include the following.

The study area can be divided into a series of zones of competitive advantage.

ZONE A Closest Major Centre

- Cairns Area.
- Peninsula Area.
- North West (north of Mt Isa).

Comment

Cairns dominates 'fly-in' services in this area except the area north of Mt Isa where land transport factors favour links with Townsville and there is some penetration of Townsville based air services.

Townsville services also penetrate into the southern part of the Cairns area. The Cairns area's competitiveness in this area, especially on the southern margins, can be enhanced by promoting the nearby Tablelands area as a workforce centre.

The strategy needs to be a regional one.

ZONE B Relatively Close, but not Closest major centre

- North West (Cloncurry and south of Mt Isa).
- Eastern Northern Territory.
- PNG.

Comment

Cairns competes in these areas against Townsville, Darwin and Port Moresby. Services have been commenced to Cloncurry, but not to the mines south of Mt Isa. Cairns has long established links with Gove. Services to Groote seem to be returning. It is currently losing services to the McArthur River area, but gaining them to Groote.

In Papua New Guinea, services run into 4 mining centres with a fifth probably on the way.

Cairns' competitive position throughout these areas is heavily linked to its superior air hub position and ability to attract traffic other than 'fly-in' workforce, including on-site worker R&R.

There are two massive construction projects in the form of LNG plants coming up near Port Moresby that have the potential to provide large scale opportunities during the construction period.

"Fly-in' services, especially to the NT and PNG mines but also to those in the north west face 'political' issues and there is a need for the Cairns region to have good relations with government structures in those areas.

ZONE C Relatively Close, but Mines Very Close to Another Major Centre

- Townsville/Charters Towers.
- Mackay region.

Comment

There are excellent air links with Townsville.

Possibilities of drive-in/drive-out to mines in this area from Townsville and Charters Towers and the relatively small size of mining in the area means that extra services ex Cairns to Charters Towers or the individual mines are not likely to be viable.

In the case of the Mackay region however, mining activity is much larger and growing rapidly. Most 'fly-in' labour is coming out of Brisbane to Mackay and via direct services to Moranbah. Cairns' current links are via Townsville and the possibility of direct links into Mackay could be looked at, including possible residential and visitor traffic from Mackay to link with international servicing from Cairns. First step of gaining more direct access to Moranbah would be to establish a service from the north – Cairns/Townsville – Moranbah.

ZONE D Distant Mining Activity

- Darwin Area.
- Kimberleys.
- Alice Springs, Tennant Ck, Tanami.
- Pilbara.
- Eastern Indonesia.

Comment

Cairns' potential competitive position in the Darwin/Kimberleys area stems from it being closer as a source of supply than the major metropolitan centres including Perth. There are excellent services into Darwin and strong traditional tourism synergies with Darwin and increasingly with the Kimberleys/Broome area.

Strategy in this area would be to encourage mines/labour supply firms to look to Cairns as an alternative supply centre to the major metropolitan centres.

Cairns has excellent air services into Alice Springs. Mining is not strong in the area and Adelaide is a competitive source, although developments in that State (Olympic/Roxby), are making heavy demands on existing supply of workforce in South Australia. Strategy would be simply to draw attention to Cairns' proximity.

Cairns' competitive position in the Pilbara is not strong. However, the sheer size of demand in this area makes it of some interest to include in the strategy.

Cairns' superior international gateway, R&R strengths, and location of Freeport's Australian buying base has led to Cairns regaining air services to Timika. The strategy in Eastern Indonesia needs to be one ensuring Cairns holds on to Freeport's Australian buying base and of finding more direct transport routes into other mines in the area.

5. STRATEGY DEVELOPMENT

5.1 FUTURE DEMAND FOR MINING & INDUSTRIAL PROJECT WORKFORCE & THE CAIRNS AREA'S POSITION

In a recent statement in the media, the Australian Mining Industry Council estimated that the scale of mining development coming on-stream would require an extra 70,000 workforce in the mining sector by 2015. Mineral exploration has been skyrocketing and there are indications that world economic growth will see this scale of growth in demand continuing beyond 2015.

The majority of this workforce growth is likely to take place in northern Australia.

Adding to this is an expected major growth of mining and associated activity in Papua New Guinea and in Eastern Indonesia.

This equates to the results of this research.

In the northern Queensland regions, prospective increases in mining company workforce demand in projects in an advanced state and likely to come on stream in about a 5-year time frame has been estimated as follows compared with existing levels.

	Estimated Existing	Estimated Additional	Estimated % Increase
Cairns/Tablelands	700	600	86%
Peninsula	900	1,000	111%
North West	6,600	2,000 *	30%
Townsville/Charters Towers	1,200	500 *	42%
Mackay	9,000	2,600 (1)	30%
Total	**18,400**	**6,700 ***	**36%**

* Includes some uranium projects dependent on approval of uranium mining.

(1) Note: Estimates of additional mining activity in the Mackay area are growing by the month and actual expansion seems likely to far exceed this figure.

The two major LNG projects near Port Moresby alone are talking about an expatriate construction workforces need peaking towards 10,000 in this time frame. Other new mines are under construction or likely to be brought on stream in PNG, although Ok Tedi is likely to wind down in this time frame.

Major expansion is likely in the Northern Territory on-shore and off-shore in the Pilbara and Kimberleys in Western Australia and in Eastern Indonesia.

All the indications are that this expanding workforce need will be met increasingly on a 'fly-in' basis. The industry already struggles to attract major workforce and especially skilled workforce to mainly remote underdeveloped locations.

The research indicated that even those large long-term mines with a substantial local residential capacity were finding it difficult to attract staff and were having to turn to 'fly-in' workforce.

In recent decades, the mining industry has not been a large contributor to the Cairns/Far North regional economy. However, that has been changing rapidly.

By the early 2000's, the region had got down to a mining company employment of about 700. That has already changed to now be running somewhere about 1,500. Kagara Zinc alone now employs about 600 people (about 450 within the region).

The indications are that new and expanded operations will take mining company workforce in the immediate Cairns/Tablelands/Georgetown area and the Peninsula up by about 1,300 over the next five years or so, to about 2,800.

A significant part of this increasing workforce demand will need to be met on a 'fly-in' basis.

However, the region is in a special position to meet wider needs for expanded mining and associated workforce demand across northern Australia and to the immediate north.

The Cairns/Far North Queensland region is now the most populous in the north, with the largest overall workforce (especially non-government).

In this wider regional context, it offers excellent lifestyle and service advantages for families and an ability to attract and hold population.

Cairns is the major air hub in northern Australia with a large, flexible and competitive aviation sector.

Although its own regional mining activity is not as strong as some other regions, it is located in a strategic position to service mining activity in northern regions of Queensland, Northern Territory, Papua New Guinea and across to Western Australia and Eastern Indonesia.

Not surprisingly, this has already given it a significant role in providing air services to service mining activity in this wider area.

The region has already expanded its role in this field compared with about five years ago.

There are services out of Cairns (including some from Mareeba and Innisfail) to some 18 destinations that are to/from mines or heavily mining related, approaching double the number 5 years ago with increases especially to centres in PNG and North West Queensland. These services account for about 4,000 seats a week. Most of this caters for 'fly-in' mining workforce but some especially from Papua Indonesia, some PNG mines, and places like Weipa and Mt Isa, includes R&R, general business and air services connector traffic. This makes Cairns the leading hub in the north for mining services traffic, although Townsville with services to 8 centres may lead in number of seats for 'fly-in' workforce as opposed to other types of mining centre related traffic. Mackay and Moranbah airports handle large volumes of 'fly-in' workforce for the Central Queensland coal fields, especially from Brisbane.

Current estimated workforce living in the region and flying into mines is estimated at about 2,100 (200 to mines in the region and 1,900 to mines outside the region).

There are good reasons why the Cairns/Cassowary Coast/Tablelands area can and should pursue an expansion of this type of employment opportunity.

It can pursue this type of employment opportunity:

3) Because of the size of its population and workforce, and its desirability as a place to live in the context of northern Australia.
4) Because of its strategic position and airport hub role.

It should pursue it:

3) As an opportunity to continue the diversification of the regional economy.

4) Especially over the next few years, at a time when there are negative pressures on tourism and local construction activity.

To achieve success in expanding its role in this field, there will be a number of avenues that will need attention that both come out of the area's relatively low level of recent mining activity, including:

a) Workforce development and training.

b) Marketing to overcome perceptions about the size and suitability of workforce available from the region.

A successful program of promoting 'fly-in' activity could see total employment in mining within the region conservatively rise to about 8,000 composed of 3,200 at mines within the region, 1,900 currently flying into mines outside the region, and 2,900 additional.

5.2 SUPPLY SIDE & TRAINING ISSUES

There is some truth in the perceptions that Cairns is not a suitable centre for recruiting mining workforce, that its workforce (especially its tradesmen). have limited mining experience and come from farming, fishing and tourism backgrounds rather than mining and heavy industry backgrounds.

As commented on below, in comments about marketing the region, this common perception grossly overstates the position.

However, it underlines the importance of a concerted effort to make workforce not previously engaged in the industry, mining industry ready.

This became obvious relatively early in the study and the question of training and qualifications was pursued with personnel suppliers and mining companies, and information collected an existing and developing training initiatives.

At State level, the Mining Industry Skills Centre is addressing issues of mining training and the Australian Mining Industry Council supports the ARAMS (Australian Regional Agricultural and Mining Skills) program.

Understandably, given the relatively limited mining activity in the region in recent years, training for the mining industry at local TAFE level has not been strong.

Private training takes place through organisations like Dawson's Engineering and Australian Drilling Institute (ADI), and there are some private individuals involved in specialist fields. However, there does not appear to be the same extent of private providers that has developed in Townsville.

The Mining Industry Skills Centre lists 20 Generic Induction Training Providers in Queensland. Only one, the Australian Drilling Institute, is located in Cairns.

The need to increase training activity for the mining industry is already being recognised and Queensland Department of Mines and Energy (DME) who, with the Indigenous Coordinating Council (ICC), organised a seminar on the issue in March that attracted 78 attendees, including 17 mining and exploration companies. (Key organiser, Tom Saunders, DME, Mareeba). A report is due shortly.

Moves are underway to develop a Mining Industry Skills Centre at Mareeba High School.

Various suggestions were made in the course of the survey ranging from adult apprenticeships in the field through to development of a full Mining School.

One avenue to develop training in the area for plant operators would be to have a simulator located in the area. Consultation with major equipment suppliers indicates that entry level simulators are anywhere between $8,000 and $30,000 and some mining companies have simulators costing up to about $500,000.

There is a special opportunity developing to train workforce from remote indigenous communities. Companies like Century have moved a long way in this direction.

It was also identified that PNG mining companies were sending PNG Nationals as far south as Melbourne for training. It is suggested that Cairns' training institutions, including the TAFE and James Cook University, could play a key role in meeting burgeoning requirements for mine workforce and construction training for PNG Nationals.

5.3 MARKETING THE REGION

5.3.1 General

It was clear that Cairns is not perceived as a serious source of mining industry workforce and services by many involved in the industry and that the workforce available is not suited to work in mines.

The key decision makers to target are mine managers and HR managers. The Cairns Chamber of Commerce has already recognised this and instituted an effective program of rectifying misconceptions through its Amateur's Racing Event program. Some of those interviewed who have been involved commented favourably on the initiatives already undertaken.

This needs to be at the core of any continuing marketing program.

The Chamber has also embarked on a program of wider involvement in the industry through participation in mining conference activities/trade shows in Mt Isa and Townsville and production and distribution of brochures on Cairns' capabilities.

These initiatives also need to be sustained as a minimum.

5.3.2 Primary Area of Engagement

Area of primary engagement needs to be in the arc of five major contiguous areas around Cairns (see Map 9).

Local mining companies in what we have defined as the Cairns area

There were some suggestions that needs of companies operating in this area in relation to workforce and infrastructure was not receiving the support from the Cairns Chamber that it might. It was surprising to find that even nearby mines were also drawing workforce out of Townsville and that new mines were undecided about whether to draw workforce out of Cairns/Tablelands or from Townsville.

Aus IMM (Australian Institute of Mining and Metallurgy) provides a focal point for these mines and mining personnel in the area to meet together.

It represents a potential special engagement point with the local industry in the Cairns area.

Peninsula Mining Companies

Cape Flattery and Skardon River both have offices in Cairns and can almost be treated with the local company group.

The lack of engagement with Rio Tinto Weipa seems to be a matter for concern.

Contact is necessary with the new players coming into the area, especially Chalco, and Cape Alumina.

North West Qld Mining Companies plus those in the Eastern Northern Territory

This needs to be the major area for marketing of Cairns as a 'fly-in' source of workforce. In this area, Cairns faces competition out of Townsville and Darwin. However, the increasing threat is direct services out of Brisbane.

Map 9 – Areas of Primary & Secondary Engagement

The Mackay Region/Townsville Charters Towers Area

The Townville/Charters Towers area seems unlikely to generate a demand for 'fly-in' services ex Cairns, although some Cairns' workforce might find jobs in that area.

However, the Mackay region coal fields' requirements are so large and with such a large workforce expansion underway that they could be a future area for workforce sourcing out of Cairns. They have a second attraction for Cairns. The area has a reputation for taking 'green' workforce. It can be used as a stepping stone into other areas.

For exploration of possibilities, it will be important to select companies (or their contractor operators) who are heavily committed to 'fly-in' as opposed to residential workforce.

'Fly-in' airports available are Moranbah and Clermont.

The major 'fly-in' source in this area is Brisbane and flights ex Cairns could possibly bracket with Townsville.

Papua New Guinea

Marketing in this region needs to be targeted at two levels:

1) The major short-term opportunity provided by the construction of the two large LNG projects at Port Moresby.
2) The other existing and new mines coming on stream.

The Cairns Chamber needs to urgently set up a special response to deal with (1) above to handle contact with:

- the two major proponent groups linked to Oil Search and Interoil and their prime contractors (eg. Bechtel for the Interoil linked group),
- the two airline operators (Air Niugini and Airlines of PNG), and
- key organisations like the Australian PNG Business Council, Australian and Queensland Governments and liaison with the Port Moresby Chamber of Commerce.

In the process of the study, we have had contact with the key personnel in both groups. They are both keen to interact with Cairns to help them solve their problems. This contact needs to be sustained and expanded.

The 'Amateurs exercise' could usefully be expanded to include the other PNG mines. The "pitch" to these mines needs to be a bit different. 'Fly-in' operations are supplied by each of Air Niugini, National Jet and Airlines of PNG if assistance is needed in bringing mine staff to Cairns.

5.3.3 Secondary Area of Engagement

Marketing to the other mines covered in this report falls into three areas:

1. Indonesia.
2. Northern Territory/Kimberleys area.
3. Pilbara.

Marketing in this area is of lower priority (except for Freeport Indonesia) and tends to be one of simply drawing attention to the possibility of the area as a supplementary supplier of services.

Indonesia

The key marketing requirement is to look after and hold on to Freeport's Australian buying base in Cairns and if possible get them to allow the use of their existing air and sea services as a stepping stone into other Indonesian mines.

There are severe limitations in the type of 'fly-in' services that might be supplied out of Cairns.

Some material sent to the other mines in the area could be aimed at just placing the Cairns area 'on their radar screen' as a back up to services offered out of Darwin and with a heavy emphasis on R&R and wider air connections from Cairns.

The main emphasis in establishing contact with these mines needs to be to find ways of getting more direct transport access, which is addressed in the next Section 6.4.

Northern Territory/Kimberley Area *(excluding Eastern NT mines)*

In the Alice Springs and Tennant Ck area, it would be more a matter of keeping an eye on any developments that might be of a scale that required substantial 'fly-in' of workforce. If this occurred, such mines might be treated in a similar way to the eastern Northern Territory mines.

In the Darwin/Kimberley area, marketing should simply be aimed at drawing attention to Cairns as a potential supplier of workforce supplementary to Darwin and closer than the southern metropolitan centres.

There is a need to engage with the Northern Territory government and industry.

Pilbara

This area is of interest simply due to the sheer extent of demand and possibility of using it as a stepping stone for 'green' workforce.

The objective of marketing in this area would be simply to draw attention to Cairns as a potential supplementary supplier to Perth, that is in a quite good flying distance range compared with the major eastern metropolitan centres.

5.3.3 Other Marketing

If the Cairns area is to increase its role in this field, it will need to supplement its direct marketing to key mining staff with marketing in three other directions.

Community Marketing

There is a need to market the potential for jobs in this field within the community itself, to encourage local workforce to acquire the requisite qualifications and consider it as an employment alternative.

The release of this report and findings, and generation of news stories and comment in local media will assist.

Attracting Workforce to Locate in the Cairns Area

The growing opportunities in this field can provide a further opportunity for Cairns to attract families and individuals with suitable qualifications and backgrounds to shift to the area. Built around this report some follow on news stories might be generated in the national media that draw attention to the opportunities Cairns presents.

In this, the Cairns Chamber probably needs to coordinate with other groups in the community who generate national stories like Councils and Advance Cairns.

Campaigns conducted by other regions might usefully be reviewed.

Campaigns conducted by other regions might usefully be reviewed.

Corporate Attraction

The following is a list of mining companies with a significant corporate presence in Cairns or the Cairns area.

- Cape Flattery Silica
- Skardon River Kaolin
- Barrick Gold
- International Purveyors (Freeport Indonesia)
- Interoil
- Vital Metals (Mareeba)
- Kagara Zinc (Mt Garnet)

A marketing program to attract mining companies to establish a corporate presence in the Cairns area might be undertaken. Key current targets might include Oil Search, Harmony, Lihir Gold, and Chalco.

5.3.4 Other Action

One of the key on-going requirements if a marketing program is to be sustained is to recognise that this is a very dynamic and changing industry. Even during the course of this study, changes in corporate structures, personnel and plans were challenging to keep up with.

There is a fundamental need to have an on-going program just to keep breast of developments taking place. The existence of the "*Mining Advocate*" is very helpful in relation to northern Queensland and the Northern Territory. The publication "*PNG Resources*" fulfils a similar role for PNG and needs to be subscribed to. However, resources need to be devoted to just keeping well informed about what is happening in the sector.

The study identified the 'epilbara' initiative in the Pilbara area in the form of website to assist mining companies operating in the Pilbara to draw on from local sources.

5.4 POTENTIAL AIR SERVICES

As observed in Section 3.5, aviation capacity based at Cairns Airport is superior to any other centre in the north. There is a suitable range of existing operators who are willing and able to respond to expanding mining industry service requirements across the study area. There seems to be no need for any special action to build up or attract aviation capacity.

PNG

There is likely to be a need for a major expansion of capacity on the Port Moresby route. If the Cairns area does not respond to make itself an Australian major supply part to these projects, it runs the risk of additional services developing especially out of centres further south.

Potential additional direct mine services to be explored are Harmony (Bulolo) and Oil Search (Elk in the Eastern Gulf), Solwara (Rabaul). However, there is scope to engage with each of the existing mines (such as Tolokuma) and prospective new ones.

Peninsula

Additional services are likely to develop to service Weipa expansion and to service Chalco and Matilda Minerals either direct or via Weipa.

North West/Eastern NT

Gemco at Groote have called tenders ex Cairns to service their mine expansion.

Although McArthur River Cairns services are due to cease, contact needs to be retained with the company as the policy of drawing exclusively ex Darwin may not be able to be sustained.

Prospective additional direct services to North West Queensland mines are Dugald River, Lady Annie/lady Loretta.

The mines south of Cloncurry, Cannington, Osborne and Phosphate Hill might be encouraged to establish Point of Hire ex Cairns and establish direct services.

The major question in this area however, is increasing capacity in competition with Brisbane into Mt Isa and especially into Cloncurry around which substantial new mining is showing signs of developing. Sky Airworld have recently moved to pursue this opportunity with extra services linking Cloncurry with Cairns and Brisbane.

Cairns Area

New charter services are likely to develop into the Georgetown area to Einasleigh (Copper Strike) and Agate Ck/Kidston area (Rennison).

Mackay Region

The Cairns area needs to explore the possibility of achieving direct flights into Mackay and direct or via Townsville to Moranbah and/or Clermont.

Outer Area

Mining development in the Alice Springs and Tennant Ck area could have the potential to increase traffic on existing Cairns/Alice Springs flights. Nothing prospective seems big enough to generate direct flights at this stage.

Mining development in the Darwin area, Kimberleys and Eastern Indonesia has the potential to generate additional traffic on Cairns/Darwin Flights.

The massive demands of the Pilbara have the potential to increase traffic on Cairns/Perth, Cairns/Ayers Rock w/Perth and Cairns/Darwin/Port Hedland/Karatha flights but it is difficult to see direct flights ex Cairns developing at this stage.

The possibilities of developing further links with mining and other centres in Eastern Indonesia, especially Papua Indonesia, need to be explored with local and possibly Indonesian aviation operators.

6. ACTION PLAN

6.1 POLICY

The Cairns Chamber of Commerce representing the Cairns region business community needs to:

- Recognise that 'fly-in' services to mining represents an opportunity over the next five to ten years to expand the region's economy, and
- Pursue a major program aimed at expanding the area's capabilities and participation in this field.

6.2 ORGANISATION

6.2.1 Continuation of Task Force

The Cairns Chamber of Commerce needs to continue its Resources and Industrial Task Force initiative and expand its focus.

6.2.2 Special Need to React to LNG Project Opportunities

The urgent need to engage with the two major LNG projects in Papua New Guinea could make it desirable for a special Working Group to be formed to target these projects alone.

6.2.3 Funding of Additional Staff Capacity

The Cairns Chamber needs to seek and allocate additional funding for increasing its staff capacity to back up its programs in this field.

6.2.4 Infrastructure & Industrial Development

There may also be a need for a special Working Group to be established in relation to infrastructure needs and industrial development opportunities and for special separate research to be mounted (see Section 6.7.2).

6.3 PROGRAM ELEMENTS

6.3.1 Four Major Elements

The Chamber's program in this field needs to be aimed at four levels:

1. Marketing Cairns as a source of 'fly-in' services to mines and industrial projects in northern Australia and the near north.
2. Attending to workforce supply side and training issues.
3. Liaising with the aviation sector re development of additional services.
4. Attending to infrastructure issues and industrial development possibilities from mining expansion in the region.

6.4 MARKETING CAIRNS AS A SOURCE OF 'FLY-IN' SERVICES

6.4.1 Engagement with Key Staff

There are a few key staff in each mining/industrial operation who are mainly responsible for decisions about where to source services from.

The Chamber's program of engaging with and educating key staff by bringing them to Cairns for the Amateurs Racing Carnival is highly effective and needs to be continued.

6.4.2 Industry Conferences & Trade Shows

The Chamber's participation in these is also effective and raises the area's profile, especially if it is a team effort with local supply firms coordinating their efforts under the Chamber banner. (TTNQ has been effectively taking this approach for the last 30 years in tourism promotion.)

Action in this regard has so far oriented to the Townsville/Mount Isa area and this needs to be a prime area of focus.

However, the program could be expanded to:

a) Develop/attract relevant conferences/trade shows to Cairns.

b) Target those relevant to the Mackay region.

c) Target Papua New Guinea mining conferences/events.

d) As a lower priority, target Northern Territory and Western Australia events.

6.4.3 Marketing Material

The Chamber has already attended to producing basic brochure material. Some of this may need to be modified to target:

a) Other Primary Engagement areas of Mackay region and Papua New Guinea.

b) Secondary Engagement areas.

6.4.4 Media Material

This report will help provide material for media generation which needs to be targeted at:

a) Local media briefing and stories.

b) Mining trade press including NQ and PNG.

c) General media in target areas and nationally.

It is desirable to also set up a capacity to sustain media stories aimed at increasing the pool of mine workforce (see Section 6.5 below).

6.4.5 Government/Regional Relations

There is a need for a good relations program with the Papua New Guinea Government and Northern Territory Government through bodies like the Australia Papua New Guinea Business Council, the new Office of Northern Development, and Queensland Government/Northern Territory Government liaison arrangements.

6.5 SUPPLY SIDE AND TRAINING

6.5.1 Training

The Chamber urgently needs to engage with the education and training sector (private as well as public) with a view to quickly ramping up the region's effort and capability in this field relating to supply of mining workforce.

6.5.2 Community Marketing

An information reference source needs to be developed through which people wishing to explore employment in this field can be informed of:

a) What is required by way of training and qualifications.

b) Where they can get information about potential jobs.

This could mainly take the form of a special website that can be advertised/referred in a media campaign to draw attention to expanding job opportunities developing in this field.

6.5.3 Attracting Workforce to Cairns

The main thrust of the marketing/media effort (see 6.4.4 above) should be to highlight Cairns as an area of increasing job opportunities in this field.

6.5.4 Corporate Attraction

Targeted material should be developed to present to targeted mining and contractor companies identifying the extent of mining corporate presence in Cairns and inviting those companies to consider setting up offices in Cairns.

6.6 AIR SERVICES LIAISON

6.6.1 Aviation Companies

The aviation sector based in Cairns has the capacity and will to react to opportunities presenting themselves in this field. It will be of value to inform them of the results of this study and keep them informed about developments taking place in the industry.

6.6.2 Indonesia

There is a special need to liaise with the aviation sector about the possibilities of developing additional services into Eastern Indonesia.

6.7 INFRASTRUCTURE NEEDS AND DEVELOPMENT OPPORTUNITIES

6.7.1 Infrastructure

Companies in the Cairns, Georgetown, Peninsula region and the North West Queensland area are looking for support in having infrastructure developed, especially power and roads, but also in some cases, port access. The Chamber could usefully engage with the relevant mining companies to ascertain their requirements and help focus attention on their needs.

6.7.2 Industrial Development

Some of the potential mining developments in the area could provide an opportunity to change industrial development prospects in the Cairns/Tablelands/Peninsula area. They need to be followed up and explored with the relevant companies, including the geothermal exploration, Almaden iron (magnetite), Mt Mulligan coal and coal seam gas, and possible availability of LNG by ship from Papua New Guinea.

MINING & INDUSTRIAL SERVICES OPPORTUNITY STUDY

Cairns/Far North Queensland

Appendix 1

CUMMINGS ECONOMICS

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26 February 2008

MINING & INDUSTRIAL PROJECTS
SERVICES OPPORTUNITY STUDY

Air Services

We have been asked by the Queensland Department of Tourism, Regional Development & Industry and the Cairns Chamber of Commerce Resources & Industrial Taskforce, to research and advise on opportunities to increase air services out of the Cairns area to mining and industrial projects in the wider northern Australia and adjacent Asia/Pacific areas.

As part of the process, we will be seeking to identify all significant projects in the area including those currently operating, being developed, and in planning stages.

We will seek to identify where they draw services from and the potential for Cairns to increase its role.

We also propose to explore with relevant labour/personnel supply agencies, opportunities and constraints from their perspective, and to explore possibilities with relevant people in the various projects.

Out of this, we will prepare an Action Plan for follow-up by the Department and the Chamber.

Aviation operators play an important role in this field and we would be grateful for your input.

Following is an outline of what we would like to discuss, preferably through a meeting with you or over the telephone.

Over the years, *Cummings Economics* has dealt with a great deal of information on a confidential basis. Please be assured of our sensitivity to and respect for commercial-in-confidence information.

Please feel free to discuss any aspect.

Yours sincerely

W S Cummings

ABOUT CUMMINGS ECONOMICS

Cummings Economics has been providing economic research services based in Cairns since 1981.

Principal of the firm, W S (Bill) Cummings, is one of Australia's most experienced regional business economists with formative experience at a national policy level in Canberra, and long and extensive experience of working in and analysing regional industries, economic structures and trends in northern Australia.

Further information www.cummings.net.au