DRAFT REPORT
MAP and GAP SUPPLY CHAIN STUDY

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1. Executive Summary

1.1 Scope of Work

Regional Development Australia (RDA) Pilbara and The City of Karratha (CoK) are working in partnership to produce a Map and Gap Supply Chain Study. The study is anticipated to build on and refresh an early piece of work entitled "Business Map, Gap and Supply Chain Research Project" undertaken in 2012.

The study within the local government area of the City of Karratha will investigate opportunities and target gaps in the local business market and leverage supply chain opportunities for local business.

Specifically the objectives are as follows:

a) Map & Gap - Investigate the existing business environment and determine potentials for new or under-represented businesses.
b) Supply Chain - Analyse existing supply chains across the various sectors and identify immediate opportunities to reduce barriers for local business, increase local participation in supply chains and provide for diversification.

The Study provides some critical key recommendations for action to improve local contracting and business opportunities, which have potential for jobs and investment growth.

The focus of the Map and Gap analysis was to look at the need for, and viability of, new businesses and also at the retention and growth of existing businesses, given the current economic conditions.

The approach encompassed the following:

1. Supply chain mapping – analysis of the supply chain linkages from the main economic drivers impacting business in Karratha.
2. Cluster mapping – description of the industry and service business clusters that have evolved, their relative size and contribution to the Karratha economy.
3. Trend analysis of the key sectors within the Pilbara and Karratha economy and the potential impact on existing businesses.
4. Assess consumer disposable income spending trends within the Karratha catchment and its impact on future growth of enterprises
6. Assess the business attrition rate within the Karratha area
7. Recommendations on how to support and grow existing business (e.g. constraints reduction, opportunity enhancement strategies)
8. Assess most likely areas for new business establishment and propose the enabling solutions required for such investment to take place.

1.2 Key Findings And Recommendations

The City of Karratha Economic Development Strategy states that:
To affect economic development our municipality has three instruments at its disposal:
- It can implement a project or activity that will have an economic development impact using its own assets or in partnership with another party or parties.
- It can facilitate economic development by creating a conducive regulatory or planning environment and,
- It can advocate for economic development by engaging with prospective investors (public and private) that may bring assets into the Municipality or lobby with the relevant authorities to enhance the necessary infrastructure.

The strategic focus of the City's Operational Economic Development Strategy is:
- Retaining Jobs: focus on ensuring that current employers in the local economy do not leave the Municipality.
- Creating Jobs: focus on the existing economic actors growing their operations and/or attracting new players into the local economy.
- Workforce Development: focus on creating opportunities for the existing workforce to have the skills and be adaptable to any changes in the local economic environment.

This study was grounded within this strategic approach and utilised a number of methodologies including economic research and modelling, online surveys and interviews with key stakeholders to arrive at its findings and recommendations. The evidentiary support for these is contained in the relevant sections of the main report.

The findings and actions presented below have been drawn up in the context of what the City of Karratha can directly invest in, coordinate or influence within a relatively short time horizon.

Theme	Finding/Gap	Action	Outcome	Timeline
Investment Opportunity				
	Karratha Visitor Centre provides a unique facility and tourist data source	1. Enhance landscape of Centre, 2. Increase range of facilities and services offered (including completion of those currently underway), 3. Broaden visitor research capability	▪ First & principal port of call for tourist visitors for information ▪ Tour operator promotion & administration services ▪ Cottage industry sales ▪ Informed knowledge of tourist profiles ▪ Increased self-sustainability of Centre	Over next two years
	Homemaker Centre Concept will fill a gap in retail market	1. Progress development of site and signing of tenants 2. Ensure one of the tenants is Bunnings (highest demand by residents)	▪ Wider retail offering and choice with potential for competitive pricing ▪ Employment opportunities for young residents ▪ Improved access to bulk products for tradespersons	Over next two years
	Tourism information signage and for points of interest requires considerable improvement to enhance the visitor experience	1. Complete overhaul of current signage aimed at visitors– i.e. Burrup, Historical Roebourne, Cossack, Murujuga National Park etc. 2. Improved roadside stopping and viewing points with information plaques at key locations,	▪ Improved promotion of the area ▪ Access and knowledge for visitors	Over next 12 months

		linked to also to Google maps		
	Provision of an Aged Care facility is beginning to show a demand from residents	1. Progress concept of aged care facility within the new health centre precinct	▪ Investment into the transformation of Karratha into a place of long term residency ▪ Recognises gradual changing of demographics ▪ Provision of a complete health lifecycle service ▪ Employment for service personnel in aged care industry	Over next three years
	Demand for increased and broader range of recreation facilities for teenage and young adults	Options: 1. Engage with Leisureplex as to possible provision of non-sport facilities for this demographic 2. Consider relevant facilities to be incorporated in new Arts precinct 3. Develop a cost benefit business case to attract private sector provision of appropriate facilities	▪ Social behaviour benefits ▪ Health and wellbeing benefits ▪ Employment opportunities for young adults	Over next 12 months
	Health services distribution requires consideration of equitable geographic access for residents in Roebourne, Wickham and Dampier	1. Review and assess demand and provision of consistent access to medical (GP) services in these centres in comparison to	▪ Community engagement enhanced ▪ Perception of non-equitable service ameliorated ▪ Improved service provision	Over next 12 months

		availability in Karratha centre 2. Engage with local community representatives, service providers and Rio Tinto and Woodside as to needs and resourcing		
	Tertiary Education facilities and services are below expectations	1. Progress concept of a shared-university course offering in Karratha (virtual and physical facilities) 2. Engage with resources companies and major public sector entities based in Karratha to ascertain future role and offerings for Karratha TAFE campus i.e. marine services, innovative technologies, sports and recreation, health sciences etc	▪ Enhancement of Karratha City in its education offering to residents ▪ Diversification of education services ▪ Attraction of young adults to remain in Karratha ▪ Employment opportunities enhanced ▪ Gradual development of centres of excellence	Over next three years
Policy and Programmes Opportunity	Procurement monitoring & support by all City of Karratha departments as is currently demonstrated by Strategic Projects & infrastructure	1. All departments to track local supply value in each contract 2. Contracts assessed as to likelihood of there been a local supplier 3. Guidance provided to	▪ Improve perceptions, local knowledge and supply conditions in relation to local business preferences for City of Karratha tenders and contracts	Within next 6 months (internal systems development)

		local businesses on a regular basis on how to bid for contracts 4. Written feedback provided to unsuccessful tenderers		
	Tourism, arts and recreation go hand in hand and could be better coordinated across all stakeholders	1. Intensive delivery of Events Coordination with the development of the Karratha Arts Precinct, and the new community centres in Dampier, Wickham and Roebourne 2. Coordinated approach to utilising local service providers for events 3. Early release of Expressions of Interest for event contracts to local suppliers	▪ Balanced timing and range of offerings to the wider community to avoid peaks & troughs ▪ Attraction of visitors from the Pilbara and possibly further afield ▪ Growth of local businesses in this sector has one of the highest employment multiplier effects	Within next 12 months
	Use regulatory and planning controls to create an enabling environment and support established businesses and services The City could potentially regulate the number and, nature of certain types of home-based businesses, to a	1. Research required before any policies are implemented that may have unexpected negative impacts	▪ Objective to develop policies and strategies that optimally manage the levels of home businesses, and also encourage and support such business to grow into established businesses	Over next 24 months

	sustainable level of supply thereby assisting established businesses.			
Engagement Opportunity	Business development services coordination requires enhancement, including in tender and contract knowledge support	1. Targeted business support services at specific growth sectors rather than broad spectrum offerings 2. Coordination of training/mentoring in tender and contract requirements by Business Development Service providers, City of Karratha and Resource Companies 3. Enhanced engagement with Aboriginal Corporations as to business and investment opportunities and coordinated implementation of business strategies	▪ Actively support Aboriginal business opportunities with a focus on young adult employment ▪ Actively support Arts, Recreation and Tourism sectors ▪ Actively support innovation development as key element of business incubation	Within next 12 months
	Cruise Ships as a new market opportunity	1. Engage with Pilbara Ports Authority, Tourism WA, KVC and Cruise operators to bring cruise ships to Dampier	▪ Encourages local markets and pop-ups ▪ Enhances Tour operator opportunities ▪ Significant revenue injection and employment	Within next 24 months

			for the region	
	Online shopping is now and into the future a core part of the Karratha retail market Online shopping is a significant trend within the City of Karratha – availability, price and choice key factors	1. City of Karratha in association with the KDCCI facilitate information and support sessions related to offering online shopping for established local businesses 2. Help existing businesses into online shopping – Link this to the 'Buy Local' campaign	▪ Transform online shopping from a threat to an opportunity for local businesses	Within next 6 months
	Encourage street markets and pop-ups to provide a market opportunity to cottage and micro businesses	1. Coordinated policy and programme supported by City of Karratha to encourage cottage industries and home businesses to offer their products to the wider community at clearly defined times and locations	▪ Increased vibrancy of Karratha through encouraging street market culture ▪ Grow local cottage industries ▪ Potential spin-off traffic for established businesses located near markets	Within next 24 months
	Regional approach required for services and policy affecting "grey nomads" as one of the largest defined visitor sectors	1. Collaborate with other municipalities and government departments to develop a co-ordinated regional Grey Nomad strategy 2. Focus on providing a balanced, value for money experience for a	▪ Avoid contradictory or competing polices that disrupt the market ▪ Minimise negative impacts ▪ Improve offerings with aim to encourage greater revenue spend in the local economy	Within next 12 months

		well-established visitor demographic		
	Economic growth opportunities in the resources sector (mining and LNG) will be in the value chain for goods and services at both construction and operational phases. With a solid local industry there are opportunities for Karratha-based businesses to expand to other areas. A common user facility for LNG and resources services hub have potential to be located in Karratha area.	1. Continued intensive consultation and coordination between City of Karratha, Landcorp, PDC, Pilbara Ports Authority and Resources sector	▪ Objective to create a regional service hub in Karratha area for the LNG industry and maximise industrial areas such as Gap Ridge	Over next three years
	Aquaculture, renewable energy, new strategic minerals and agriculture developments need to be constantly monitored with supporting infrastructure and services being promoted to locate into Karratha area	1. Consultation, coordination and investment promotion by the key stakeholders being City of Karratha, KDCCI, PDC and relevant State Government agencies	▪ New growth industries that have potential to deliver long-term economic diversification to the City of Karratha ▪ New employment opportunities for the young adult residents of Karratha	Over next 24 months

2. Economic Overview

2.1 Industry Sector Analysis

The industry sector analysis shows how the City of Karratha contributes to the wider economy. Table 1 compares the City of Karratha to Western Australia and shows Karratha as a percentage of Western Australia. The table shows that even though Karratha only makes up 2 percent of Western Australia's population, it still contributes 13 percent to the regions total exports. On comparison of 2009/10 to 2014/15 it is also evident that Karratha's exports have grown both in aggregate and percentage contribution of total exports. In the table it is also apparent that international exports are more important than domestic imports showing an emphasis on international trade and the importance of international markets. This means that Karratha will be directly affected by macroeconomic events and the changes in the markets of its main trading partners.

Table 1: City of Karratha Industry Overview

All industries - Constant prices	2014/15			2009/10		
Economic measure	City of Karratha	Western Australia	City of Karratha as a % of Western Australia	City of Karratha	Western Australia	City of Karratha as a % of Western Australia
Employment (total)	28,315	1,443,028	2	17,972	1,204,543	1
Exports ($m)	36,600	273,538	13	20,386	182,641	11
Exports (domestic) ($m)	12,878	137,199	9	5,280	92,122	6
Exports (international) ($m)	23,722	136,339	17	15,106	90,519	17
Imports ($m)	20,149	198,893	10	10,176	149,739	7
Imports (domestic) ($m)	16,229	149,853	11	8,440	112,798	7
Imports (international) ($m)	3,920	49,041	8	1,735	36,941	5
Local Sales ($m)	18,819	269,246	7	7,855	221,489	4

Source: NIEIR, economy.id and Imani Development, 2016

The industry sector analysis shows how each sector contributes to the local, domestic and international economy. Table 2 shows Karratha's imports and exports expressed as percentages, and is derived from Table 3. The table shows the contribution of domestic and international exports and local sales as a percentage of gross economic output.[1] Some industries are highly focussed on selling to the local population while others are export industries, so the mix between sales and exports can tell you about the nature of the industry in the area.

[1] Local sales plus the two components of exports equals the gross economic output or sales from that industry.

In Karratha most sectors focus on local sales. Local sales are the total sales from that industry sector to local residents, businesses and organisations located within the boundaries of the region. Karratha's leading export sector is mining. Mining contributes 63.4 percent to international exports and 33.7 percent to domestic exports. Domestic exports are sales of goods and services to non-resident households, businesses and organisations outside the local government area (LGA) or region boundaries, but located within Australia. International exports are sales of goods and services to non-resident households, businesses and organisations located outside Australia. Manufacturing is also an important source of exports responsible for 39.3 percent of gross economic output; however, 60.7 percent of production is for the local market.

Most of Karratha's imports are sourced from within Australia. The two exceptions to this are manufacturing and accommodation and food services, which import 48 percent and 32.1 percent of inputs from international markets respectively.

Table 2: Industry Sector Analysis – Percentage Contributions

	Exports			Imports	
Sector	**Domestic**	**International**	**Local Sales**	**Domestic**	**International**
Agriculture, Forestry and Fishing	10.5	8.7	80.7	97.7	2.3
Mining	33.7	63.4	2.9	95.2	4.8
Manufacturing	22.2	17.1	60.7	52.0	48.0
Electricity, Gas, Water and Waste Services	10.5	0.0	89.4	99.9	0.1
Construction	-	0.0	100.0	n/a	n/a
Wholesale Trade	4.0	1.0	95.0	99.8	0.2
Retail Trade	4.6	0.4	95.0	100.0	0.0
Accommodation and Food Services	5.0	6.9	88.1	67.9	32.1
Transport, Postal and Warehousing	11.9	3.1	85.0	97.6	2.4
Information Media and Telecommunications	5.7	2.1	92.2	95.4	4.6
Financial and Insurance Services	-	0.0	100.0	97.0	3.0
Rental, Hiring and Real Estate Services	1.7	0.0	98.3	94.9	5.1
Professional, Scientific and Technical Services	1.7	0.0	98.3	92.8	7.2
Administrative and Support Services	1.7	0.0	98.3	98.4	1.6
Public Administration and Safety	1.6	0.0	98.4	99.9	0.1
Education and Training	5.4	1.2	93.3	98.3	1.7
Health Care and Social Assistance	4.0	0.0	96.0	98.4	1.6
Arts and Recreation Services	3.0	0.2	96.8	98.1	1.9
Other Services	1.7	0.0	98.3	99.7	0.3

Source: NIEIR, economy.id and Imani Development, 2016

Table 3 shows the industry sector analysis for the City of Karratha. It shows employment figures for various sectors. Gross economic output is comprised of local sales and total exports and total exports are further disaggregated to domestic and international exports. Also shown is total imports which comprises of domestic and international imports.
The sectors that employ the most people are mining and construction. Much of the employment in construction is also linked to the mining sector. Transport is also an important employer. Under the transport sector, road transport is the sub-sector with the highest number of employees – it is responsible for 714 jobs.

The mining sector is the largest contributor to gross economic output. In 2014/15 it contributed $27mn which is 67 percent of all output. The mining sector is also the only sector that significantly contributes to Karratha's export market both domestically and internationally.

In Table 3 some of the key figures are highlighted in yellow. This highlights the importance of the mining sector and the strong links between mining and construction.

Table 3: Industry Sector Analysis

		Exports ($m)					Imports ($m)		
	Employment	Total	Domestic	International	Local Sales ($m)	Gross Economic Output	Total	Domestic	International
All Industries	**28,315**	**36,600**	**12,878**	**23,722**	**18,819**	**55,418**	**20,149**	**16,229**	**3,920**
Agriculture, Forestry and Fishing	47	4	2	2	15	19	113	110	3
Mining	7,615	36,076	12,523	23,553	1,078	37,154	2,396	2,280	116
Manufacturing	1,129	281	159	122	434	715	6,768	3,520	3,248
Electricity, Gas, Water and Waste Services	608	46	45	0	385	431	415	414	0
Construction	6,798	0	0	0	14,485	14,485	0	0	0
Wholesale Trade	487	6	4	1	106	111	1,248	1,245	3
Retail Trade	1,110	5	4	0	89	93	481	481	0
Accommodation and Food Services	1,347	26	11	15	196	223	728	494	234
Transport, Postal and Warehousing	1,810	126	100	26	715	841	1,251	1,221	30
Information Media and Telecommunications	107	4	3	1	41	45	297	284	14
Financial and Insurance Services	89	0	0	0	40	40	896	869	27
Rental, Hiring and Real Estate Services	513	5	5	0	287	292	1,490	1,413	76
Professional, Scientific and Technical Services	1,616	5	5	0	284	289	2,143	1,989	154
Administrative and Support Services	1,099	4	4	0	214	217	531	522	8
Public Administration and Safety	1,366	3	3	0	166	169	265	265	0
Education and Training	909	5	4	1	67	72	173	170	3
Health Care and Social Assistance	786	3	3	0	80	83	41	40	1
Arts and Recreation Services	100	0	0	0	12	12	62	61	1
Other Services	778	2	2	0	126	128	853	850	3

Source: NIEIR, economy.id and Imani Development, 2016

Table 4 provides a breakdown of the mining sector as it is the largest contributor to gross value add as per the industry analysis. Karratha contributes 8 percent to employment in mining in Western Australia. More significantly, it provides 24 percent of the regions total exports. Compared to 2009/10 the employment statistic has grown by 3 percent and there has been no change in the overall percentage contribution to exports. However, the aggregate contribution to mining has almost doubled thus showing the increase in mining activity in Western Australia.

Table 4: Mining

Mining - Constant prices	2014/15			2009/10		
Economic measure	City of Karratha	Western Australia	City of Karratha as a % of Western Australia	City of Karratha	Western Australia	City of Karratha as a % of Western Australia
Employment (total)	7,615	93,216	8	3,791	69,507	5
Exports ($m)	36,076	152,196	24	20,000	82,698	24
Exports (domestic) ($m)	12,523	52,206	24	5,033	18,135	28
Exports (international) ($m)	23,553	99,990	24	14,967	64,563	23
Imports ($m)	2,396	24,069	10	1,095	13,209	8
Imports (domestic) ($m)	2,280	20,753	11	1,031	8,303	12
Imports (international) ($m)	116	3,315	3	64	4,906	1
Local Sales ($m)	1,078	16,656	6	602	9,435	6

Source: NIEIR, economy.id and Imani Development, 2016

Tables 5 and 6 further disaggregate the mining sector into metal ore mining and oil and gas extraction. In Karratha metal ore mining employs 4,205 individuals while oil and gas extraction employs 2,704. It is also evident that metal ore mining is the larger of the two industries in Western Australia, but Karratha forms the core of oil and gas exports making up 70 percent of Western Australia's trade – up from 60 percent in 2009/10.

Table 5: Mining – Metal Ore

Metal Ore Mining - Constant prices	2014/15			2009/10		
Economic measure	City of Karratha	Western Australia	City of Karratha as a % of Western Australia	City of Karratha	Western Australia	City of Karratha as a % of Western Australia
Employment (total)	4,205	54,472	8	1,934	38,723	5
Exports ($m)	11,057	106,261	10	3,464	46,933	7
Exports (domestic) ($m)	3,126	30,505	10	184	3,677	5
Exports (international) ($m)	7,931	75,755	10	3,280	43,256	8
Imports ($m)	375	12,925	3	38	3,411	1

Imports (domestic) ($m)	338	11,759	3	23	2,577	1
Imports (international) ($m)	38	1,166	3	15	834	2
Local Sales ($m)	226	9,844	2	71	5,287	1

Source: NIEIR, economy.id and Imani Development, 2016

Table 6: Oil and Gas Extraction

Oil and Gas Extraction - Constant prices	**2014/15**			**2009/10**		
Economic measure	**City of Karratha**	**Western Australia**	**City of Karratha as a % of Western Australia**	**City of Karratha**	**Western Australia**	**City of Karratha as a % of Western Australia**
Employment (total)	2,704	12,409	22	1,204	9,163	13
Exports ($m)	24,803	35,234	70	16,360	27,049	60
Exports (domestic) ($m)	9,249	12,863	72	4,694	7,455	63
Exports (international) ($m)	15,554	22,371	70	11,666	19,594	60
Imports ($m)	716	7,509	10	380	8,074	5
Imports (domestic) ($m)	682	5,884	12	331	4,053	8
Imports (international) ($m)	34	1,625	2	49	4,020	1
Local Sales ($m)	506	1,336	38	334	1,019	33

Source: NIEIR, economy.id and Imani Development, 2016

2.2 Trends in Oil and Gas and Mining Sectors

Karratha's growth in construction and infrastructure development between 2000 and 2011 was in response to a global resource boom. This boom was driven primarily by increased demand from East Asia – most notably China – and to a lesser extent, large infrastructural investments in the Arabian Gulf. Following initial investments in infrastructure, the Karratha economy and population continued to grow. The significant slowdown in demand for resource exports from these regions between 2013 and 2014, however, has negatively impacted the city's growth. In part, this is because this growth was felt largely in resource sectors, and did not translate into economic diversification. If there are signs resources will recover, it is important to know when, and what this means for industry in the interim. If not, there is a need to explore longer-term diversification strategies, and how these would best be realised.

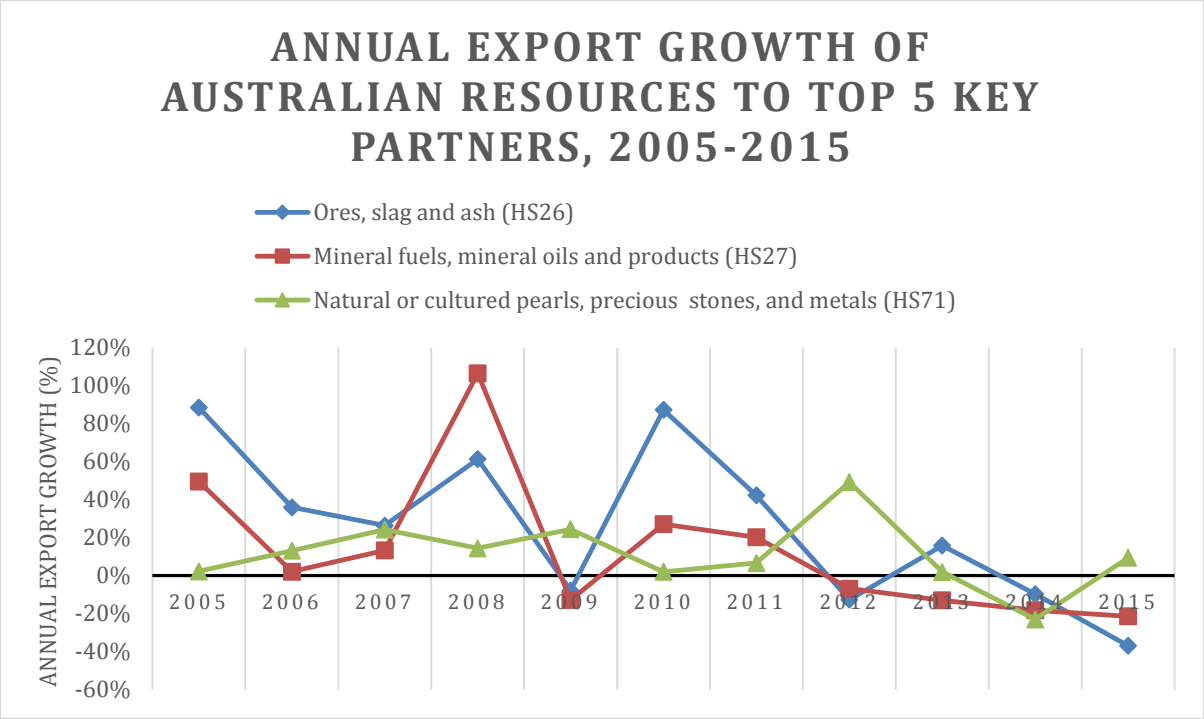
Macro Level

This section performs high-level macroeconomic analysis of trends in Australia's resource exports, with respect to its top 5 export markets: China, Japan, Republic of Korea, USA and India[2]. The graph below shows how Australia's raw material exports (HS26, 27 and 71) increased dramatically following the commodity boom in 2004/2005[3]. It also shows how sharply exports declined post-2011. Exports to Australia's major market for raw materials, China, continued to increase through 2012 and 2013, before tailing off sharply in 2014 and 2015. With the exception of USA – which remained relatively constant in comparison – the other major export markets (India, Japan and Korea Republic) started to tail off as early as 2011.

[2] This includes exports of mineral products captured in HS26 (ores and concentrates of heavy and precious metals), HS27 (coal, lignite, peat, carbon, coal gas, tar, coal-tar distillation products, pitch, petroleum oils and oils) and HS71 (pearls, precious stones, precious metals, etc).

[3] UN COMTRADE, 2016

This phenomenon is captured well through an examination of raw material export growth rates through this period (see figure below[4]). With annual growth largely positive between 2005 and 2010, export growth to these partners starts to slow thereafter, with growth consistently negative from 2013 onwards.



Regional and Local Level

Mining comprises over 98% of Karratha's exports, and has done so for over a decade. Virtually all the growth in Karratha's exports between 2005 and 2015 derive from mining, and thus the declining global demand for resources is likely to be felt significantly in terms of exports. The table[5] below illustrates how all growth in exports over this period is driven by growth in mining exports.

Table 7: Growth in Mining Exports

		Growth in Exports		2014/15		2005/06	
	Industry	**$m**	**% of change**	**$m**	**% of total**	**$m**	**% of total**
Exports	Mining	$19,062.49	98.6%	$36,076.41	98.6%	$17,013.91	98.5%
	Total Exports	**$19,323.55**		**$36,599.63**		**$17,276.08**	

Correspondingly, the infrastructural deficit prior to expansion of the mining sector has spurred a parallel expansion in the construction sector. Over this period, the composition of Karratha's economic output dependent on mining has fallen relevant to construction – as shown below[6].

[4] UN COMTRADE, 2016
[5] Source: National Institute of Economic and Industry Research (NIEIR) ©2016
[6] Source: National Institute of Economic and Industry Research (NIEIR) ©2016

Table 8: Karratha's Economic Output

		Growth in Output		2014/15		2005/06	
	Industry	**$m**	**% of change**	**$m**	**% of total**	**$m**	**% of total**
Output	Mining	$19,445.65	56.8%	$37,154.63	67.0%	$17,708.98	83.7%
	Construction	$12,736.95	37.2%	$14,484.89	26.1%	$1,747.94	8.3%
	Total	$32,182.60	93.9%	$51,639.52	93.2%	$19,456.92	92.0%
	Total Industries	**$34,258.38**		**$55,418.42**	**100.0**	**$21,160.04**	**100.0**

In 2005, mining comprised 84% of total output, compared to 8% from construction. In response to the commodity boom of the decade that followed, output grew by 250% - led primarily by the doubling of the mining sector, and the construction sector which grew by more than eight times; four times faster than mining. Over the period, 57% of Karratha's output growth was derived from mining expansion and 37% from construction.

The rapid growth of construction through the commodity boom offers a base for economic consolidation during slowed demand for mining exports.

Forecasting demand for commodities

Commodities have declined in price steadily over the last 4 years owed to both supply and demand factors. Due to an oversupplied market, oil prices are expected to continue to fall through 2016, but will gradually recover through 2017 as supply from non-OPEC countries declines due to low prices and global demand strengthens[7]. Over the next two years to January 2018, Brent crude prices are expected to recover modestly and average $45 per barrel through 2017.

Lower Chinese demand for raw materials is unlikely to rebound significantly over the next few years, due to a continued structural slowdown in investment growth. This was most pronounced in real-estate, which suffers from substantial housing overhang. Government efforts to increase domestic housing demand has seen the recovery of real estate sales and prices in the sector, despite unsold floor space rising concurrently[8]. Manufacturing growth further decelerated through 2015 due to poor outlooks for capital-intensive industries, while slowdowns in infrastructure investment was curbed through government intervention. Steel output in China is expected to drop to 781 million tonnes in 2016 – down from 806 million tonnes in 2015 – and is expected to continue falling to an estimated 706 million tonnes in 2021[9].

Despite lowered demand from China, iron ore cargoes from Australia are expected to increase. Exports are expected to increase to 846 million tonnes in 2016 to 881 million tonnes in 2017. Driven by production expansion of Rio Tinto, medium term forecasts predict iron ore shipments to reach 926 million tonnes by 2021[10]. Production from the Roy Hill

[7] ADB (2016), Asian Development Outlook 2016: Asia's Potential Growth
[8] ADB (2016), Asian Development Outlook 2016: Asia's Potential Growth
[9] Accessed online on 14/11/2016, available at: http://www.smh.com.au/business/mining-and-resources/australia-lifts-iron-ore-outlook-forecasting-rising-prices-through-2021-20160408-go1pom.html
[10] Accessed online on 14/11/2016, available at: http://www.smh.com.au/business/mining-and-resources/australia-lifts-iron-ore-outlook-forecasting-rising-prices-through-2021-20160408-go1pom.html

project in Pilbara is continuing to target 55 million tonnes per year despite the slowdown in China.

These expectations are driven by global supply-side adjustments in the industry as higher-cost producers are increasingly displaced by increased low-cost capacity generated by the world's largest producers – Australia and Brazil. The two producers are expected to increase their share of global iron ore trade from 77% in 2015/16 to 90% in 2021[11]. In the short term, the majority of Australia's supply growth is attributable to the Pilbara Roy Hill project, which whilst already in production, is expected to reach closer to peak output in 2017[12].

As context, Australia is the largest iron ore producer globally (accounting for 37% of total output in 2015), and of this, the Pilbara region produced 94%. Of the three large iron ore producers in Australia – Rio Tinto, BHP Billiton and Fortescue Metals Group – only Rio Tinto significantly grew sales in 2015/16. Rio Tinto grew its iron ore sales by 11% to 331 million tonnes, while BHP Billiton and Fortescue Metals Group grew sales by 1% to 257 million tonnes, and 2% to 169 million tonnes respectively[13]. BHP Billiton has forecast a 4% growth in its WA iron ore production in 2017[14], Rio Tinto expects output in 2017 to retain 2016 levels of 330 million tonnes, while FMG is expecting to increase production by around 1%.

As the iron ore industry adjusts to lower prices, spot prices are expected to recover moving into 2017. Estimations of iron ore futures in Australia vary considerably. Australian federal government forecasts spot prices to rebound to US$55 per tonne in 2016/17, up from US$39 per tonne in 2015/16[15]. These are free on board (FOB) spot price forecasts, calculated exclusive of freight costs. Freight costs are accounted for in cost and freight (CFR) spot pricing. The federal government estimations differ markedly from Western Australia (WA) treasury forecasts, who estimate CFR iron ore spot spices at US$47.70 in 2016/17, which equates to an FOB spot price of US$43.70[16]. This is US$11.30 lower per tonne.

For iron ore spot prices to recover from the approximate 42% decline through 2015[17], both demand and supply side dynamics would need to shift. In parallel to closures of high-cost producers, demand would need to be revived through the reacceleration of the Chinese economy – and only the former is deemed likely over the short to medium term[18]. A short-term insulator for Australian producers is the country's proximity to Asian markets, and that shipping involves lower freight costs compared to suppliers from more distant regions[19]. As

[11] Accessed online on 14/11/2016, available at: http://www.smh.com.au/business/mining-and-resources/australia-lifts-iron-ore-outlook-forecasting-rising-prices-through-2021-20160408-go1pom.html
[12] Accessed online on 14/11/2016, available at: http://www.bordermail.com.au/story/4241901/iron-ore-price-set-to-fall-heading-into-2017/
[13] GWA Department of State Development (September, 2016), Western Australia Iron Ore Industry Profile
[14] Accessed online on 14/11/2016, available at: http://www.theaustralian.com.au/business/mining-energy/bhp-billiton-posts-record-iron-ore-production-but-misses-forecasts/news-story/56ad6a86f799c90779054824b89c0869
[15] Accessed online on 14/11/2016, available at: http://www.businessinsider.com.au/treasury-sees-iron-ore-at-us55-a-tonne-next-year-2016-5
[16] Accessed online on 14/11/2016, available at: http://www.businessinsider.com.au/western-australias-iron-ore-forecasts-are-way-below-those-offered-by-the-federal-government-2016-5
[17] GWA Department of State Development (March, 2016), Western Australia Iron Ore Industry Profile
[18] St George State Economic Outlook (2016), WA Economic Outlook
[19] Accessed online on 14/11/2016, available at: http://www.bordermail.com.au/story/4241901/iron-ore-price-set-to-fall-heading-into-2017/

such, the sector is predicted to grow, but at a modest pace, as Australian producers absorb displaced demand rather than additional.

2.3 Value Chain Analysis

Economic impact modelling shows how a change output (sales) in one sector of the local economy will impact on all other sectors of the economy, by modelling the flow-on effects across different industries. The economic impacts are calculated using an input-output model, which is derived from the local economy micro-simulation model by National Economics (NIEIR). Table 1 shows the economic multipliers for the City of Karratha. The multiplier affects are modelled by direct, indirect and total affects.

Direct impacts: represent the initial change in the industry selected.

Indirect impacts (Industrial): The direct impact from the initial expenditure creates additional activity in the local economy through a 'ripple effect'. Indirect effects are the results of business-to-business transactions indirectly caused by the direct impacts.

Induced impacts (Consumption): An increase in revenue (from direct and indirect impacts) means that businesses increase wages and salaries by hiring more employees, increasing hours worked and raising wages. Households will then increase spending at local businesses.

The sectors that have the highest multiplier affects in Table 9 are the construction and manufacturing sectors. The multiplier affects for the mining sector are somewhat muted due to the global commodity slowdown that started in mid-2014.

Table 9: Industry Multiplier Table – City of Karratha

Sector	Direct	Indirect	Total
Construction	1.47	0.01	1.48
Building Construction	1.6	0.02	1.62
Construction Services	1.49	0.01	1.5
Heavy & Civil Eng.	1.42	0.01	1.43
Manufacturing	1.38	0.02	1.4
Primary metal & Metal Products	1.88	0.01	1.89
Food Product Manufacturing	1.65	0.04	1.69
Wood Product Manufacturing	1.44	0.06	1.5
Accommodation and Food services	1.23	0.03	1.26
Agriculture, Forestry and Fishing	1.21	0.02	1.23
Arts and recreation	1.2	0.03	1.23
Electricity, Gas, Water, Waste	1.19	0.02	1.21
Transport, Postal and Warehousing	1.17	0.02	1.19
Mining	1.16	0	1.16
Metal Ore Mining	1.22	0.01	1.23
Oil & Gas extraction	1.12	0.01	1.13
Wholesale trade	1.16	0.05	1.21
Other services	1.15	0.04	1.19
Information, media and communications	1.13	0.04	1.17
Public admin. and Safety	1.13	0.07	1.2
Retail trade	1.12	0.07	1.19
Rental, Hiring and Real Estate	1.11	0.03	1.14
Professional, Scientific and Technical	1.11	0.03	1.14

Administrative and support	1.11	0.07	1.18
Health care and Social assistance	1.08	0.09	1.17
Education and Training	1.06	0.13	1.19
Financial and Insurance Services	1.04	0.03	1.07

Source: NIEIR, economy.id and Imani Development, 2016

Using the multiplier values from Table 9 above and the modelling program developed by *economy.id* for the City of Karratha it is possible to determine the economic impact on output of adding $10 million in sales to specific sectors. All values are inflation adjusted and expressed in 2013/14 base year dollar terms. The write-ups for the construction, manufacturing, oil and gas extraction and metal ore mining are as per the outputs produced by the *economy.id* model.

It should be noted that the reverse model is also true – in others words a $10 million fall in sales with have exactly the same reverse impact on output.

IMPACT ON OUTPUT

The direct addition of $10 million annual output in the following sectors (construction, manufacturing, oil and gas, metal ore mining) would lead to an increase in indirect demand for intermediate goods and services across related industry sectors.

CONSTRUCTION

Indirect industrial impacts (Type 1): leads to an additional $4.65m in output, representing a Type 1 output multiplier of 1.47.

There would be an additional contribution to the City of Karratha economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in output of $0.14m.

The combination of all direct, industrial and consumption effects would result in total estimated rise in output of $14.79m in the City of Karratha economy, representing a Type 2 output multiplier of 1.48.

These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the value of $10.34m in output.

The combined effect of economic multipliers in the City of Karratha and the wider Australian economy is estimated to be $25.14m added to Australia's output.

MANUFACTURING

Indirect industrial impacts (Type 1): leads to an additional $3.79m in output, representing a Type 1 output multiplier of 1.38.

There would be an additional contribution to the City of Karratha economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in Output of $0.19m .

The combination of all direct, industrial and consumption effects would result in total estimated rise in output of $13.98m in the City of Karratha economy, representing a Type 2 output multiplier of 1.40.

These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the value of $9.18m in output.

The combined effect of economic multipliers in the City of Karratha and the wider Australian economy is estimated to be $23.16m added to Australia's output.

OIL AND GAS EXTRACTION

Indirect industrial impacts (Type 1): leads to an additional $1.25m in output, representing a Type 1 output multiplier of 1.12.

There would be an additional contribution to the City of Karratha economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in output of $0.04m .

The combination of all direct, industrial and consumption effects would result in total estimated rise in output of $11.29m in the City of Karratha economy, representing a Type 2 output multiplier of 1.13.

These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the value of $5.87m in output.

The combined effect of economic multipliers in the City of Karratha and the wider Australian economy is estimated to be $17.16m added to Australia's output.

METAL ORE MINING

Indirect industrial impacts (Type 1): leads to an additional $2.20m in Output, representing a Type 1 output multiplier of 1.22.

There would be an additional contribution to the City of Karratha economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in Output of $0.09m.

The combination of all direct, industrial and consumption effects would result in total estimated rise in output of $12.29m in the City of Karratha economy, representing a Type 2 Output multiplier of 1.23.

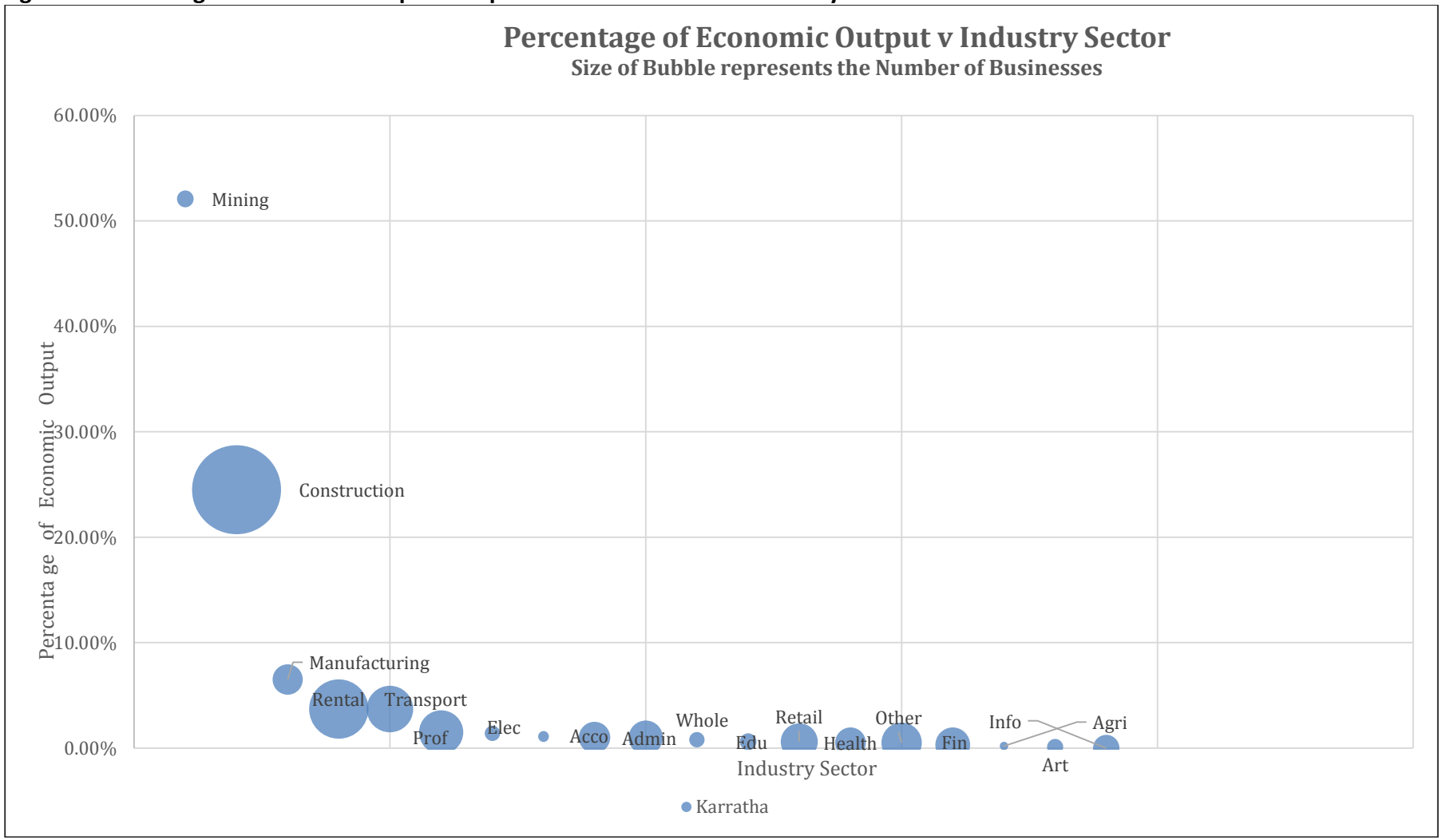
These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the value of $6.86m in output.

The combined effect of economic multipliers in the City of Karratha and the wider Australian economy is estimated to be $19.15m added to Australia's output.

Sector Size to Industry Output

Figure 1 shows the overall percentage of economic output produced by each sector in Karratha compared to the relative industry size – where the size of the balloons represents the size of the sector. Mining is responsible for over 50 percent of Karratha's output and is comprised of only 12 firms. Construction and related industries produced 25 percent of output and is made up of 338 firms. The construction sector comprises of the highest number of firms across all sectors in Karratha. The remaining sectors all contribute less than 10 percent of output and the number of firms in each sector ranges from 3 to 149 firms.

Figure 1: Percentage of Economic Output Compared to Relative Size of Industry



EMPLOYMENT

Table 10 is derived from the employment multipliers prepared by *economy.id*. The table shows the impact on employment of $10 million in new sales for each of the given sectors. This includes both the direct industrial impact (Type 1) and ongoing consumption impact (Type 2). The combined affect means the addition of jobs in the local economy would lead to a corresponding increase in wages and salaries, a proportion of which would be spent on local goods and services, creating further jobs through consumption impacts.

Table 10 is broken down into jobs created in Karratha, both for residents and non-resident, and jobs created outside of Karratha. The total number of jobs created is also shown.

As highlighted in Table 10 an increase in sales of $10 million would have the largest impact on education and training, retail trade and arts and recreation. The greatest impact in these sectors would also be experienced by local residents. The prioritisation of these sectors will result in the highest generation of employment opportunities.

It is expected that the limited impact in the mining sector would be due to current economic conditions and the possibility of the sector already being at near or close to full capacity. As a result, any further increases in sales would have limited affects on increases in employment. It is also noticeable that the split between resident and non-resident workers for construction, manufacturing and mining is very similar indicating that new employment is shared with FIFO employees. This trend is much less apparent in the other sectors. This shows that monetary stimulus into the other sectors will have a greater impact on creating local employment.

Table 10: Employment by Sector

Sector	Jobs created in Karratha		Outside of Karratha	Total
	Resident	Non-resident		
Construction	9	7	39	55
Building Construction	20	24	47	91
Construction Services	9	6	36	51
Heavy & Civil Eng.	9	6	43	58
Manufacturing	16	7	31	54
Primary metal & Metal Product	11	8	26	45
Food Product Manufacturing	35	7	39	81
Wood Product Manufacturing	45	1	38	84
Accommodation and Food services	41	25	34	100
Agriculture, Forestry and Fishing	20	13	32	65
Arts and recreation	82	16	40	138
Electricity, Gas, Water, Waste	16	3	24	43
Transport, Postal and Warehousing	20	8	37	65
Mining	4	2	21	27
Metal Ore Mining	6	3	24	33
Oil & Gas extraction	3	1	19	23
Wholesale trade	46	5	36	87
Other services	60	11	31	102

Information, media and communications	27	1	39	67
Public admin and Safety	79	5	40	124
Retail trade	122	3	32	157
Rental, Hiring and Real Estate	20	3	33	56
Professional, Scientific and technical	34	21	48	103
Administrative and support	36	19	53	108
Health care and Social assistance	88	12	29	129
Education and Training	127	3	30	160
Financial and Insurance Services	23	1	24	48

Source: NIEIR, economy.id and Imani Development, 2016

Tables 11 and 12 are an extension of Table 10 and are also based on a $10 million increase in sales in a particular sector. The two tables show the multiplier affects across industries. Table 11 shows the number of jobs created across all sectors in the City of Karratha for both residents and non-residents due to an increase in sales in one specific industry. For example, an increase of $10 million in sales in the education sector will have a direct impact of increasing employment in Karratha by 122 employees. The indirect affect will be 8 jobs created in other sectors including wholesale and retail trade (as well as transport, health, arts and other).

In the case of both resident and non-resident jobs created, wholesale trade, retail trade and education and training (highlighted in light blue) have the strongest multipliers across all sectors (followed by transport). The implication is an increase in sales in almost any sector will result in indirect employment in wholesale and retail trade and education.

The sectors that generate the highest number of indirect jobs are accommodation and food services and education and training followed by manufacturing and arts and recreational services.

The overall implication is that spending in education and training will have the strongest direct and indirect impact on employment created.

Table 11: Jobs created in the City of Karratha (residents and non-residents)

	Agriculture, Forestry and Fishing	Mining	Manufacturing	Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing	Information Media and Telecommunications	Financial and Insurance Services	Rental, Hiring and Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Public Administration and Safety	Education and Training	Health Care and Social Assistance	Arts and Recreation Services	Other Services
Agriculture, Forestry and Fishing	27	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	0	0
Mining	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Manufacturing	0	1	16	0	0	2	2	0	1	0	0	0	0	0	0	1	0	0	0
Electricity, Gas, Water and Waste Services	0	0	0	15	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Construction	0	0	1	0	10	1	2	0	1	0	0	0	1	0	0	0	0	0	0
Wholesale Trade	0	0	0	0	0	44	2	0	1	0	0	0	0	0	0	1	0	0	0
Retail Trade	0	0	0	0	0	1	118	0	1	0	0	0	0	0	0	2	0	0	0
Accommodation and Food Services	1	0	2	0	0	1	2	58	1	0	0	0	0	0	0	1	0	0	0
Transport, Postal and Warehousing	0	0	0	0	0	1	2	0	22	0	0	0	0	0	0	1	0	0	1
Information Media and Telecommunications	0	0	0	0	0	1	2	0	0	20	0	0	0	0	0	1	0	1	0
Financial and Insurance Services	0	0	0	0	0	0	1	0	0	0	20	0	0	0	0	1	0	0	0
Rental, Hiring and Real Estate Services	0	0	0	0	0	1	1	0	0	0	0	18	0	0	0	1	0	0	0
Professional, Scientific and Technical Services	0	0	0	0	0	1	1	0	0	0	0	0	50	0	0	1	0	0	0
Administrative and Support Services	0	0	0	0	0	1	2	0	1	0	0	0	0	46	0	2	0	0	1
Public Administration and Safety	0	0	0	0	0	1	2	0	1	0	0	0	0	0	75	2	0	0	0
Education and Training	0	0	0	0	0	1	3	0	1	0	0	0	0	0	0	122	1	1	1
Health Care and Social Assistance	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	2	91	0	1
Arts and Recreation Services	0	0	1	0	0	1	3	0	1	0	0	0	0	0	0	1	0	89	0
Other Services	0	0	1	0	0	2	3	0	0	0	0	0	0	0	0	1	0	0	62

Table 12: Jobs created in the City of Karratha for Residents

	Agriculture, Forestry and Fishing	Mining	Manufacturing	Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing	Information Media and Telecommunications	Financial and Insurance Services	Rental, Hiring and Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Public Administration and Safety	Education and Training	Health Care and Social Assistance	Arts and Recreation Services	Other Services
Agriculture, Forestry and Fishing	15	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	0	0
Mining	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Manufacturing	0	1	10	0	0	1	2	0	1	0	0	0	0	0	0	1	0	0	0
Electricity, Gas, Water and Waste Services	0	0	0	13	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Construction	0	0	0	0	4	1	2	0	1	0	0	0	0	0	0	0	0	0	0
Wholesale Trade	0	0	0	0	0	40	2	0	1	0	0	0	0	0	0	1	0	0	0
Retail Trade	0	0	0	0	0	1	116	0	0	0	0	0	0	0	0	2	0	0	0
Accommodation and Food Services	1	0	2	0	0	1	2	34	0	0	0	0	0	0	0	1	0	0	0
Transport, Postal and Warehousing	0	0	0	0	0	1	2	0	15	0	0	0	0	0	0	1	0	0	0
Information Media and Telecommunications	0	0	0	0	0	1	2	0	0	20	0	0	0	0	0	1	0	1	0
Financial and Insurance Services	0	0	0	0	0	0	1	0	0	0	19	0	0	0	0	1	0	0	0
Rental, Hiring and Real Estate Services	0	0	0	0	0	1	1	0	0	0	0	15	0	0	0	1	0	0	0
Professional, Scientific and Technical Services	0	0	0	0	0	1	1	0	0	0	0	0	30	0	0	1	0	0	0
Administrative and Support Services	0	0	0	0	0	1	2	0	0	0	0	0	0	28	0	2	0	0	0
Public Administration and Safety	0	0	0	0	0	1	2	0	1	0	0	0	0	0	71	2	0	0	0
Education and Training	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	119	1	1	1
Health Care and Social Assistance	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	2	79	0	1
Arts and Recreation Services	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	1	0	74	0
Other Services	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	1	0	0	52

2.4 Value-Add By Industry

Value-added is the value of sales generated by each industry, minus the cost of its inputs. Estimates are modelled using the NIEIR methodology, and presented in constant dollars (adjusted for inflation). It is calculated by subtracting the cost of industry inputs from total sales generated.

Value added data are derived from ABS State Accounts, distributed among regions by industry according to estimates of industry value-added, Census and ABS Labour Force based employment and industry earnings data from the Australian Taxation Office. An estimate of labour productivity is derived from ATO data from each region and applied to the industry workforce.

Value-add is interpreted in the same way as output and employment in that there are both direct and indirect impacts based on a direct addition of $10 million in any sector. Tables 13 and 14 show a detailed breakdown of how adding $10 million annual output in any one sector of the City of Karratha economy will impact on the Value-added of each industry sector. This highlights the relationships between industries. Table 13 shows the value-add to the City of Karratha while Table 14 shows the value-added to the Australian economy.

In Table 13 it is apparent that the sectors that are most positively impacted by indirect spending affects are wholesale and retail trade and transport. The sectors that result in the strongest indirect effects are manufacturing followed by accommodation and food, arts and recreation and construction. The implication is that spending on manufacturing will result in the greatest amount of value added in other sectors.

Table 14 shows the sectors most positively impacted by indirect spending is the finance sector followed by professional services, transport and accommodation. The sectors that result in the strongest indirect effects are administrative and support services and art and recreation services. This means that spending in these sectors will have the strongest value added across all other sectors in relation to the Australian economy as a whole.

Table 13: Value-add for The City of Karratha, 2013-14 ($m constant prices)

	Agriculture, Forestry and Fishing	Mining	Manufacturing	Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing	Information Media and Telecommunications	Financial and Insurance Services	Rental, Hiring and Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Public Administration and Safety	Education and Training	Health Care and Social Assistance	Arts and Recreation Services	Other Services
Agriculture, Forestry and Fishing	5.8	0.0	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	5.7	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.1	1.1	2.8	0.1	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity, Gas, Water and Waste Services	0.0	0.1	0.0	5.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	0.0	0.1	0.2	0.1	4.4	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale Trade	0.0	0.1	0.1	0.0	0.1	5.4	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Retail Trade	0.1	0.0	0.1	0.0	0.0	0.1	6.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Accommodation and Food Services	0.2	0.0	0.3	0.1	0.1	0.2	0.1	4.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport, Postal and Warehousing	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Information Media and Telecommunications	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	5.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Financial and Insurance Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Rental, Hiring and Real Estate Services	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Professional, Scientific and Technical Services	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative and Support Services	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	7.2	0.0	0.1	0.0	0.0	0.0
Public Administration and Safety	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	5.9	0.1	0.0	0.0	0.0
Education and Training	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.1	0.0	0.0
Health Care and Social Assistance	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.6	0.0	0.0
Arts and Recreation Services	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	3.8	0.0
Other Services	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	4.0

Table 14: Value-add for the Australian Economy, 2013-14 ($m constant prices)

	Agriculture, Forestry and Fishing	Mining	Manufacturing	Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing	Information Media and Telecommunications	Financial and Insurance Services	Rental, Hiring and Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Public Administration and Safety	Education and Training	Health Care and Social Assistance	Arts and Recreation Services	Other Services
Agriculture, Forestry and Fishing	6.1	0.2	0.5	0.2	0.1	0.4	0.3	0.1	0.4	0.2	0.8	0.2	0.4	0.2	0.0	0.2	0.1	0.0	0.1
Mining	0.1	5.8	0.3	0.2	0.2	0.2	0.1	0.1	0.3	0.1	0.9	0.2	0.3	0.2	0.1	0.1	0.1	0.0	0.1
Manufacturing	0.2	1.4	3.4	0.3	0.1	0.4	0.3	0.2	0.6	0.2	0.7	0.2	0.5	0.2	0.1	0.1	0.1	0.0	0.1
Electricity, Gas, Water and Waste Services	0.1	0.2	0.2	5.9	0.2	0.2	0.2	0.1	0.2	0.2	1.3	0.1	0.4	0.2	0.0	0.1	0.1	0.0	0.1
Construction	0.1	0.3	0.8	0.2	4.4	0.4	0.3	0.2	0.5	0.3	0.8	0.2	0.8	0.3	0.1	0.2	0.1	0.0	0.2
Wholesale Trade	0.1	0.2	0.4	0.2	0.1	5.6	0.3	0.2	0.8	0.4	0.9	0.5	0.7	0.4	0.1	0.2	0.1	0.0	0.2
Retail Trade	0.2	0.1	0.4	0.2	0.1	0.3	6.7	0.2	0.4	0.5	0.9	0.4	0.6	0.3	0.1	0.2	0.1	0.0	0.1
Accommodation and Food Services	0.4	0.1	0.7	0.3	0.1	0.4	0.3	4.9	0.4	0.3	0.9	0.4	0.4	0.5	0.0	0.2	0.1	0.0	0.1
Transport, Postal and Warehousing	0.1	0.2	0.4	0.2	0.1	0.3	0.3	0.2	6.8	0.3	1.1	0.3	0.6	0.5	0.1	0.2	0.1	0.0	0.2
Information Media and Telecommunications	0.1	0.1	0.4	0.2	0.1	0.4	0.3	0.2	0.4	6.9	0.8	0.3	0.8	0.3	0.1	0.2	0.1	0.1	0.2
Financial and Insurance Services	0.1	0.0	0.2	0.1	0.0	0.1	0.2	0.1	0.2	0.2	8.8	0.2	0.7	0.3	0.0	0.2	0.1	0.0	0.1
Rental, Hiring and Real Estate Services	0.1	0.1	0.3	0.3	0.1	0.2	0.2	0.2	0.3	0.3	1.6	2.5	0.6	0.4	0.1	0.2	0.1	0.0	0.1
Professional, Scientific and Technical Services	0.1	0.1	0.3	0.3	0.1	0.3	0.3	0.3	0.4	0.5	1.2	0.3	6.3	0.6	0.1	0.2	0.2	0.1	0.2
Administrative and Support Services	0.2	0.1	0.4	0.3	0.1	0.4	0.4	0.3	0.6	0.5	1.3	0.5	0.9	7.9	0.1	0.4	0.3	0.1	0.2
Public Administration and Safety	0.1	0.1	0.4	0.4	0.2	0.3	0.4	0.3	0.4	0.4	1.1	0.3	0.9	0.4	6.0	0.3	0.2	0.0	0.2
Education and Training	0.1	0.1	0.3	0.2	0.1	0.3	0.4	0.2	0.4	0.4	0.9	0.2	0.4	0.3	0.1	8.0	0.2	0.1	0.1
Health Care and Social Assistance	0.1	0.1	0.3	0.2	0.0	0.3	0.4	0.2	0.3	0.3	0.8	0.2	0.3	0.3	0.0	0.3	7.7	0.0	0.2
Arts and Recreation Services	0.2	0.1	0.4	0.2	0.1	0.4	0.4	0.2	0.4	0.5	0.7	0.3	0.8	0.6	0.1	0.2	0.1	4.0	0.2
Other Services	0.1	0.1	0.6	0.2	0.1	0.5	0.3	0.2	0.4	0.3	0.7	0.2	0.5	0.3	0.1	0.2	0.1	0.0	4.1

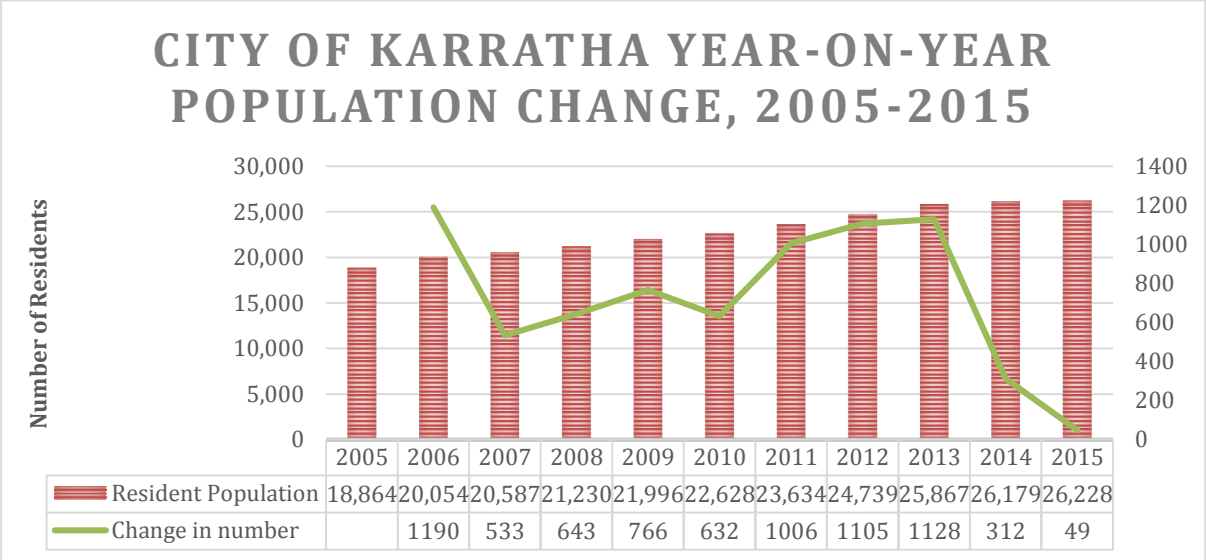
2.5 Population and FIFO trends

Population and FIFO are two of the most debated economic topics in the Pilbara. Aspirational targets for town population growth were set at the time of the formulation of the Pilbara Cities Initiatives in 2009 and supported by the regional development programmes primarily funded through the Royalties for Regions. These targets remain in place with Karratha still aiming to achieve a population of 50,000 people. The earlier projections indicated that this would be achieved by 2035, which meant an annual population increase of about 5%. This level of growth appears increasingly aspirational in light of the end of the resources boom and also that very few regional centres in Australia have achieved such consistent, sustained population increases. Karratha's population as per the 2014 ABS estimate was 26,649[20].

The relationship between employment and population

The relationship between population and employment in Karratha is an important metric that can be used to understand how an economy evolves through periods of change. The commodity boom from 2004/2005 to 2013/14 drastically increased the global demand for raw materials – a significant proportion of which originated from China. As a mineral rich area on Australia's North Western coastline, the city was strategically well-positioned to respond efficiently. As a result, the City of Karratha experienced rapid expansion of its economic base – most notably in the mining and construction sectors.

The figure below illustrates how Karratha's resident population grew through this period, and highlights its nominal growth year on year[21].

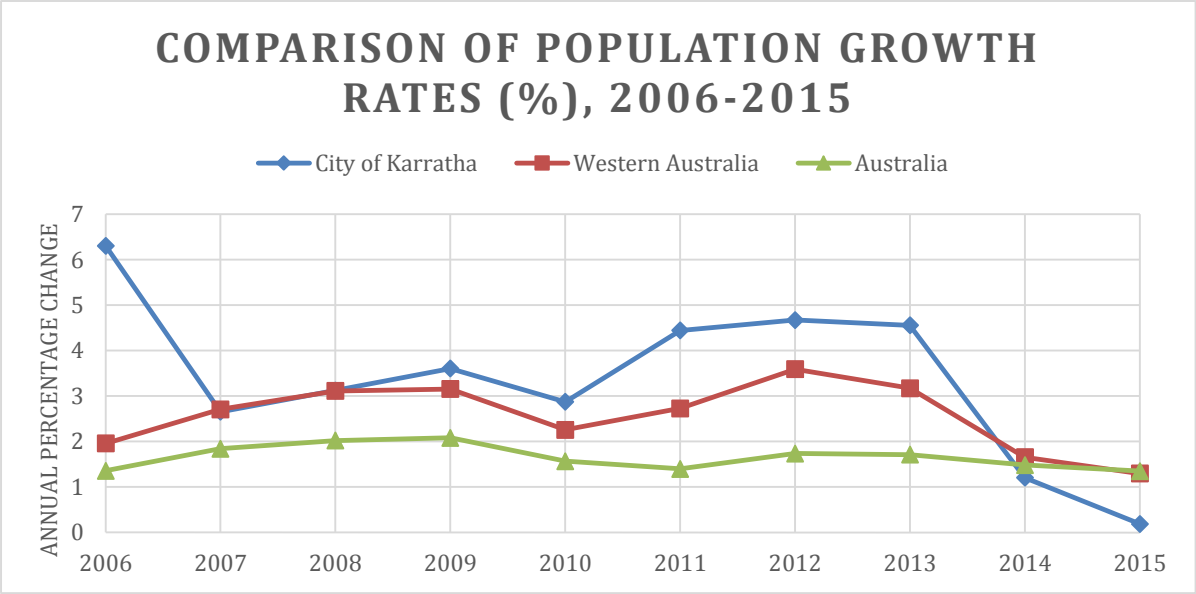


[20] Karratha Local Government Area, ABS

[21] Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

The Karratha resident population grew by between 600 and 1200 residents annually between 2005 and 2013 as the city grew to accommodate an influx of workers and their families. As the demand for raw materials began to decline post-2013, the nominal growth fell sharply – from 1128 new residents in 2013, to 312 in 2014 and 49 in 2015.

Due to the economy's functional dependence on its extractive sectors, and its lack of diversification, the city was overly exposed to the volatility of global commodity demand. In turn, trends in population growth at national and state level were amplified. This is graphed in the figure below[22]. Population growth in Western Australia and Australia was surpassed by Karratha from 2005 through 2015. However, in 2013, Karratha's population growth dips sharply below national and state levels due to its economic homogeneity.



Relating this to employment levels, the table below[23] reveals that over this period the number of employed residents in Karratha grew at a faster annual rate than population. This suggests that the majority of new residents in Karratha through this period moved to the city to both work and live.

Table 15: Karratha Population and Employment Growth

Year (ending June 30)	Resident Population	Annual Growth (%)	Employed Residents	Annual Growth (%)
2005	18,864		9,858	
2006	20,054	6.3%	10,296	4.4%
2007	20,587	2.7%	10,873	5.6%
2008	21,230	3.1%	12,020	10.5%
2009	21,996	3.6%	13,299	10.6%

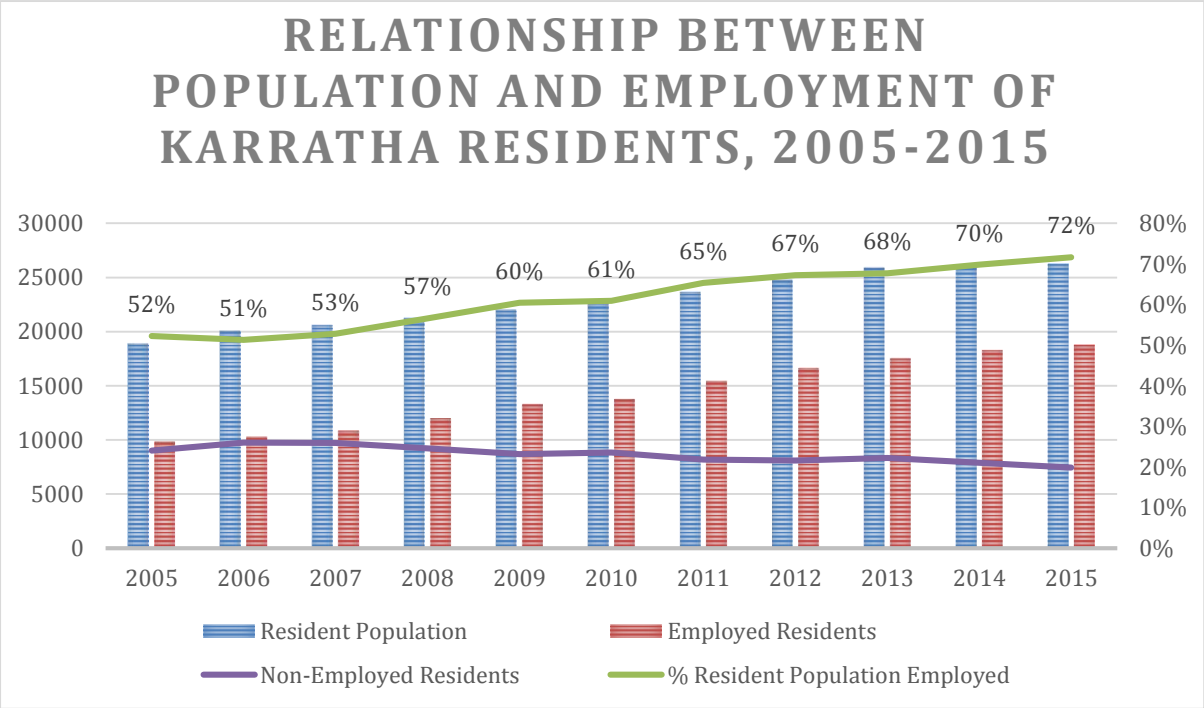
[22] Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

[23] Source: National Institute of Economic and Industry Research (NIEIR) ©2016; Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

2010	22,628	2.9%	13,776	3.6%
2011	23,634	4.4%	15,435	12.0%
2012	24,739	4.7%	16,628	7.7%
2013	25,867	4.6%	17,518	5.3%
2014	26,179	1.2%	18,282	4.4%
2015	26,228	0.2%	18,789	2.8%
CAGR		3.4%		6.7%

Also noticeable, is that the ratio of residents to employed residents increased over this period from 1:0.52 in 2005 to 1:0.72 in 2015. This (see graph below[24]) suggests a combination of a) more unemployed residents could now find work in the city, and b) of the new residents that moved to Karratha over this period, the majority were workers – indicating that their resettlement did not necessarily involve accompanying dependents. This suggestion is aided by the stagnancy of the Education and Training sector over the same period, for example.

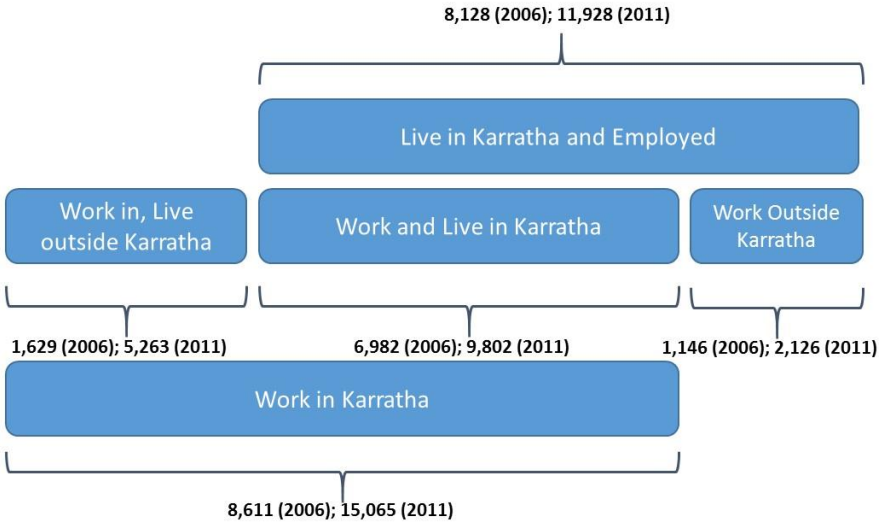
[24] Source: National Institute of Economic and Industry Research (NIEIR) ©2016. Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).



Workforce composition in Karratha: FIFO vs. Local Residents

Overview of resident and non-resident workers

The diagram below depicts the relationship between employed Karratha residents that work inside and outside Karratha, and employed non-residents that work inside Karratha (otherwise known as "Journey to Work employees"). Using ABS Housing and Population Census data from 2006 and 2011, one can observe how significantly



this relationship has changed between these periods[25].

[25] Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011

11,928 Karratha residents were employed in 2011. Of these, 2,126 worked outside Karratha, whilst 9,802 both worked and lived in Karratha. The remaining 5,263 workers that make up the city's workforce of 15,065 are comprised of non-residential workers. For the purposes of this analysis, the group of non-residential workers are referred to as Fly In, Fly Out (FIFO) employees.

The table below unpacks the composition of the Karratha workforce in more detail, and reveals the changing dependency on FIFO labour by industry.

Table 16: Karratha Workforce Composition

		2011				2006			
	% Change FIFO (2006-2011)	Total Workers	Resident Workers	FIFO Workers	% FIFO	Total Workers	Resident Workers	FIFO Workers	% FIFO
Total Industries	16.0%	15068	9802	5266	34.9%	8611	6982	1629	18.9%
Major 10 Industries									
Mining	16.8%	3433	2121	1312	38.2%	2036	1600	436	21.4%
Manufacturing	21.9%	650	402	248	38.2%	400	335	65	16.3%
Construction	13.7%	4060	1988	2072	51.0%	1351	847	504	37.3%
Retail Trade	-0.9%	618	599	19	3.1%	649	623	26	4.0%
Accommodation and Food Services	10.8%	728	460	268	36.8%	454	336	118	26.0%
Transport, Postal and Warehousing	6.7%	1027	670	357	34.8%	549	395	154	28.1%
Professional, Scientific and Technical Services	15.4%	680	355	325	47.8%	238	161	77	32.4%
Public Administration and Safety	5.6%	655	601	54	8.2%	497	484	13	2.6%
Education and Training	1.0%	621	604	17	2.7%	573	563	10	1.7%
Health Care and Social Assistance	9.4%	522	450	72	13.8%	412	394	18	4.4%

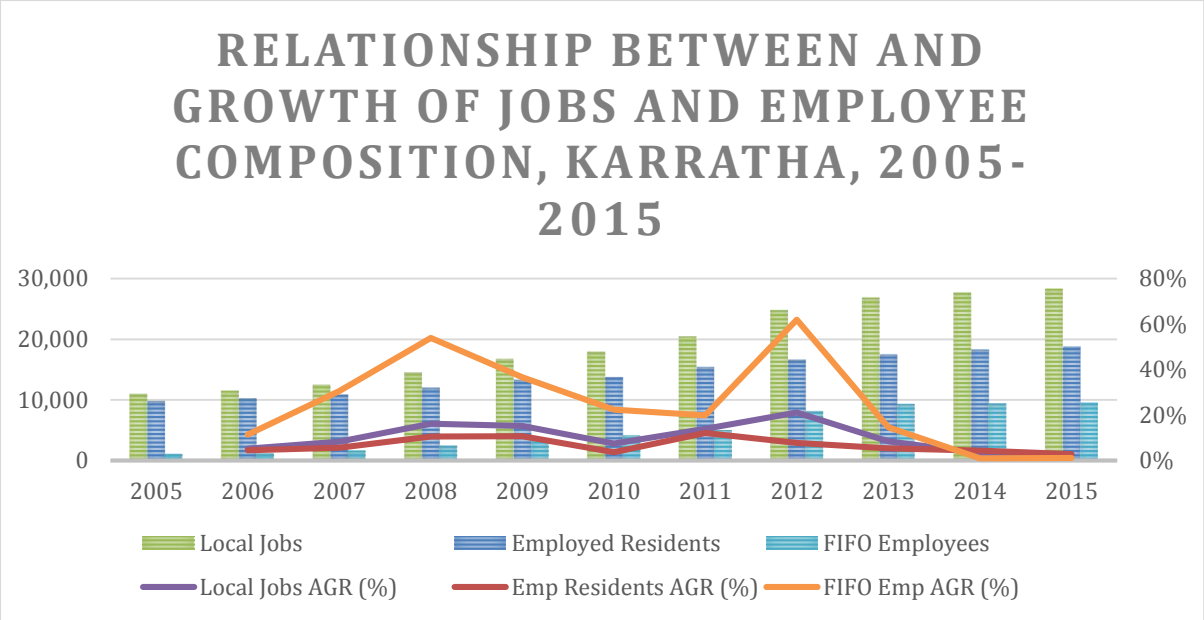
Between 2006 and 2011, the composition of the Karratha workforce had shifted dramatically towards non-resident workers. FIFO workers in Karratha increased from 1,629 workers in 2006 (18.9% of the total) to 5,266 in 2011 (34.9% of the total). This means that in these five years, the percentage of the total Karratha workforce derived from the local population decreased by 16 percent.

This shift is rooted in the major growth sectors over this period – Mining, Manufacturing and Construction, as well as affiliated service sectors such as Accommodation and Food, Health Care and Social Assistance, and Professional, Scientific and Technical Services. The composition of FIFO workers in Mining, Manufacturing and Construction increased between 2006 and 2011 by 17%, 22% and 14% respectively. On the other hand, despite a relatively smaller increase of approximately 7% over this period, FIFO workers in the Transport, Postal and Wharehousing sector remains significant at 35% of total workers.

Two sectors – Retail Trade, and Education and Training – experienced very little change in overall and FIFO employment over this period. This is likely due to their isolation from the towns commodity boom. Interestingly, the underlying stagnancy of these sectors is linked to the growth of the non-residential employment base – although the causality between them is unclear.

Trends observed in changing workforce composition in Karratha

Using data compiled by the National Institute of Economic and Industry Research (NIEIR)[26], one can extract trends in how the relationship between resident and non-resident workers in Karratha has changed with time. Estimated FIFO, or non-resident, workers in Karratha are derived through calculating the difference between



estimated local jobs and employed residents[27].

The figure above tracks the growth of local jobs between 2005 and 2015, and compares the changing composition of resident and FIFO employees. Illustrated is that through this period, FIFO employment grew at a consistently faster rate between 2005 and 2012. It also shows that a high proportion of new jobs were absorbed by FIFO workers – with this exemplified in 2008 and 2012. Following the slowdown in 2013, the growth of FIFO jobs declines to below resident jobs.

The much-quoted report by CMEWA on Resources Outlook 2015-2025 states the following:

"The contraction of the Pilbara workforce to 2020 will be driven by a decrease in the FIFO workforce. Over the short term, both the FIFO and residential workforces in the

[26] The data is derived from the National Economics micro simulation model based on census data, that is extrapolated to give a fuller picture of change year on year. The dataset reflects figures that are generally higher than the Census data as it is updated annually and not subjected to undercount.

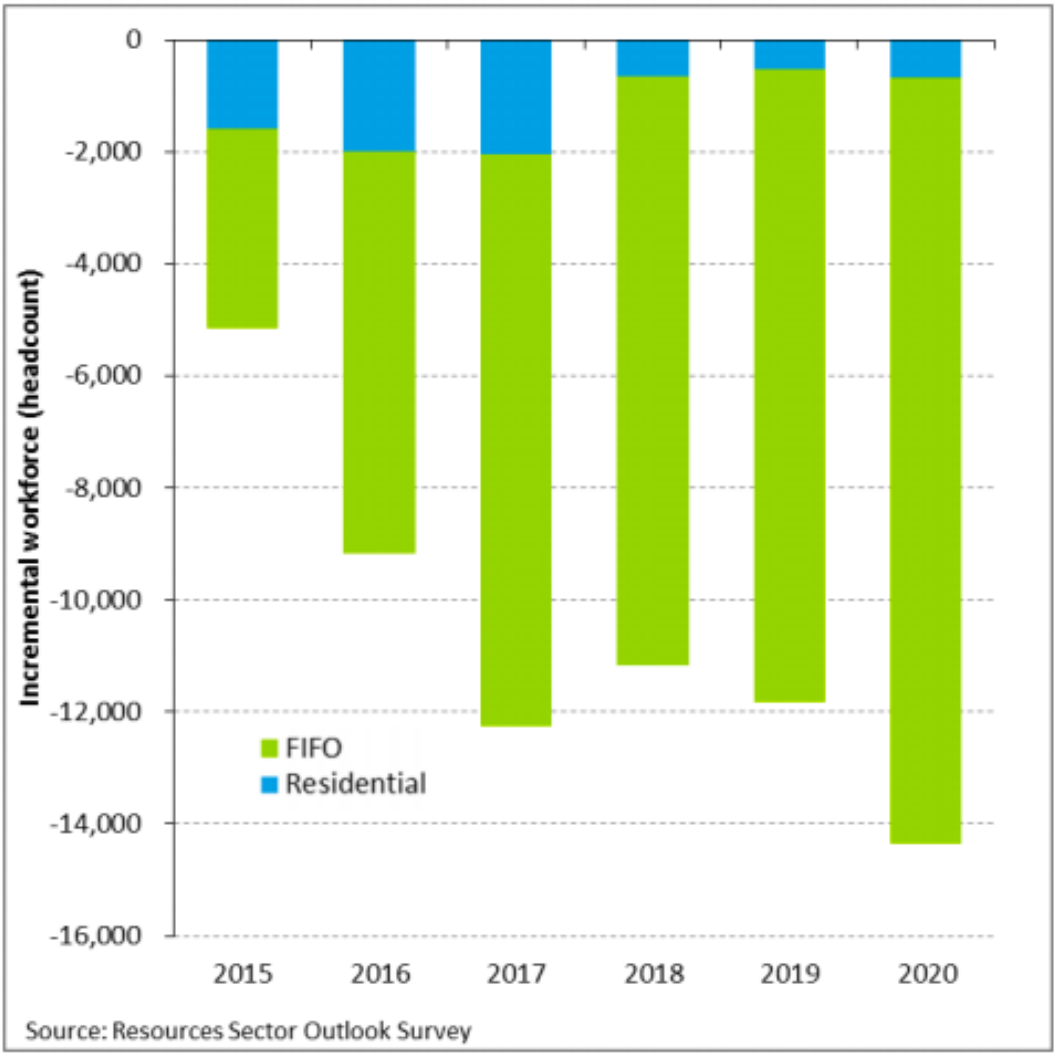
[27] Note that the NIEIR Employed Residents dataset does not consider whether employed residents work inside or outside of Karratha. Census 2011 provides the most recent assessment of this split, with estimates suggesting it to be between 3.9 and 14%. The figure above therefore likely overestimates Employed Residents by a comparable range.

region are forecast to decrease. By 2017 these workforces are expected to decrease by 10,200 and 2,000, respectively, compared to 2014 levels. After 2017, the FIFO workforce will continue to decrease and by 2020 is forecast to be 13,700 below current levels. The residential workforce is expected to grow, adding an estimated 1,400 positions between 2017 and 2020 albeit remaining marginally below 2014 levels. Some of the residential Pilbara workforce may transition to intra-regional FIFO arrangements, which may partially explain the decline in the residential workforce during this period. Despite these changes, accommodation will continue to need to be provided for FIFO workers in the region. By 2020, approximately 75% of the resources sector workforce in the Pilbara is expected to be on FIFO arrangements."[28]

Karratha may get a very modest increase in residential workforce by 2020 and a key factor is the degree to which the operational workforce transitions to (or remains as) resident in Karratha as opposed to operating in a FIFO mode, for which there is no clear trend.

[28] CMEWA report 2014

Pilbara resources sector workforce, by FIFO and residential, increment from 2014[30]



[30] Forecast data in the figure above are expressed as an 'increment from 2014', which show changes each year from a constant base year of 2014.

The key conclusion certainly for the next 5 years and probably for the next 10 years is that steady population growth will not be coming from the traditional resources sector.

It is also self-evident that population growth for a city like Karratha will only come from employment and business expansion in non-traditional sectors.

If Karratha reverts to the current WA norm for population growth of 1.3% p.a. then by 2025 its population will be close to 31,000 people.

2.6 Property Market Status

The dramatic change in the property market in Karratha over the last three years is presented in the following tables and graphs. For both the sale and rental market the decline has been steep. House prices have declined in the region of 60% over the period, while rents have fallen by the same amount.

This has two general implications depending on the perspective of the individual. If you want to move into the area then Karratha has become affordable from both a home ownership and rental perspective. In terms of multiplies to household income, house prices have fallen from about 5 times to about 3 times. Residents currently renting in Karratha can also now consider buying at these much more affordable prices.

However if you bought a property during the boom times from 2009 through to 2013 then you have probably seen a massive decline in your asset value. Investors (including resource companies) holding stocks of such assets also have to consider their options as to selling or holding. Declining asset value may also affect the ability of individuals to raise finance for their business operations where they are using their property as collateral.

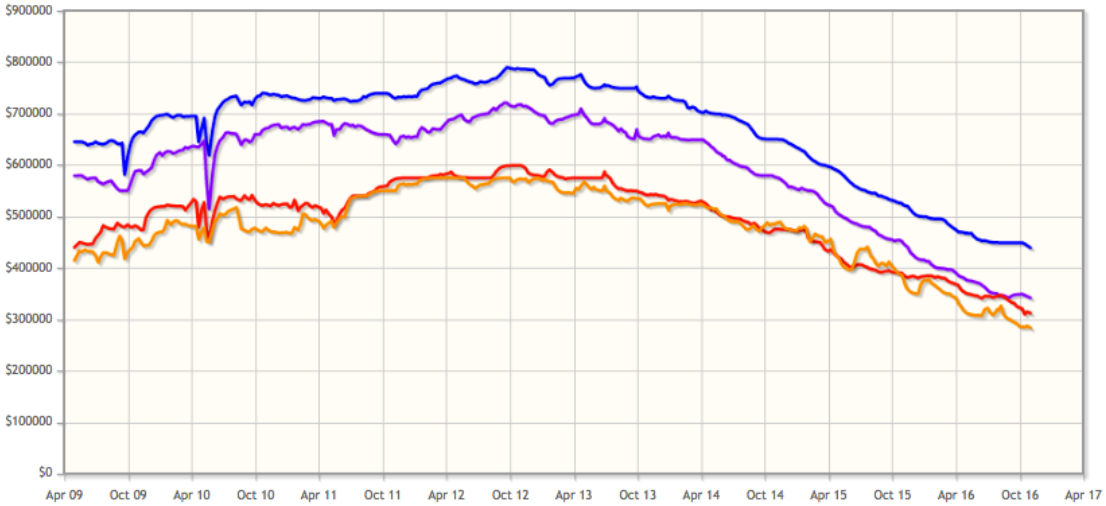
In broad terms the two positive outcomes going forward is that such prices could encourage more persons to consider changing from a FIFO to a residential status, and businesses wanting to establish or expand in Karratha can offer more affordable accommodation to their management and staff.

On REIWA as of early November 2016 there were 154 properties for sale. Prices ranged from $50,000 for a one bedroom unit in Bulgarra to $760,000 for a 4 bedroom display home in Baynton.

In addition the rapid increase in apartment offerings including high-quality serviced apartments means that the choice of accommodation types for long and short stay residents has been normalised in Karratha.

Weekly Asking Property Prices

Region: Northern WA



Month marked represents start of month.

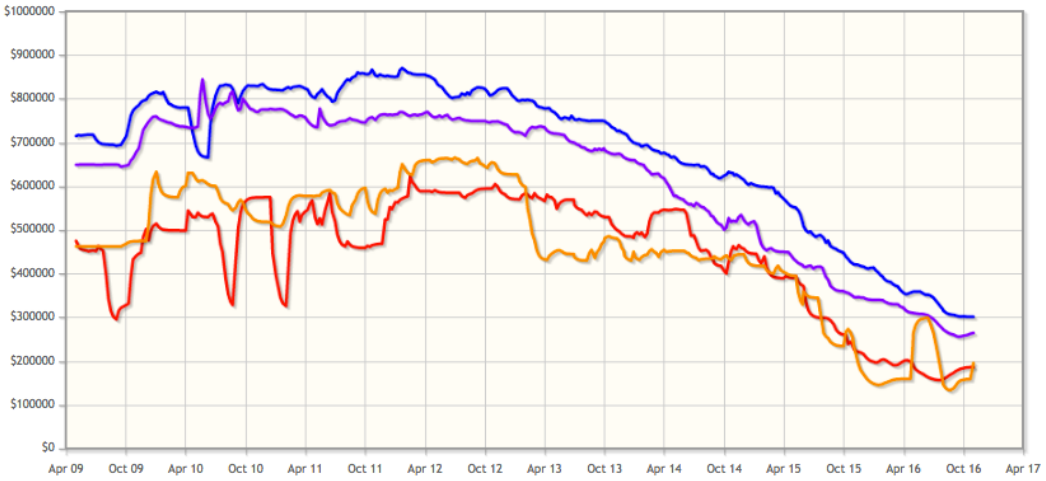
asking price for houses
asking price for 3 bedroom house
asking price for units
asking price for 2 bedroom unit

source: SQM research.com.au

SQM Research Weekly Asking Prices Index								
Week ending 8 Nov 2016			Change on prev week	Rolling month % change	Rolling quarter % change	12 month % change	3 year % change
Northern WA	All Houses	439.3	-4.3 ▼	-2.2% ▼	-2.2% ▼	-16.0% ▼	-39.9% ▼
	3 br Houses	341.9	-2.9 ▼	-2.0% ▼	-2.3% ▼	-23.8% ▼	-47.4% ▼
	All Units	312.2	-2.2 ▼	-3.3% ▼	-9.7% ▼	-19.4% ▼	-42.3% ▼
	2 br Units	283.6	-3.6 ▼	-0.9% ▼	-11.3% ▼	-25.5% ▼	-45.6% ▼

Weekly Asking Property Prices

Postcode 6714



Month marked represents start of month.

asking price for houses
asking price for 3 bedroom house
asking price for units
asking price for 2 bedroom unit

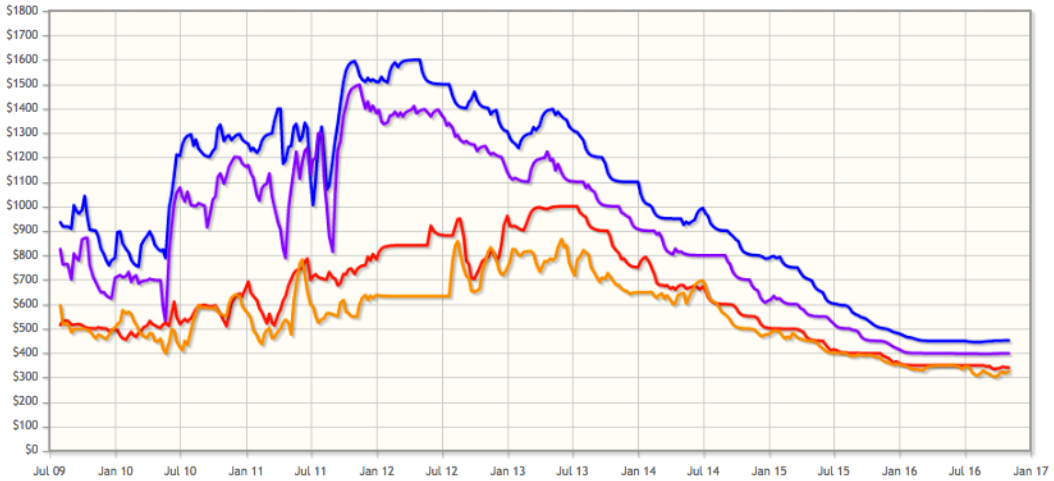
source: SQM research.com.au

SQM Research Weekly Asking Prices Index								
Week ending 8 Nov 2016			Change on prev week	Rolling month % change	Rolling quarter % change	12 month % change	3 year % change
Postcode 6714	All Houses	301.6	-0.1 ▼	-0.4% ▼	-5.7% ▼	-28.5% ▼	-58.8% ▼
	3 br Houses	264.7	2.0 ▲	2.5% ▲	-3.8% ▼	-23.7% ▼	-60.7% ▼
	All Units	186.5	0.2 ▲	1.3% ▲	18.5% ▲	-18.2% ▼	-63.0% ▼
	2 br Units	195.9	36.6 ▲	24.2% ▲	22.9% ▲	-16.7% ▼	-59.3% ▼

The rental market in Karratha as of early November 2016 showed 184 properties on the market with rent ranging from $140 a week for a bedsit in Bulgarra to $1,550 a week for a 4 bedroom executive style home in Millars Well. $400-$500/week appeared to be the median price for an average 3 bedroom house.

Weekly Rents

Region: Northern WA



Month marked represents start of month.

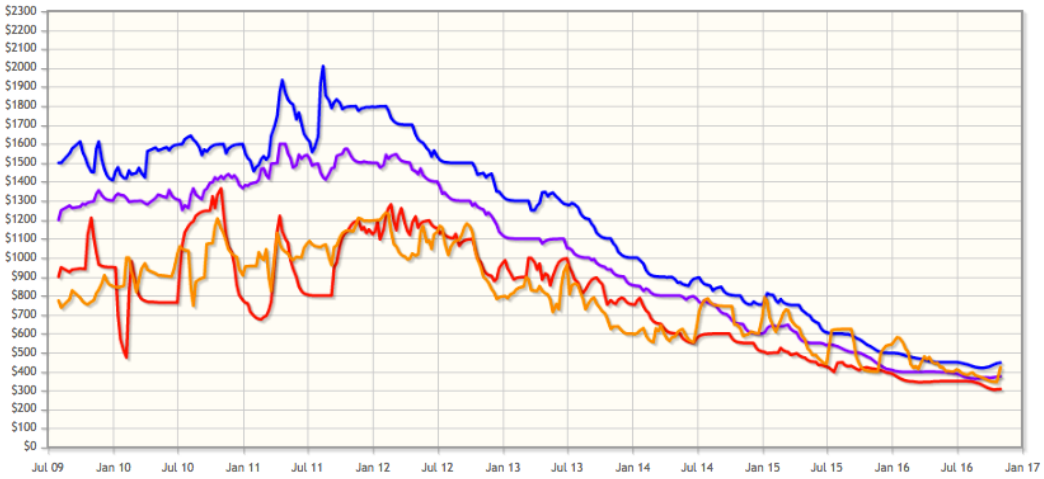
asking rent for houses
asking rent for 3 bedroom house
asking rent for units
asking rent for 2 bedroom unit

source: SQM research.com.au

SQM Research Weekly Rents Index								
Week ending 4 Nov 2016			Change on prev week	Rolling month % change	Rolling quarter % change	12 month % change	3 year % change
Northern WA	All Houses	452.0	0.0 ▲	0.1% ▲	1.4% ▲	-10.9% ▼	-59.1% ▼
	3 br Houses	399.9	0.1 ▲	0.4% ▲	0.5% ▲	-11.2% ▼	-60.0% ▼
	All Units	341.1	-1.1 ▼	1.2% ▲	-2.6% ▼	-14.7% ▼	-58.3% ▼
	2 br Units	324.6	5.4 ▲	5.8% ▲	1.4% ▲	-15.2% ▼	-52.2% ▼

Weekly Rents

Postcode 6714



Month marked represents start of month.

asking rent for houses
asking rent for 3 bedroom house
asking rent for units
asking rent for 2 bedroom unit

source: SQM research.com.au

SQM Research Weekly Rents Index								
Week ending 4 Nov 2016			Change on prev week	Rolling month % change	Rolling quarter % change	12 month % change	3 year % change
Postcode 6714	All Houses	447.0	3.0 ▲	4.8% ▲	1.3% ▲	-16.3% ▼	-59.4% ▼
	3 br Houses	375.3	2.7 ▲	2.2% ▲	0.7% ▲	-20.6% ▼	-60.1% ▼
	All Units	308.2	1.8 ▲	-1.2% ▼	-11.9% ▼	-26.3% ▼	-60.3% ▼
	2 br Units	423.0	77.0 ▲	20.0% ▲	9.2% ▲	5.1% ▲	-32.3% ▼

3. Stakeholder Consultation

3.1 Community Survey

An online survey of the Karratha community was undertaken as well as interviews with community representatives, and the outcome of the consultations is presented below:

360 responses were received for the community survey. However the survey cannot be taken as fully representative of the Karratha City community; over 83% of respondents were female whereas the female population of the city is approximately 40%. While there is some similarity in age brackets of respondents with the city profile, this sample over represented those in the 26-35 year age bracket (42% of the respondents) compared to approximately 21% on the total population in 2011.

Nonetheless the survey provides some insight into individual expenditure patterns and shopping preferences, albeit largely of younger females. It is also anticipated that some of the respondents were providing information on individual rather than household expenditure.

Approximately 70% of respondents, spend on average between $501-$2000 per month on goods and services (shopping, eating, entertainment, sport, local services). Approximately 15% spend less than $500 per week, while just under 15% spent over $2000 per month.

Online shopping a significant trend within the City of Karratha – availability, price and choice key factors

The survey highlighted the significance of online shopping within the City, with just over 25% of people shopping online at least once a week, just under 45% at least once a month and 30% shopping online infrequently or not a all.

51% of respondents spend on average less than $200 per month on online purchases, 36% spent between $201-$500 a month and a little over 12% spent over $500 per month on online purchases.

The main reasons people shopped online related to unavailability of items locally (90%); online shopping also offered significant advantages in terms of a wider choice for consumers and lower prices - both factors were mentioned by over 70% of respondents. Between 20% to 27% of respondents also mentioned better quality of products online and the ability to purchase their preferred brands.

Other Western Australia cities provide greater range of some items

36% of respondents mentioned they regularly purchased goods from other cities i.e. Perth, Geraldton etc. Survey results did not specifically mention individual cities,

however it is fair to assume that many of these purchases will occur either in Perth or other large towns. Some of the respondents in the qualitative interviews also mentioned that they undertook clothes shopping, typically for women and children, in towns such as Broome that had a wider diversity of stores and greater range of items. Many respondents in the qualitative interviews noted that chain stores (i.e. K-Mart) covered the basics in terms of clothing; however people were looking for independent shops offering a greater range of clothing styles.

Perception of gaps in professional, trade and retail services

Response rates to the questions on gaps in services vary greatly between the categories. 64% of total respondents answered questions related to professional services, 42% answered questions related to trade services and 80% answered questions related to retail services.

Professional services

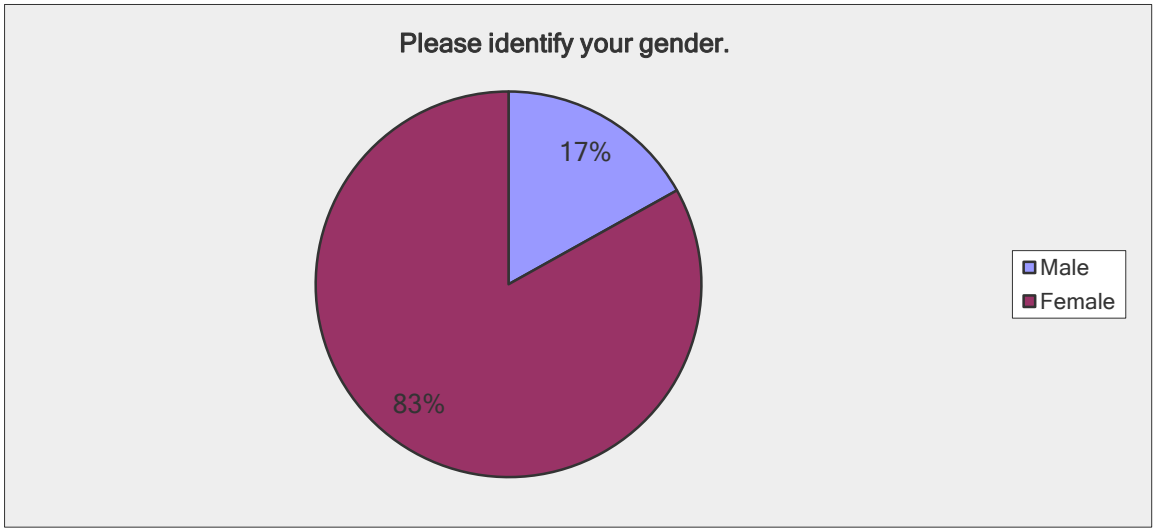
68% of respondents felt that there were insufficient education services such as tutoring, adult educational short courses. Some 43% of respondents felt that there were insufficient health services. This contrasts with a number of qualitative interviews that generally felt that health services were fairly good to excellent, though some individuals thought that particular specialist health services may not be available. Legal, financial (includes accounting and investment services) and business/management advisory services were also seen as insufficiently available by 32%, 22% and 18% of respondents respectively.

"Trade" Services

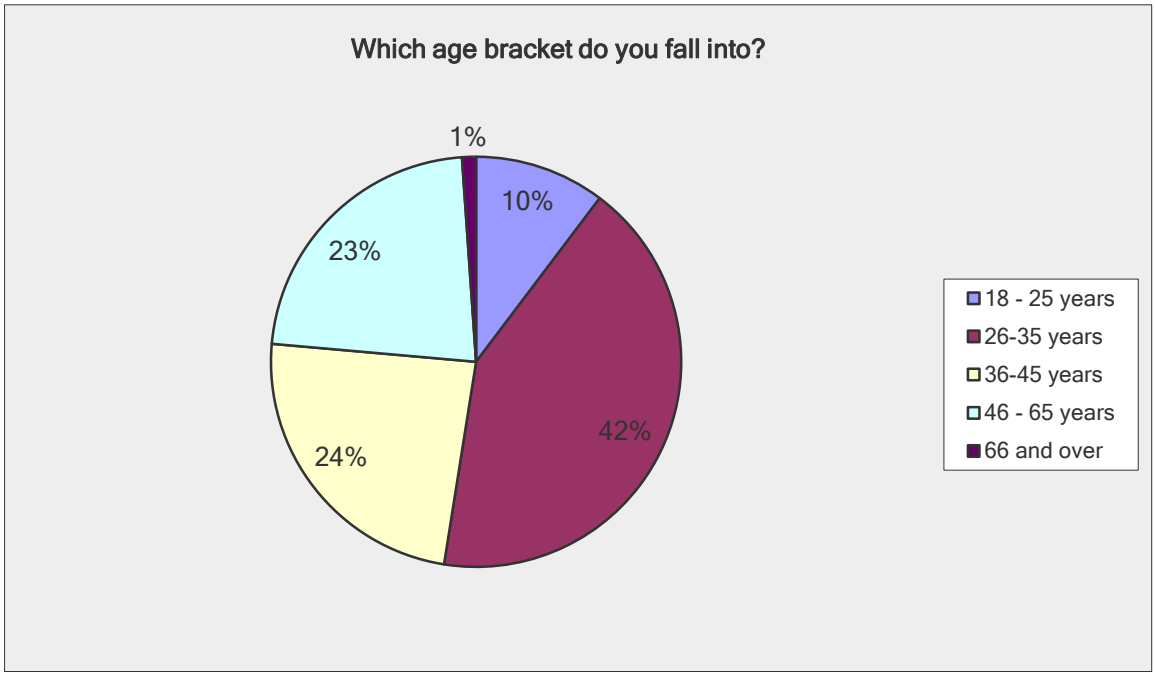
Almost half the respondents (48%) felt that health and wellness services such as gyms, dance, yoga etc were not sufficiently available within the City. Between 25% to 32% of respondents felt that automotive and marine services, construction services (architects, builders, carpenters, plumbers, electricians), home maintenance (gardening, cleaning) and beauty services (hairdressing, therapeutic) were insufficiently available. However, the lower response rate for this question (42% of total respondents) may partly be explained the large number of respondents were women who may not have a significant role in organising some of these services; some of the female respondents from qualitative interviews indicated that trade services that were the domain of their male partners.

Retail services

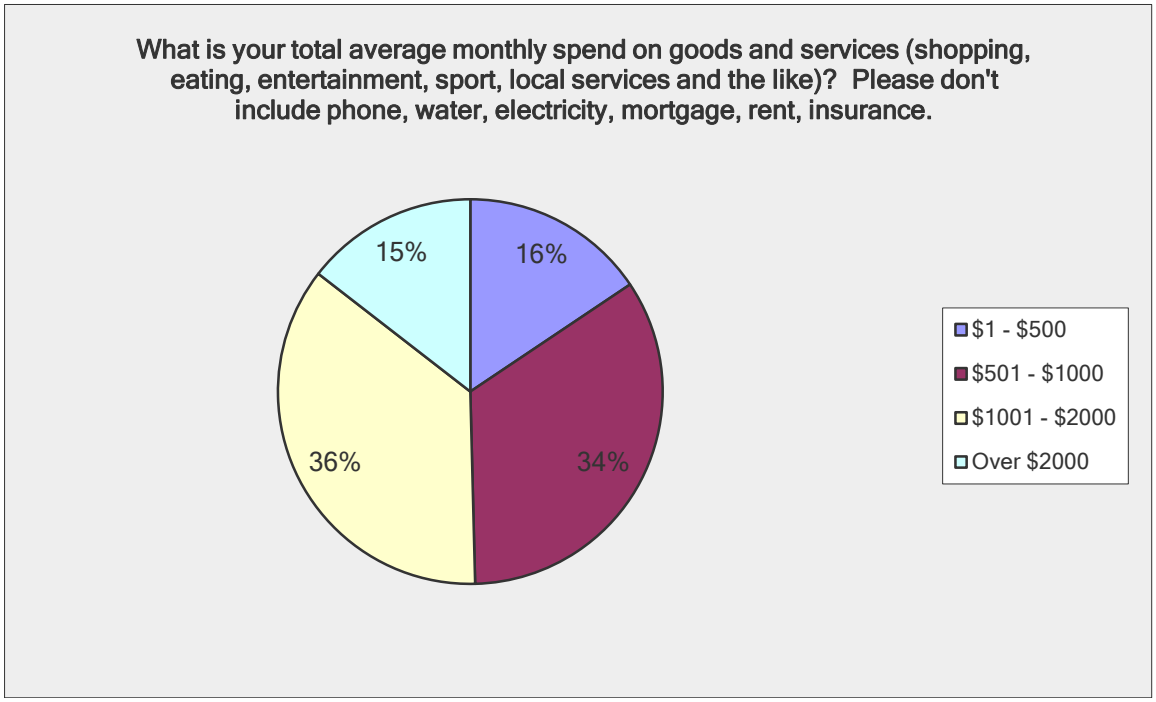
The retail stores that were insufficiently available according to respondents were chain bulk stores i.e. Bunnings, JB Hi Fi etc, (85%), clothing and footwear, especially boutique type stores (80%), department stores (66%), furniture and appliances (62%) and food outlets (52%). Other retail services seen as not sufficiently available were sports and leisure goods (49%), garden and outdoor products (43%). The percentage of people indicating hair and beauty retail services were not sufficiently available was only 17%.



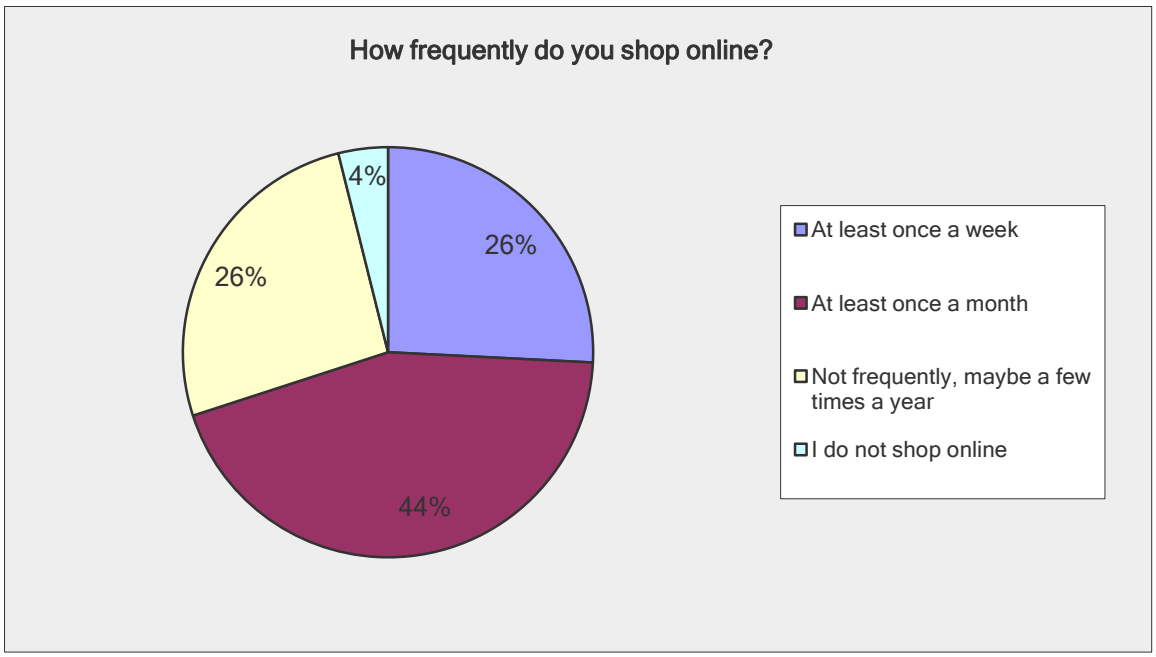
A large majority of respondents to the survey were female.



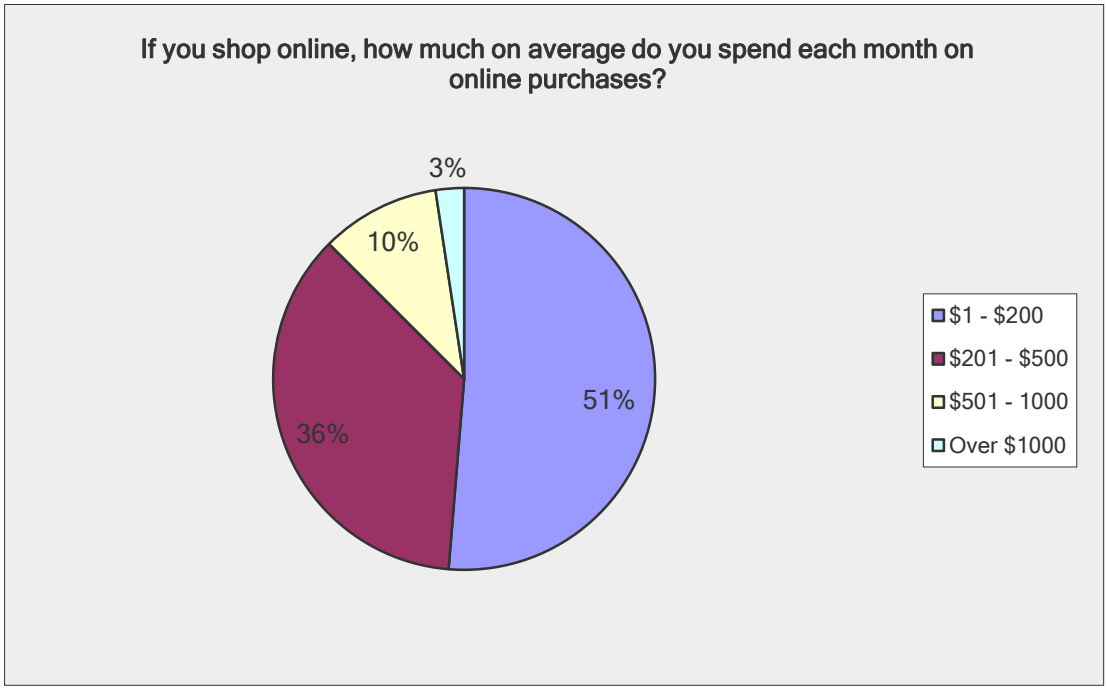
Over 65% of respondents were in the 26-45 years age bracket



70% of respondents spend between $501 and $2000 per month on goods and services



70% of respondents shop at least once a month online (including those who shop more frequently).

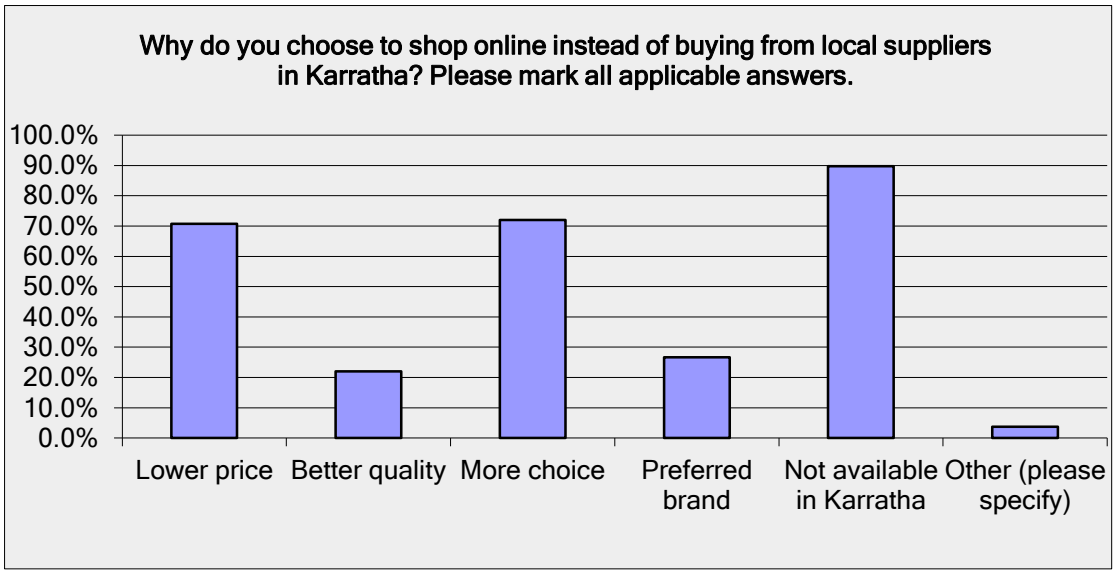


Over 85% of respondents spend between $1 to $500 per month for online purchases.

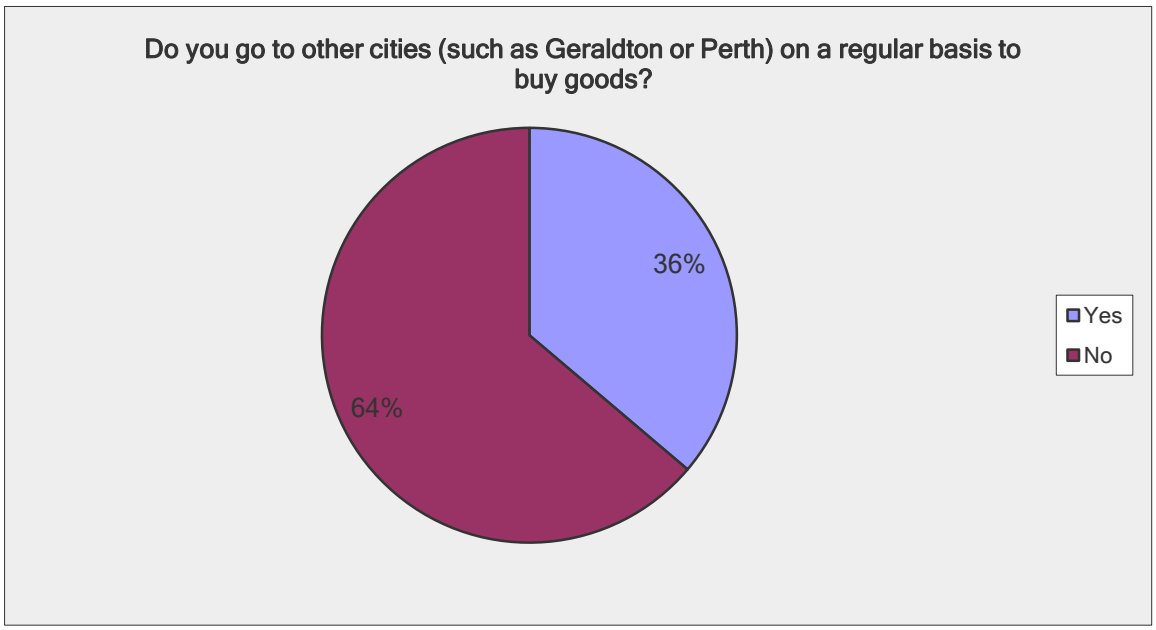
The range of products bought online is extensive but the products most frequently bought fell into the following categories:

Product Category	Ranking in frequency of mention
Clothing	1
Hair, skin & Beauty Cosmetics & perfumes	2
Children's clothes and toys	3
Footwear	4
Food groceries & coffee, health food	5
Home décor /wares & furniture	6
Books	7
Electrical & electronics	8
Camping, Boating & Fishing	9
Sports goods & clothing	10

Clothing dominated the online shopping by a significant margin.



The highest percentage of responses was that the products were not available in Karratha.



The products most frequently bought from other locations were as follows:

Product Category	Ranking in frequency of mention
Clothing	1
Footwear	2

Home décor /wares & furniture	3
Food groceries & coffee, meat, health food	4
Hair, skin & Beauty Cosmetics & perfumes	5
Books	6
Children's clothes and toys	7
Gardening products	8
Car parts	9
Gifts	10

Clothing and footwear were the dominant products bought in other towns.

Which products do you wish were available to buy from suppliers based in Karratha. These could be products that are not currently available or for which there is very limited choice or range available.

Product Category	Ranking in frequency of mention
Variety and quality clothing	1
Children's clothes and toys	2
Footwear	3
Home décor /wares & furniture	4
Fresh Food choices + health food	5
Books	6
Bunnings & hardware	7
Sportswear and goods	8
Butcher	9
Car parts & accessories	10

Once again clothing was the dominant category with the need for better variety and quality.

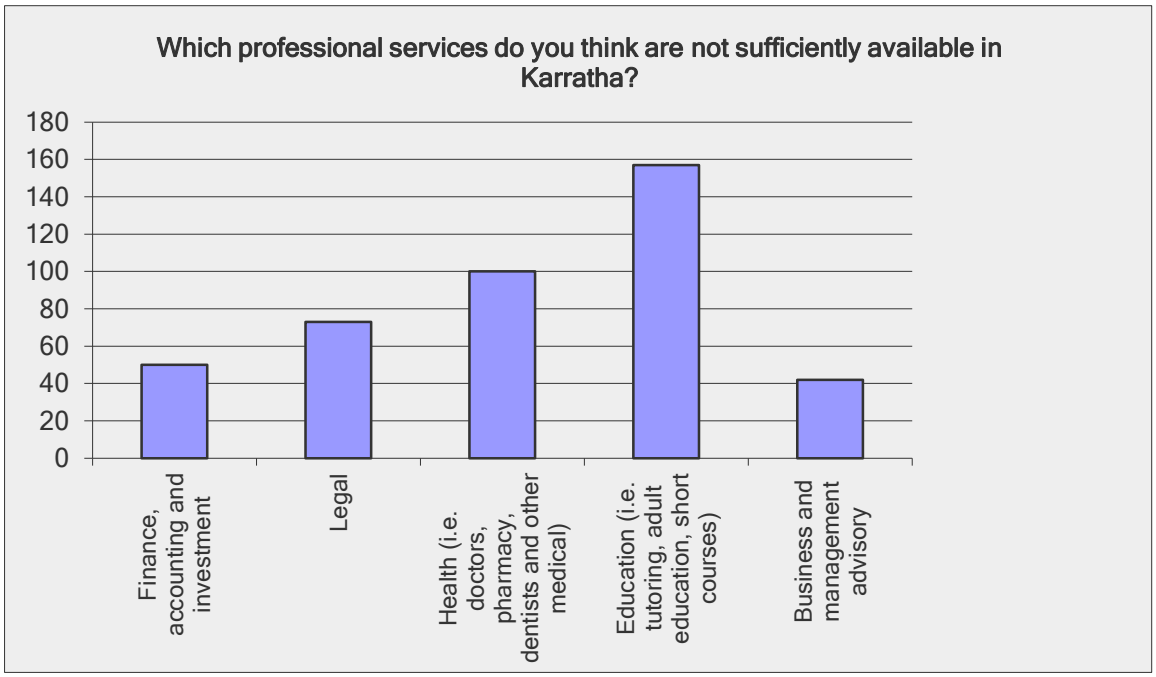
This was reaffirmed in the qualitative interviews, and the issue was one of a lack of variety. Women in particular commented on the desire to purchase clothing items for themselves and their families that were different from the generic items sold in the chain stores. A clear gap was identified in relation to an independent clothing store for women over 35.

Some interviewees stated that they purchased their furniture from 'down south' because of dissatisfaction with local service and a relative cost advantages; deciding factors include the range, and freight costs.

The people also mentioned purchasing computers and other technology products from other locations due to poor service or limited choice.

A number of people expressed the desire for a larger camping store such as BCF, because of the range, service and price competitiveness compared to local suppliers.

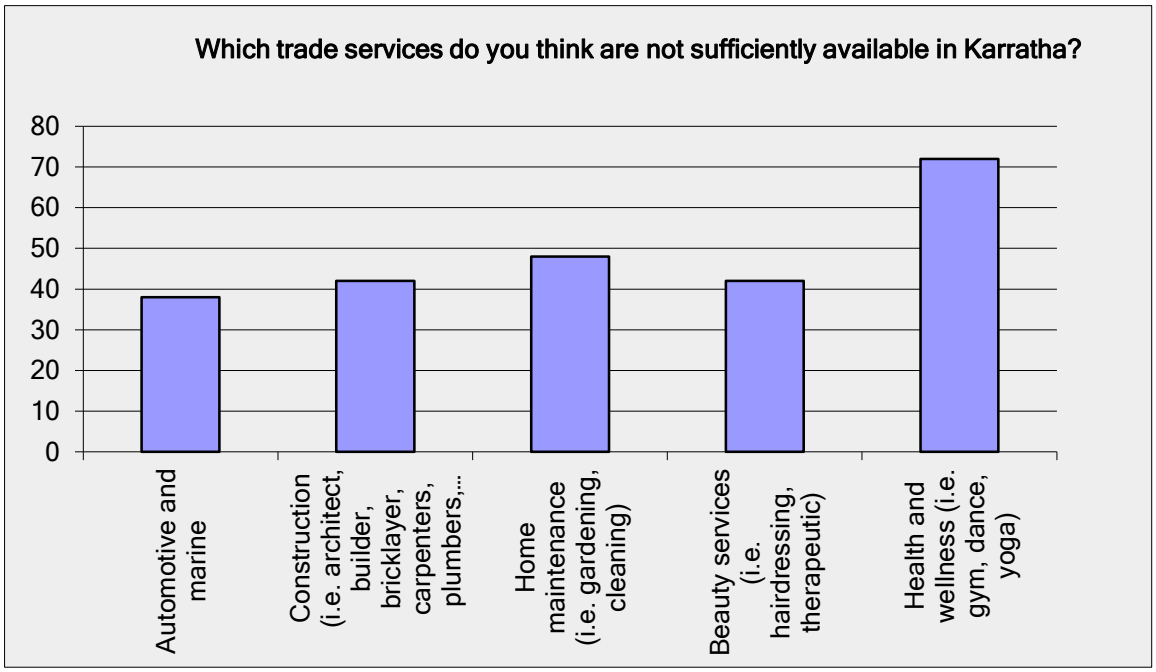
A number of respondents in the qualitative interviews indicate a desire for large chain stores such as Bunnings, IKEA , JB Hi Fi and Dan Murphy's, to provide some competition and wider choice. This desire for greater choice and competition extended to the fast food outlets i.e. Hungry Jacks to provide some competition for McDonald's. Respondents also commented on the desire for an independent grocer to provide an alternative to the "Big 2" – Coles and Woolworth.



Most respondents believe that professional services in the education field are not sufficiently available in Karratha and this was followed by health and related medical services. More Aged care facilities were also required.

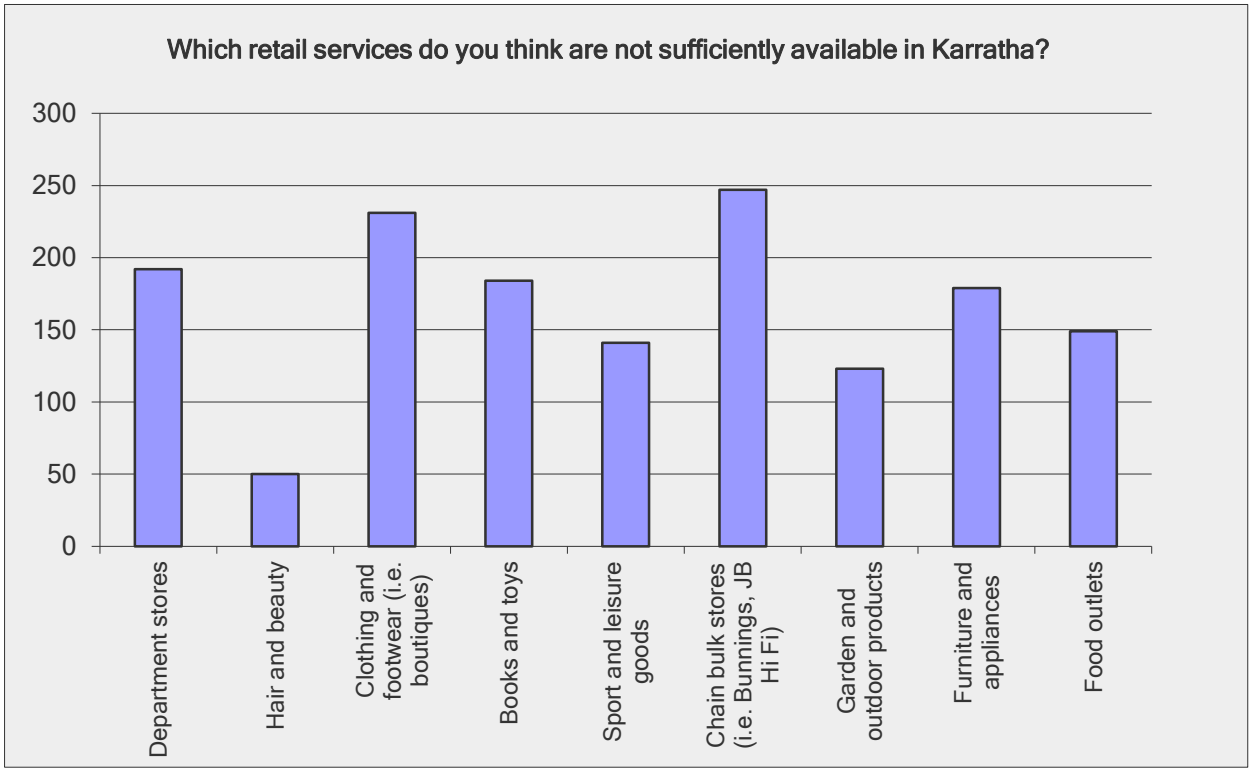
Overall, though very few of the qualitative community interviews commented on the lack of professional services with the exception of a few comments concerned about the downsizing of the local TAFE.
A number of people felt that the city was well serviced with the essential health or medical service i.e. doctors, optometrists, etc – though most of these services are situated in Karratha raising issues related to equity of access i.e. in Roebourne

medical facilities appeared to be limited. There were diverging views on the adequacy of specialist health services.



Most respondents believed that health and wellness services were not sufficiently available, with all other trade services approximately rated the same with a slightly higher requirement for home maintenance services. A large number of respondents skipped this question indicating that it is not a major issue or maybe dealt with by another family member.

From the community interviews there were a few comments that they purchased most of their boating equipment online because of dissatisfaction with local service, range and price. In terms of automotive trades it was noted that aside from Toyota many other types of cars did not have marquee service specialists



Chain bulk stores led the category of retail services that are not sufficiently available in Karratha. This was followed by clothing and footwear and then department stores. Books & toys and furniture and appliances also received more than half of respondents mention as not sufficiently available.

If you could choose one type of business or service which is not currently available in Karratha and which would make your life easier and more convenient, what would you choose?

There were was a wide variety of responses to this question but the types of business that received the most mentions were as follows:

- Bunnings
- Department Stores e.g. Myers
- Big W
- Butchery & speciality foods
- Boutique clothing & footwear

Bunnings dominated the list by a large margin. Qualitative interviews generally reaffirmed these finding. A few people commented on the lack of a butcher and independent food (grocery) and specialist food stores. A few people expressed the desire for a bookstore or music store, but also raised the issue of whether these outlets would be commercially viable. An indoor cinema and indoor recreation facilities i.e. bowling and other recreation facilities that would provide a wider range of recreation opportunities for different age groups.

Which business or service that is currently operating in Karratha would you miss the most if it closed down?

The following outlets were mentioned the most frequently:

- Café & restaurants
- K-Mart
- Department store
- Clothing & footwear stores
- Food and groceries stores
- Supermarket
- Gym & sports (including Leisureplex)

There were also specific mentions of the following though to a lesser degree:

- Home appliances
- Hair and beauty
- Hardware
- Auto shops
- Bakery
- Garden store

Qualitative interviews reaffirmed the findings above, in particular cafes and restaurants providing a more pleasant social atmosphere. Though a number of people felt that essential business services were generally well covered, a few of them expressed concern that some of the same type of businesses were owned by one person thus limiting choice. There was a belief that new entrants would most likely fill the gap if a successful business left town.

Qualitative interviews also provided some additional insights:

- For outlying towns the loss of the general store or fuel station present a major inconvenience for residents;

- Childcare, playgroup and after care facilities, though available were seen to be highly sought after, with limited places fiercely contested;

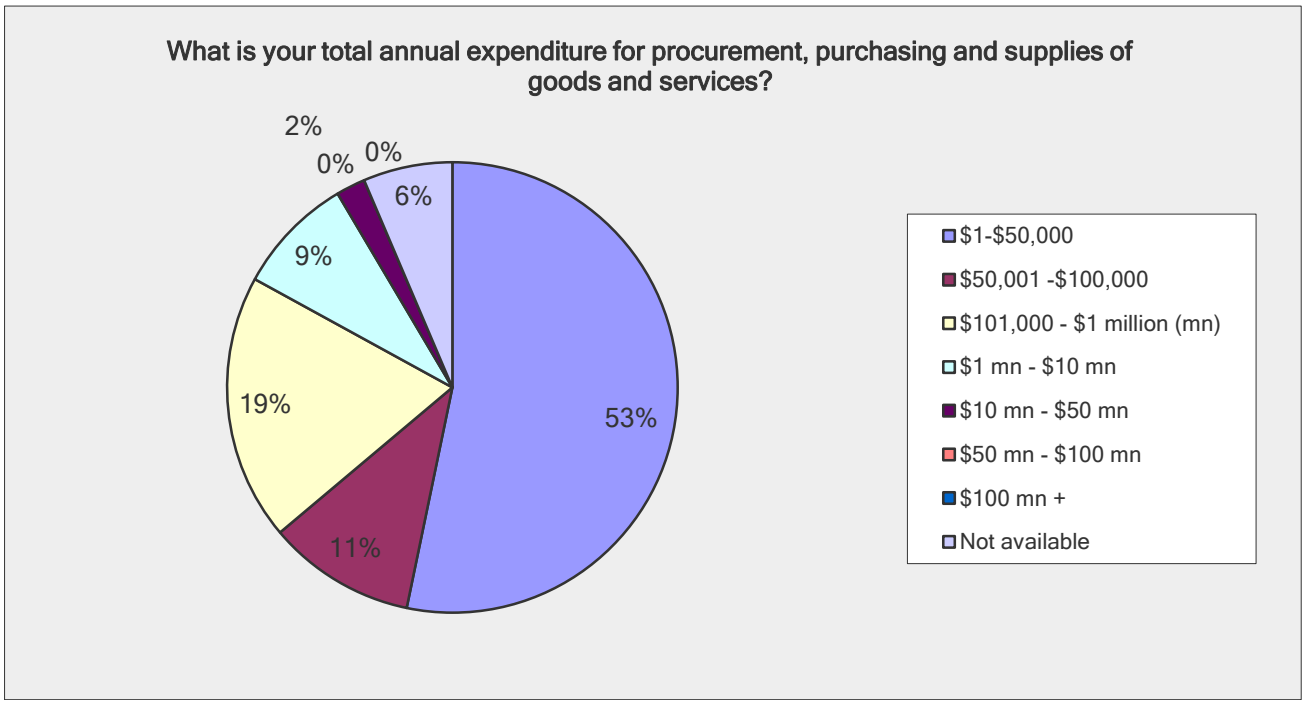
- The Leisureplex complex, and perhaps by implication the Youth Shed, were seen as providing valuable recreation facilities for a range of age groups.

There was an overall impression from the qualitative interviews that residents were relatively satisfied with what the city could offer in terms of range businesses and business related services that was sustainable given the population of the city. It was noted that, for example, while Dampier residents might prefer additional restaurants and cafes it was unlikely the population could sustain any additional ones. Recent closures of cafes were given as an example of the current commercial reality; in other cases badly needed upgrades or refurbishment required additional profit and turnover to attract customers, and is not likely to occur in the current economic

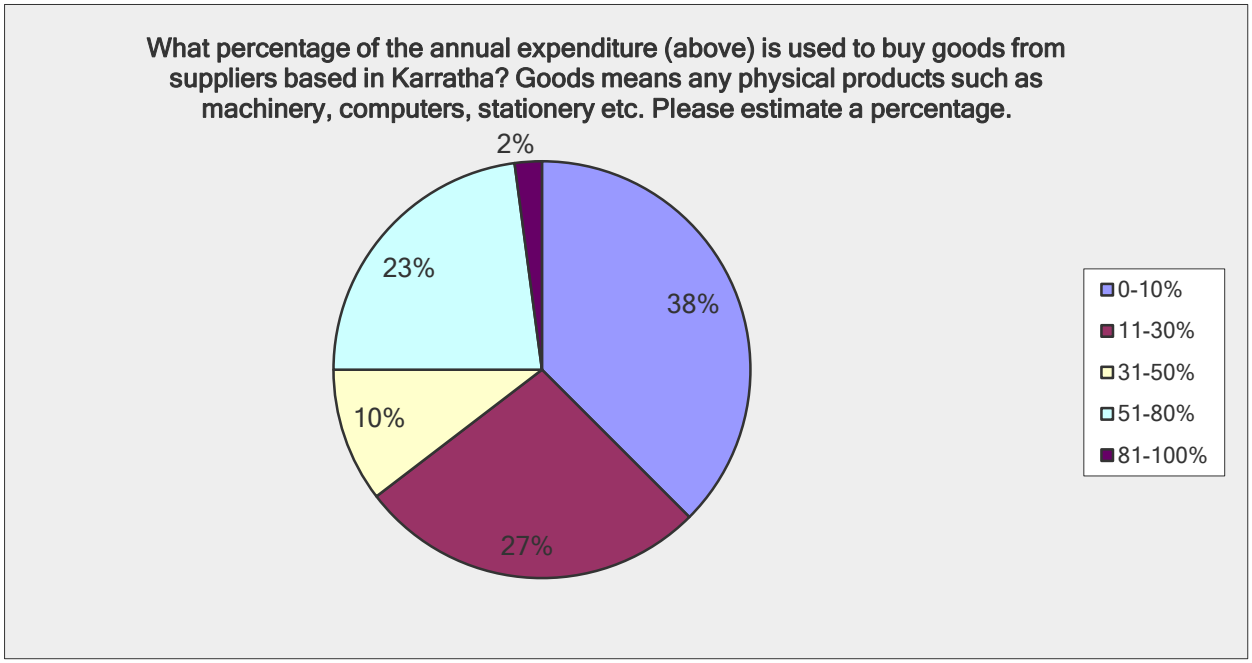
climate. There was a recognition of needing to make a distinction between a wish list of residents in terms of filling gaps with new facilities and what is commercially sustainable.

3.2 Business Survey

An online business survey was undertaken, however the number of respondents was low and therefore the analysis will be treated as anecdotal rather than having statistical validity. Interviews were also conducted with business representatives.



Over 60% of the respondents have annual procurement of between $1-$100,000 which means most respondents where in the small business category.



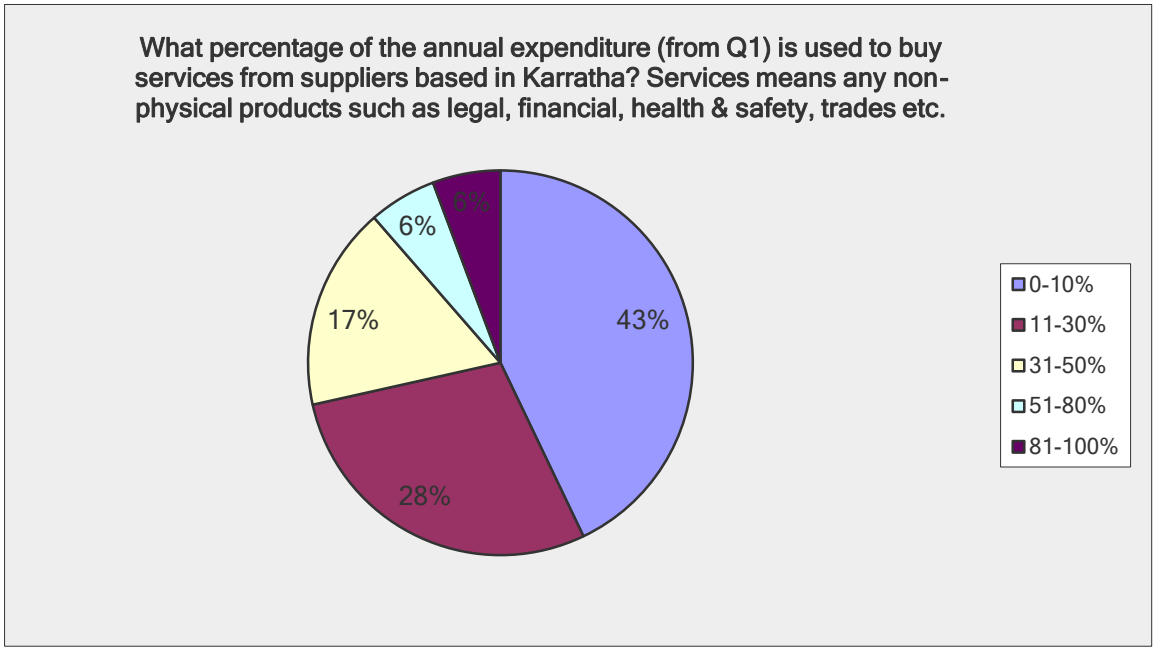
65% of respondents spend less than 30% of their annual expenditure on goods from suppliers based in Karratha.

What are the major product groups that you DO NOT BUY from suppliers based in Karratha?

- Computer equipment & supplies
- Furniture
- Motor vehicles and parts
- Office equipment, supplies & stationery
- Clothing & footwear

What products would you most like to see being provided locally in Karratha for your business?

Printing and stationery received a number of mentions, otherwise the response covered a wide range of product categories. The overarching message was wanting a greater range across the business consumables and more affordable prices.



71% of respondents spend less than 30% of their annual expenditure on services from suppliers based in Karratha.

What are the major services that you DO NOT buy from suppliers based in Karratha?

The following services received the most frequent mentions:

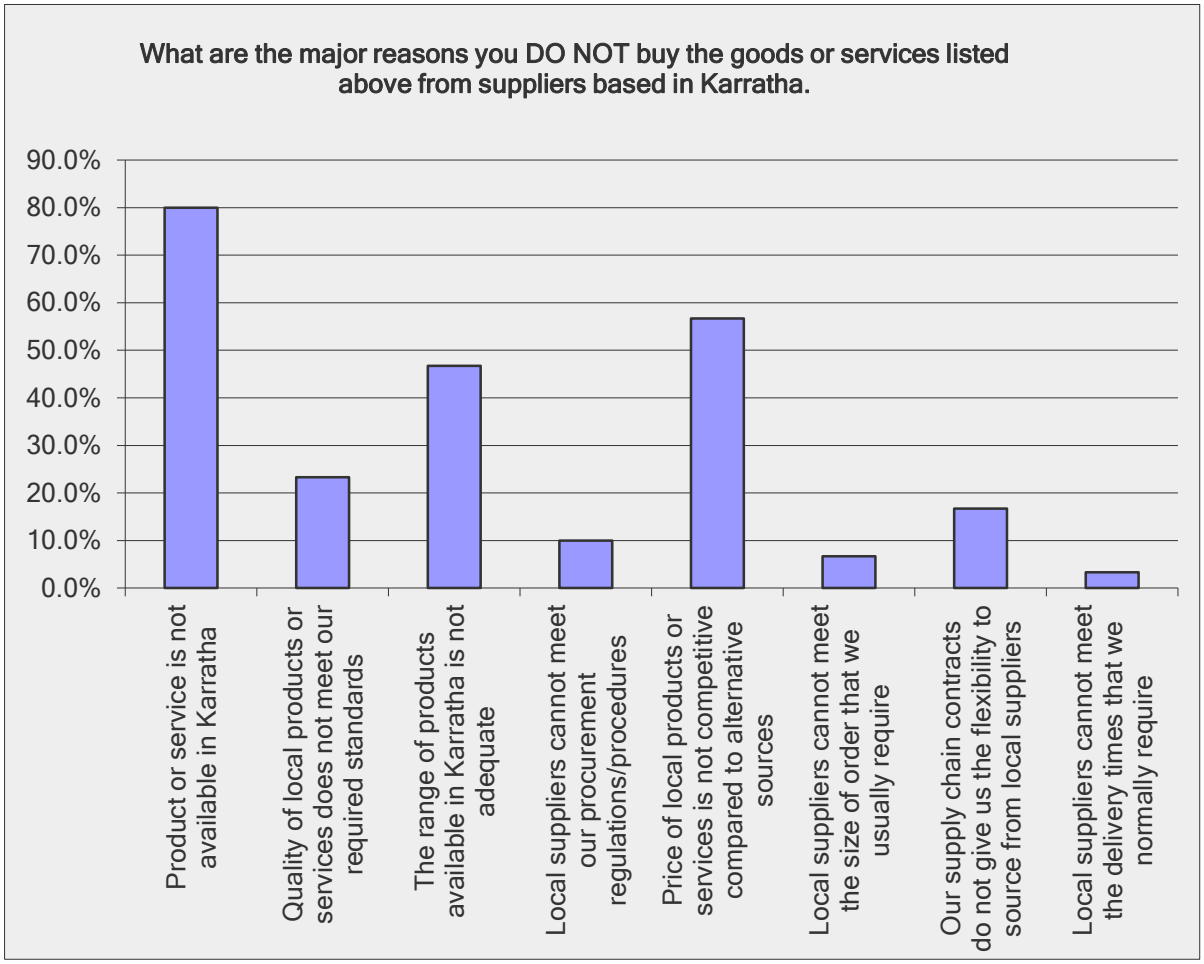
- Accounting and financial services
- Graphic design and IT services
- Legal services

What services would you most like to see being provided locally in Karratha for your business?

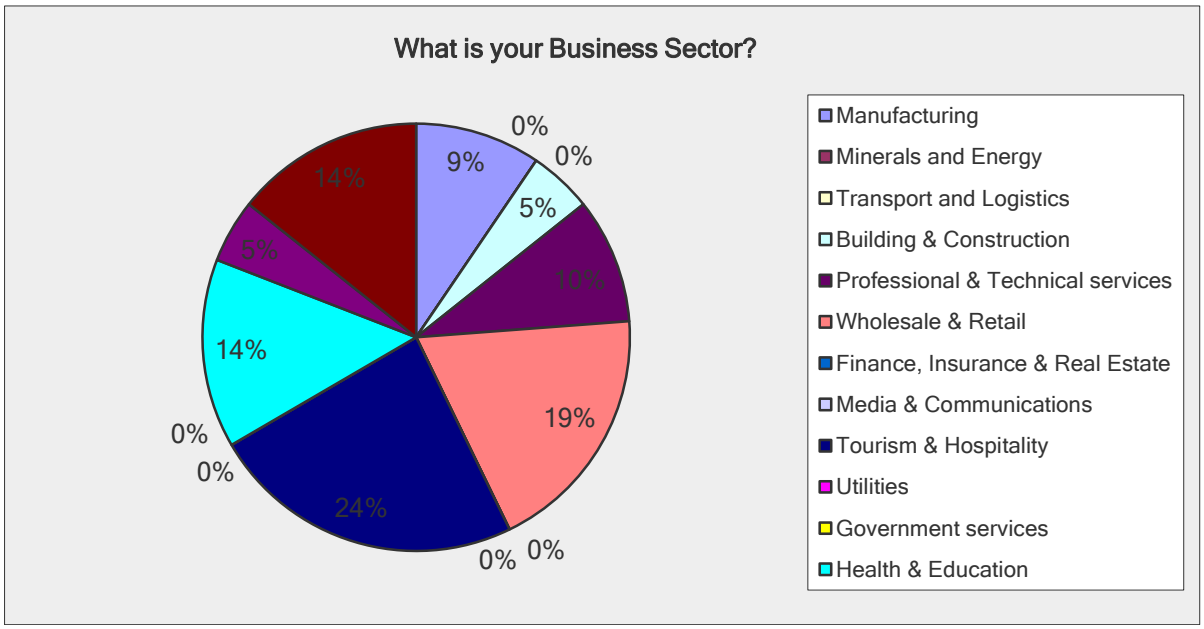
The following services received the most mentions:

Accounting and financial services

Printing and design services



Non availability received the highest number of responses, followed by non-competitive pricing and an inadequate range of products and services



Respondents came from a wide range of sectors.

Respondents were asked to provide any additional feedback:

Often the choice is also about attitude. Many Karratha suppliers are amongst the best I've ever dealt with; but some take the attitude that they're a monopoly or near monopoly in the area and customers can take what they're given. We don't, we look elsewhere.

Cost of flying in specialist presenters for professional development is too costly

Access and provision of public transport, removes the equity in access to services linking the communities in the region.

One of our biggest costs is road transport, if we had access to rail transport, would our freight costs be less, and could we pass on any savings to our customers?

Commercial rents need to come down

3.3 Community Engagement Key Observations

Improve perceptions, local knowledge and conditions in relation to local business preferences for tenders

Several respondents in the qualitative interviews either questioned or expressed dissatisfaction with the City's tendering for contracts. In some cases this reflected a limited understanding that there was a 10% local business preference in the tendering process, or even questioned whether this was in fact being applied consistently. Several local businesses commented that the response to their queries why local businesses were not successful appeared to be stock standard from the City i.e. value for money considerations favoured external bidders. A number of examples were given where tenders were giving to external companies, only to find that issues arose after the award of the tender i.e. winning bidder unable to live up to promises level of delivery, lack of monitoring on promises of local employment or sub contracting as mentioned in the bid, or provision of services or products that were not suitable for local conditions. In one specific for example tender requirements for the nature of the product were so strict that local bidders were unable to complete with the interstate supplier of the product there was able to undercut local businesses.

Specific suggestions were made in relation to the City's procurement process that would facilitate local business opportunities:

- Provide specific conditions in proposals favouring local employment
- Monitor awarded contracts in relation to requirements for local contracting or employment
- Increase awareness and understanding among local businesses, in particular Aboriginal Corporations and businesses, on the process and technical requirements of successful tenders; this may include optional local information sessions, where prospective tenderers can ask questions to better understand the project context and requirements of the City

Actively support Aboriginal business opportunities[29]

Some of the Aboriginal corporations were reasonably well versed with the city's tendering processes, while others indicated that they lack sufficient information of the processes involved, the potential opportunities or the skills to complete a competitive tender proposal. Some of the Aboriginal businesses contacted indicated they were not aware of the recent Indigenous Tourism Conference, the potential business incubator model, or local aquaculture and agriculture projects being undertaken by key organisations in the local community. A number of suggestions were made to facilitate Aboriginal business development, ranging from specific conditions to having a more open door policy with businesses could discuss potential opportunities with the City. A few respondents suggested that the Reconciliation Action Plan needed to be more than fine words and resulting actual business opportunities; in short it was a call for the city to be more pro-active in identifying and *implementing* its corporate social responsibility among Aboriginal businesses. It is unclear to the extent that the city as delivered Indigenous Cultural Awareness training staff; this may present an opportunity for some aboriginal businesses, and reinforce the benefits for other organisations in doing the same.

Mention was made that was possible for Perth-based Aboriginals business people with distant connections to the Pilbara to compete on an equal footing with local businesses in terms of their Aboriginality. It was felt that the City or other regional-based organisations could advocate for greater integrity in the definition of regionally based Aboriginal businesses.

A few respondents also noted the potential for the City, in partnership with other organisations such as the KCCI, RDA Pilbara or PDC, to place greater emphasis on corporate social responsibility and being more proactive in supporting aboriginal businesses, via several pathways for example:

- Preferential conditions, for example additional 5% price preferential for Aboriginal businesses that employ locals
- Actively reporting on local aboriginal businesses, winning City contracts
- Facilitating and showcasing/promoting/advocating on their behalf to appropriate investors, government departments or clients, i.e. facilitating the partnering of aboriginal businesses with other local businesses or development mentoring support. This would also mean ensuring that government departments consider the implications of a decisions on local business and aboriginal communities i.e. Dept Housing relocating clients from Roebourne to Karratha has a negative effect on the Roebourne population and hence local businesses
- Facilitating a meeting or workshop among Traditional Owners, Aboriginal Corporations to identify synergies and opportunities so that they were not competing in an overcrowded market, consider strategies that could support local Aboriginal businesses i.e. development of reciprocal relation to business

[29] See also ANNEX 1 for compilation of comments and observation from interviews with Aboriginal Corporations

relationships and price discounts and incentives for supporting aboriginal businesses. While not all Aboriginal Corporations saw this as a viable option in terms of leading to change, others saw the City as neutral broker able to facilitate an improvement amongst those Corporations that were willing to participate
- Proactively communicating with Aboriginal businesses about future opportunities

City to actively promote and facilitate opportunities for business and services

A number of the respondents felt the city was doing a reasonably good job at being proactive and business friendly. Nonetheless, there are a number of opportunities that respondents felt could be pushed a bit further to create opportunities for local businesses. Some of these opportunities will produce income for existing businesses, or retract new businesses and potentially spin-off opportunities for existing businesses.

Proactively identifying and promoting business opportunities to either local or external investors:

- Tertiary education hub, this may provide some opportunities for school leavers to remain in the city and continue the study online with support from local institutions or locally-based experts in particular fields. It might be possible to make arrangements with some universities to place interns with some institutions here that they gather regional experience i.e. medical students based at the new medical centre. This has the potential that if they enjoy the regional lifestyle some may decide to stay here longer
- Aged care facilities, as the City has become more attractive, and the population has increased and a number of generations have grown up and lived in the City the possibilities for limited aged care facilities has improved
- Enhance local tourism and recreation opportunities, i.e. upgrading golf course facilities such is the clubhouse to provide an alternative entertainment venue. Upgrading facilities around the local dam i.e. recreational opportunities for boating and fishing, restaurant/catering and indigenous cultural tourism where is lifestyle activities as well as facilitate some business opportunities. Possibilities exist to be more proactive in promoting tourism opportunities, i.e. Turtles/Whales etc provided there is sufficient local operators that are willing to give any of the potential
- While a number of respondents commented on the large number of community events are held within the city and surrounding towns, some people mentioned fostering specific events in the town centre that would bring people into town and encourage them to purchase local products and services, either available at the event, or in nearby shops that I might visit whilst attending the event
- The city could also promote opportunities related to fill some of the gaps identified elsewhere in this report i.e. recreational facilities for teenagers and young people, selected bulk stores and also smaller boutique clothing chains etc.

- Many community groups, not-for-profit organisations and regional and national NGOs operate within the City an employee staff, and contract services for building and landscaping maintenance, or just local supplies etc; anecdotal evidence suggests expenditure by these organisations tend to favour the local economy. Number of respondents commented favourably on the support they received from the city in terms of writing grant applications to receive project funds. Supporting these types of organisations attract funding, and assisting them find well priced accommodation may also contribute to the local economy.

City vision to consider equity of access and service delivery across the City

A number of respondents, particularly those in outlying towns such as Dampier and Roebourne, highlighted issues related to more equitable access to businesses and services within their localities. The general view was that the these business services were being concentrated in Karratha, with the outlying towns seeing a reduction in servicing i.e. loss of Post Office, restaurants and cafes in Dampier, lack of plumbing and electrical businesses (to name a few) in Roebourne. Though the major drivers of these decisions are commercial considerations it was felt the City could at least promote equity in the access by the following strategies:

- Have a clear strategy for how it saw the outlying town developing, and
- Advocate, alongside other regional partners, to ensure that government departments and businesses were fully cognisant of the social and economic impacts of their decisions on the outlying towns within the City

Minor refinement and how the city provides selected services will also facilitate more conducive environment for some local businesses, for example improved signage for tourist, cafe or public facilities, provision of public toilet facilities, organising parking, in particular for large caravans, may generate additional spending in small towns such as Roebourne. One respondent noted in relation to improved signage and parking facilities for tourists and the that City *"just need to make a decision and speed things up; we just want the same as other parts of the City"*

Use regulatory and planning controls to create an enabling environment and support established businesses and services

Several respondents in the qualitative interviews mention the rise of home-based businesses. These businesses tended to either offer more unique products not available in the stores, or the convenience of local services in people's homes, local neighbourhood or lower costs. i.e. hairdressers, photographers etc. Nonetheless many of these businesses were of a transient nature, often reflecting a secondary source of income for the household.

A few respondents recognised that the City's zoning system for applications related to mining related accommodation attempted to foster a larger resident population within the City. However, a number of other respondents were either not aware of this initially or felt that the city could do more in terms of encouraging mining companies to either build within the city limits, or rent more existing housing within

the City rather than building new ”mining suburbs”, or camps further out of town. The City may need to work collaboratively with other government departments to investigate what options it has in influencing the location and nature of accommodation provided by mining companies.

A few people mentioned the centre of town was not so attractive for holding events or for shopping for example the central car parks lack the shade, are basically all tarmac and extremely hot in summer. Other regional towns have a swimming pool near the centre and shaded car park i.e. Newman, acting as a drawcard and making it more attractive for people to come to town and stay longer.

Online shopping a significant trend within the City of Karratha – availability, price and choice key factors

The survey highlighted the significance of online shopping within the City, with just over 25% of respondents shopping online at least once a week, just under 45% at least once a month and 30% shopping online infrequently or not a all. Some 51% of respondents spend on average less than $200 per month on online purchases, 36% respondents spent between $201 to $500 a month, and a little over 12% spent over $500 per month on online purchases. These figures broadly align with anecdotal evidence suggesting that Karratha has one of the highest online shopping rates within Australia, and that this trend is here to stay.

The main reasons people shopped online related to unavailability of items locally (90%); online shopping also offered significant advantages compared to local businesses offering the same or similar type products in terms of a wider choice for consumers and lower prices- both factors were mentioned by over 70% of respondents. Between 20 to 27% of respondents also mentioned better quality of products online and the ability to purchase their preferred brands. Many shoppers also shop online through habit, searching for a bargain and disappointment with the level of local service. Several respondents noted the lack of service and higher prices offered by local businesses as a major disincentive to local purchasing. Anecdotal evidence suggests that 30% of online shoppers over 50% of online shopping by volume.

Given the trend in online shopping some local businesses could do more to operate in this space to capture an alternative income stream. Online sales should be seen as a complementary strategy to increasing foot traffic. Information sessions informing local businesses of the advantages and most appropriate strategies, followed by mentoring and support, to increase their revenue from online sales, may assist some businesses. For example, local businesses that are related to external businesses providing online services, could offer ancillary services to bring people into store or receive some fee for facilitating transactions i.e. drop-in and try, drop off, pickup services. Online shopping could also be linked to the ‘Buy-Local’ campaign.

4. Sector Analysis

4.1 Overall Business Climate

Number of Businesses in Karratha - As at 30 June

	2011	2012	2013	2014
Number of Businesses - Number of non-employing businesses (no.)	656	681	652	648
Number of Businesses - Number of employing businesses: 1-4 employees (no.)	272	271	310	297
Number of Businesses - Number of employing businesses: 5-19 employees (no.)	126	126	133	132
Number of Businesses - Number of employing businesses: 20 or more employees (no.)	52	48	51	58
Number of Businesses - Total number of businesses (no.)	1 106	1 126	1 146	1 135

Business Entries - Year ended 30 June

	2012	**2013**	**2014**
Business Entries - Number of non employing business entries (no.)	165	174	153
Business Entries - Number of employing business entries: 1-4 employees (no.)	66	68	73
Business Entries - Number of employing business entries: 5-19 employees (no.)	8	10	5
Business Entries - Number of employing business entries: 20 or more employees (no.)	--	--	3
Business Entries - Total number of business entries (no.)	239	252	234

Business Exits - Year ended 30 June

	2012	**2013**	**2014**
Business Exits - Number of non employing business exits (no.)	156	188	163
Business Exits - Number of employing	40	26	49

business exits: 1-4 employees (no.)			
Business Exits - Number of employing business exits: 5-19 employees (no.)	13	8	10
Business Exits - Number of employing business exits: 20 or more employees (no.)	3	3	3
Business Exits - Total number of business exits (no.)	212	225	225

The total number of new ABNs that were registered peaked in 2012 with 513 registrations but since then the number has returned to the ten-year average of about 350 a year. Only about half of all registered ABNs are active at any one point in time.

Karratha is well-serviced with core business development services provided by the KDCCI, Business Local (SBDC service provided by RSM), the Business Centre and Manyrivers all filling a particular niche (and sometimes competing) in the market.

The new Incubator project that is being supported by the City and to be implemented by the Business Centre will provide an additional avenue for enterprise support.

There are a number of challenges and opportunities that need to be considered as follows:

- Promoting tourism and ecotourism opportunities needs to be grounded in sound business case feasibility assessments and market research
- There could be more activation in the Social Enterprise space particularly in bringing together the needs of Aboriginal communities with enterprise activities.
- Business skills development is on offer in Karratha but there is not much expertise in developing innovation, and more could be offered in tender preparation and presentation skills
- There is a risk of small businesses over-saturating a market niche (such as cafes or beauty services) as they are seen as easy market entrants
- Alternative niche opportunities need to be identified and researched possibly with the support of the business development agencies.
- Karratha has a very high percentage of micro and small businesses (about 80% of all businesses) and key challenges are sustainability and transition into medium sized enterprises.
- Aboriginal Corporations are playing an increasingly important role as sources of investment and business partnerships.

4.2 Health Sector

Procurement by the Nickol Bay Hospital is governed by state procurement rules as we as by the Health Department's policies and regulations, which are referred to as Common User Arrangements. A significant proportion of supplies come through this process. Local suppliers tend to be in areas such as repairs and maintenance (for which the hospital has an annual budget of about $1.5 million). There is no planned capital expenditure as the new hospital is being built.

The $208m Karratha Health Campus (KHC) is under construction. The KHC will provide primary health care services to residents of the City of Karratha as well as acting as a hub for smaller communities such as Roebourne, Wickham, Tom Price, Pannawonica, Onslow and Paraburdoo.

When the new health precinct is completed the existing hospital will be closed with all its services and staff transferred to the new facility. In terms of the economic impact once the new hospital is operational, initially this will not be that significant as it is not anticipated that there will be a large increase in staff. The hospital will have up-to-date facilities and will be able to provide some additional services but will function in the same manner as currently. The multiplier effects of greater staff numbers will not been seen in the short term.

One of the most noticeable changes has been the housing situation. Now staff has the option to stay in apartments, rentals have fallen dramatically and the amount that has been saved has been considerable. This has made Karratha more attractive and easier to retain staff.

The new Pilbara Health Network GP Super Clinic facility was built at a cost of about $11 million. A deliberate policy was to use local contractors if possible and if they could provide value for money. By working closely with the main contractor the project was able to achieve about 75% local contractors across a wide range of areas including electrical, structural, carpentry, lighting, ventilation, concrete and the like. This has also helped with ongoing maintenance as the sub-contractors were located in Karratha.

The change in housing costs has also been a major positive for the Clinic with accommodation subsidies being halved in the last couple of years, which has made a significant impact on the operational budget. About two-thirds of the Clinic's workforce are local residents, with some of the doctors and allied health specialists being visitors.

In terms of overall heath service the prevalent view was that Karratha was now well serviced with good access to GPs, and a broad suite of allied health services available. Highly specialist medical services still needed to catered for out of Perth and mental health services could be improved. Services for the other locations of Wickham, Dampier and Roebourne were increasingly serviced out of Karratha town

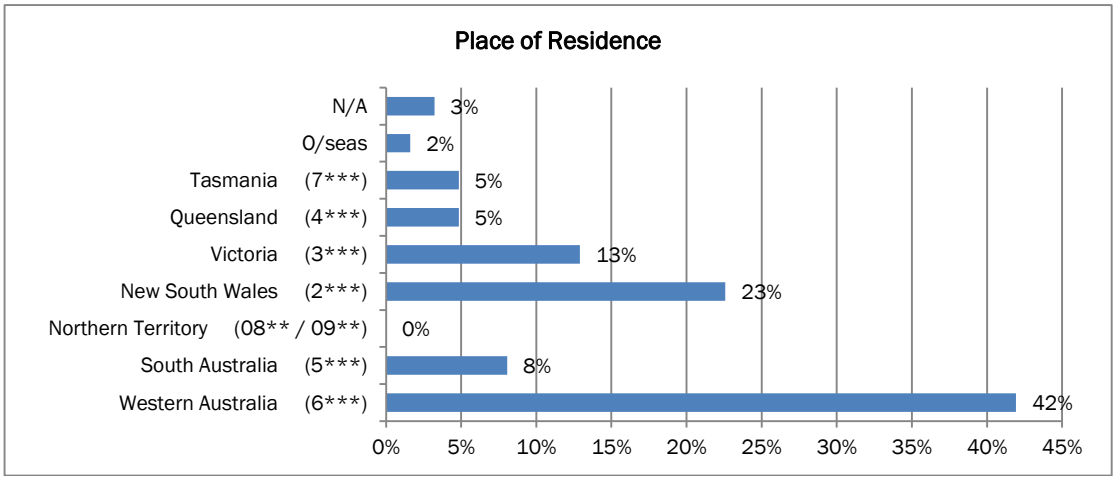
and there was some criticism of there not being sufficient resident GP services in these other locations.

It was observed in the interviews that there was a gap in Aged care facilities – nothing for longer term aged care, not able to bring up older parents to Karratha and keep them in local facilities - nearest facilities at Geraldton or Yandina at Roebourne. One can get in-house care for people but not the same as proper aged care facility.

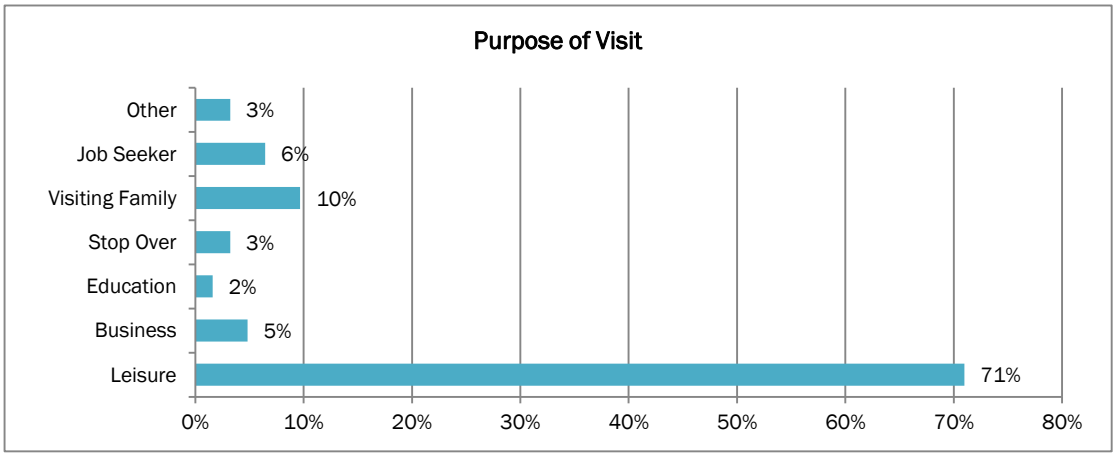
4.3 Tourism and Recreation

Much emphasis in recent years has been paid to trying to develop the Tourism industry in the Pilbara in general and Karratha in particular. For instance the recent Tourism Ventures Feasibility Study undertaken for the City indicates some investment and promotional opportunities.

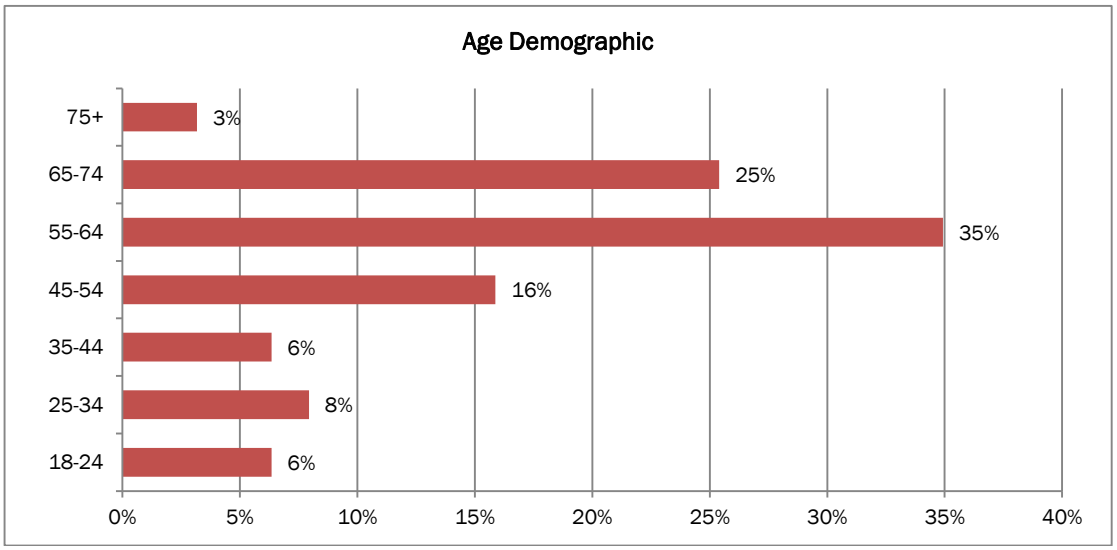
The latest data (2015) on Tourism to Karratha from the Karratha Visitor Centre is as follows. It is drawn from actual number of visitors that come to the KVC. It should be noted that the data for 2014 was very similar and illustrates a consistent trend:



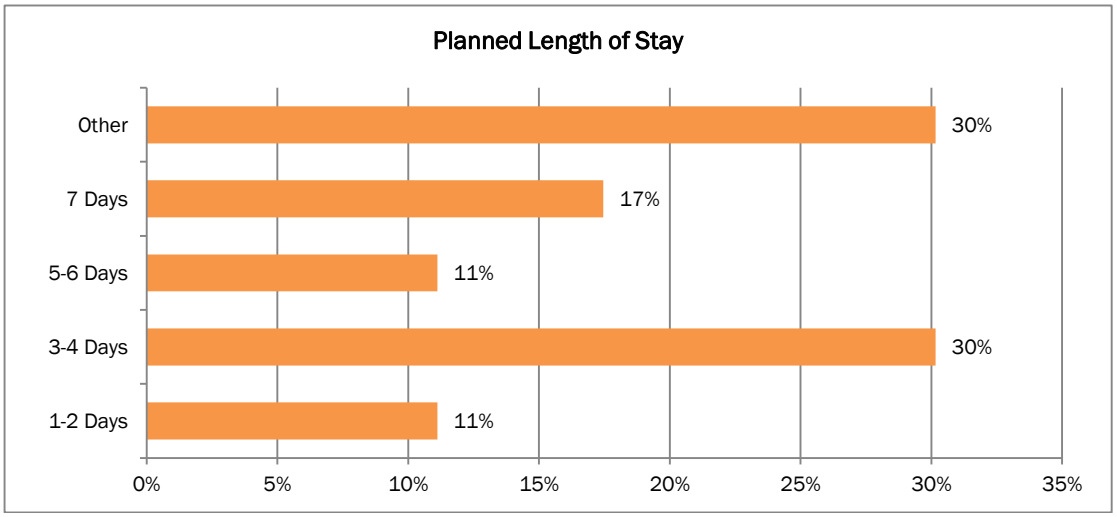
95% of visitors were from Australia of which just over 40% were from WA.
Conclusion: Karratha is not, to any extent, on an international visitor's itinerary.



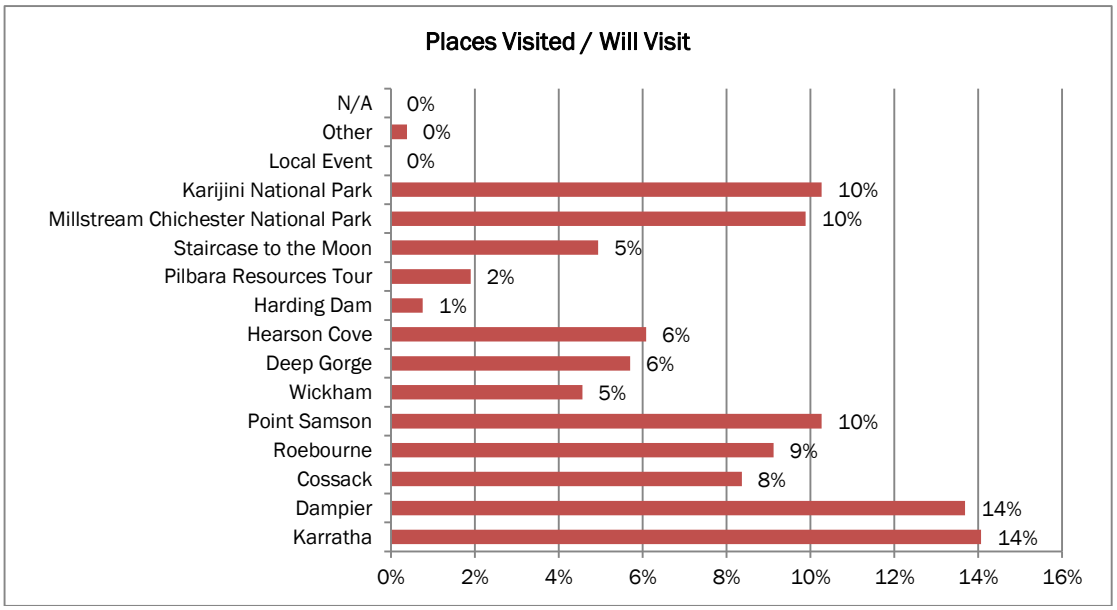
Conclusion: The vast majority of visitors recorded by the KVC are on holiday or visiting family.



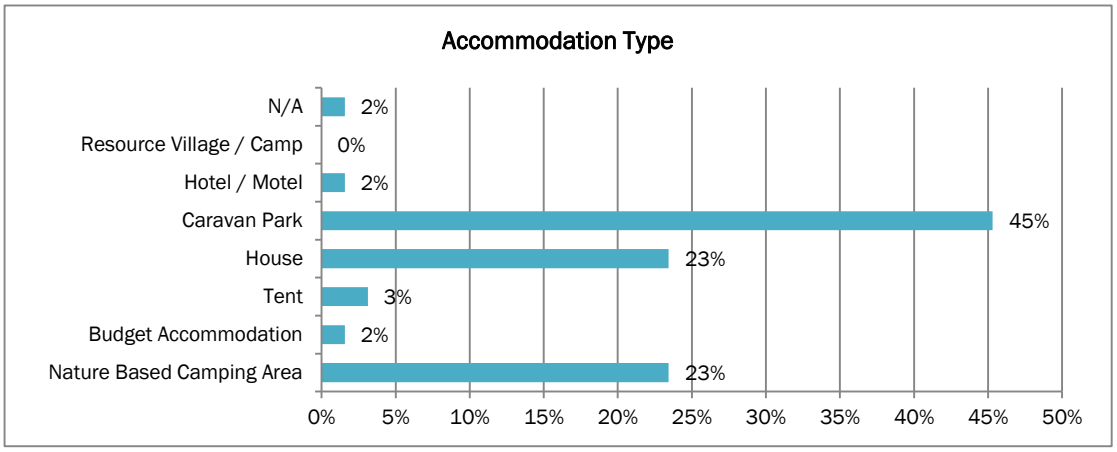
Conclusion: It is a mature clientele with over 60% of visitors in the age bracket of 55 years +. Karratha is not viewed as a destination by younger holiday makers.



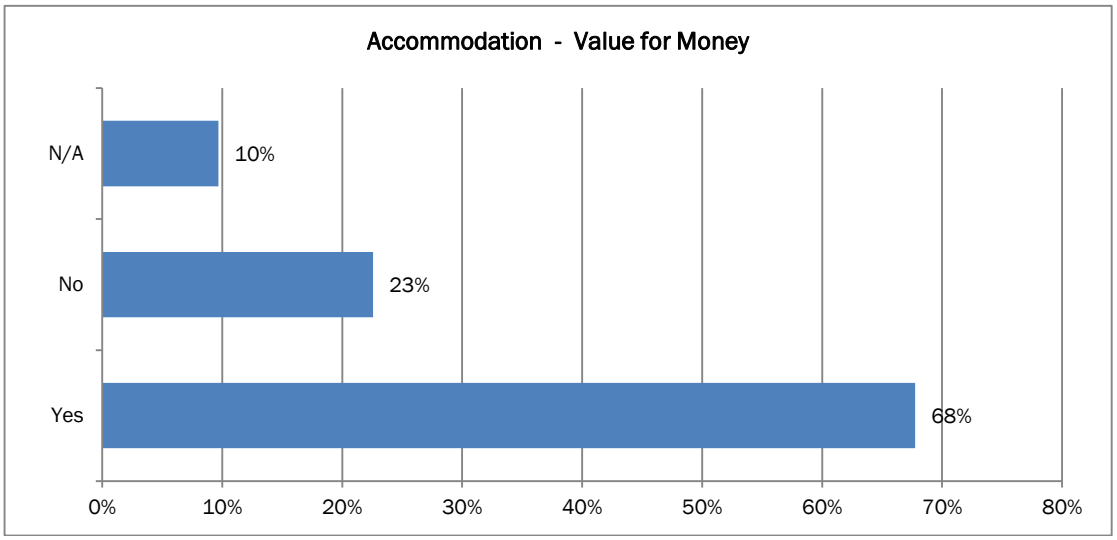
Conclusion: There is an even spread of visitor duration with most visitors staying for under a week but also a significant proportion (30%) staying longer.



Conclusion: Visitors tend to be evenly spread across the various attractions and destinations within the area.



Conclusion: The type of visitor being recorded by the KVC are predominantly those using the caravan parks and camping areas.



Conclusion: Due to the type of visitor being recorded most think that the accommodation (being caravan parks and camping sites) are value for money.

The Tourism Ventures Study draws upon a different set of tourist data from Tourism Research Australia, which is the national tourism research bureau. They use a different methodology based on sample phone surveys across Australia. This provides a very different picture for Karratha, with the main purpose of visit being given as Business (about 50% of respondents) while leisure travellers were only about 30%. The age group was also significantly different as TRA reports that the age group of 20-29 accounted for almost 50% of visitor nights. Tourism WA also uses the TRA data.

The overall conclusion is that depending on your data source very different conclusions and therefore different policy standpoints can be taken by using these different data sets.

The TRA data methodology captures the younger (possibly FIFO) traveller to Karratha who is there for business (work) while the KVC captures the "grey nomad" visitor who is on holiday/lifestyle travel.

The KVC data also delves deeper into visitor attractions and perceptions, which is useful for planning and promotional purposes.

A recent policy change limiting the duration that campers can stay at the nature based camping sites in the Karratha area has had a negative impact on the numbers of long-stay visitors. It has been noted however that such visitors tend to have a very low spend into the local economy.

The issue of tourists and grey nomads was raised a number of times. There were mixed views on the net impact of recent controls to camping by grey nomads. While it was felt by many that controls were needed to protect the environment and provide a modicum of services, a few people felt that the City's controls were "pushing" the nomads to other towns. Different towns in the Pilbara, and other regions of Western Australia, are potentially competing for the grey nomad market. The City could work in collaboration with other towns in the region to see if there were common approaches to optimise their retention within the region to the benefit of a number of the communities in the Pilbara.

Industry specialists have noted that one of the biggest gaps in the Karratha tourism offering is in tour operators. There are only a handful of operators providing fairly regular services to attractions such as the Burrup Peninsula and Dampier Archipelago. Competition, choice and innovation appear to missing. Numerous challenges for tour operators have been well-described in other reports and certain small business initiatives are underway to try to address this gap.

Initiatives that could be encourage and supported by the City of Karratha include the following:

- Have the local TAFE offer tourism related courses (currently only available at the Broome campus)
- Have adequate training and certification of companies and individuals providing tourism services including tour operations to ensure a minimum quality of service.
- Support KVC to offer tourism management services to small operators (such as booking services, promotional advice etc)
- Continue to invest in signage and use of social media to assist and attract visitors.
- Support ecotourism developments at Millstream and Dampier Archipelago
- Encourage the hotel and restaurant industry to buy and promote local products such as hand made soaps, jewellery, books and gifts.

Two other strategic investments are also in the pipeline and could have significant impact:
The first is the development of an upmarket hotel offering in the CBD (on The Quarter site). This long awaited investment appears to be progressing again (as of October 2016).

There are two prevailing viewpoints. The first is that with the downturn in the market there is no longer an availability issue with regard to hotel beds and all the Karratha hotels have spare capacity. This viewpoint questions the viability of a new offering.

The second viewpoint is that none of the hotels are providing an international quality experience and the City revitalisation will not be complete without such an offering. The business case will determine how soon the project will move forward.

The other more "blue sky" opportunity is the case of cruise ships. None of the current tourism initiatives under discussion or being promoted will achieve a transformational change to the visitor numbers in the short term. Even a new hotel may only shift current visitors from one type of accommodation to another. The exception is cruise ships. This has been one of the fastest growing tourism sectors worldwide and gradually WA has appeared on the cruise ship map. Fremantle is the main port for docking on the WA coast with four cruise lines offering package to destinations to Australia and Asia in particular. At present, if cruises stop along the west coast it is usually at Broome, if the destination is Asia. There are also for example coral coast cruises, which currently stop at Geraldton, Exmouth and Broome.

Dampier Port can handle cruise ships and these would deliver upwards of 800 visitors at a time. Cruise passengers provide short, sharp injections into the local economy and if well managed can be the catalyst for a significant local industry. It is recommended that engagement between the City and Port Authorities and tourism industry representatives are deepened to try and fast track this initiative.

As a concluding observation on the challenges as well as opportunities in the tourism sector it is worth repeating the observations made in a study commissioned in 2015 by the City of Karratha on the Transient Workforce Accommodation:

> "However, simply constructing new upmarket and dedicated tourist accommodation will not necessarily grow the tourism industry in Karratha. A major awareness campaign would be necessary to generate sufficient tourist demand. Even then it should be recognised that geographically remote destinations rarely succeed when developed and promoted in isolation and that any local attractions need to be packaged with other Pilbara attractions to ensure sufficient market penetration and branding.
>
> A concerted and coordinated effort by the City of Karratha and accommodation providers is required to ensure that an effective strategy can be developed and implemented to leverage off all of the region's attractions. Until this is achieved, and until serviced tourist accommodation is refreshed

(either through new build or refreshing of existing stock), it is unlikely that tourism demands will change."

4.4 Resource Sector

The CMEWA has recently started gathering data from resource companies on their annual spend in WA and in the regions. For 2014/2015 the resource sector contribution to WA and the Pilbara was as follows:

2014/2015	WA	Pilbara
Total Direct Contribution to Economy	$28.8 billion	$2.2 billion
Direct employees	33,666	4,180
Wages & salaries	$5.2 billion	$677.9 million
Business purchases + local government payments	$23.6 billion	$1.52 billion
Businesses supported directly	6,966	206

Source: CMEWA

The Resources sector has a number of methods by which local content purchasing takes place. At the macro level there is the Australian Industry Participation Plan (AIP) which is an Australia-wide, Federal scheme to encourage sourcing from within Australia. It is described as providing full, fair and reasonable opportunity for Australian companies to supply. Opportunities are advertised on Project Connect. Resource companies undertake various processes and actions to encourage Australian suppliers through AIP. For example, various projects under the North West Shelf development fall under the AIP, such as the Woodside North West Shelf subsea tieback programme which is focused on using existing infrastructure to develop gas reserves from existing and undeveloped offshore gas fields north-west of Karratha. It has a project value of about $500 million and has a schedule of opportunities for Australian suppliers.

At the regional or local government level there are a number of observations that can be made about local procurement actions by the Resource Industry as follows:

- Resource companies make very significant grants to local community services and events, such as to Red Earth Arts Festival, Pilbara Education Initiative which includes Roebourne, quarterly community grants, medical services equalisation scheme, early childhood learning programmes, traineeship programmes for Aboriginal people etc.
- Specific Aboriginal engagement programmes to enhance skills and procurement from enterprises as part of their agreements with the Aboriginal communities. This has multiple facets ranging from supporting partnerships with Aboriginal businesses to specifying the percentage of supply from Aboriginal businesses that should come from specific contracts. The latter is done through active mentoring of Aboriginal business in how to

meet contractual requirements, and requirements for Tier One and Tier Two contractors to engage with such suppliers.

- At the "mine site" level smaller contracts that may not need to go to open tender or use group purchasing systems often look for local suppliers as there are positives such as building long term relationships, quick response times and saving costs by not having to fly in expertise. All of the above are still governed by stringent industry procurement standards.
- Large contracts awarded for catering and serving of camps and facilities have local content requirements and it is expected that such suppliers will both employ local personnel were possible as well as use local sub-contractors where feasible.

However, there are important challenges to be faced by local suppliers both currently and into the future.

The rapid adoption of technology will increasingly impact the number and type of jobs on offer in the resources sector. Global trends such as big data, automation, driverless vehicles, drones, remote sensing, additive technology, 3D manufacturing and the like are being researched and where appropriate adopted to increase efficiency, increase productivity and reduce labour costs.

All of the major resource companies are adopting or researching these technologies and the conclusion is that labour growth for operations will be strongly influenced by these factors for the next 20 years.

What is not yet full appreciated is that such technologies are not location specific. Remote sensing and automated control centres could operate out of Karratha just as well as Perth. Suppliers who want to remain competitive will have to be knowledgeable about technological advances and be innovative in their offerings to the resource companies.

There is a risk that suppliers in Karratha will move down in the value added chain providing lower value repairs and site maintenance services such as landscaping, labour hire, cleaning services and the like if they do not keep abreast of innovation trends in the industry.

Companies need to take advantage of the West Australian government's Innovation Strategy and the City should consider its role in networking with organisation's such as NERA (National Energy Resources Australia).
For example the recent study by NERA on the industry competiveness assessment of the Australian O&G industry arrived at the following major conclusions:

"To achieve improvements in Australia's overall industry competitiveness, the report identifies four priority areas where changes in the short term can positively impact performance:

- **Value chain -** Collaboration between operators and service providers to share resources and infrastructure, as well as setting up regional supply hubs, could see Australia overcome many of its structural supply chain disadvantages.
- **Research & Innovation -** Increased collaboration between universities and industry, combined with a focus on commercialisation of research would see Australia become a world leader in oil and gas research and innovation.
- **Workforce -** Investing in building local capability for the Production and Abandonment phases, so that Australia's workforce maintains its high quality.
- **Regulatory reform -** Increasing engagement between industry and government to reduce the 'red tape' that adds costs and extends timelines within the industry."[30]

4.5 Education Sector

The education sector approach to local purchasing was broadly as follows:

- Local purchasing of administration equipment i.e. photocopiers purchased locally from supplier,
- Use locals first for repairs to building etc.
- Laptops from Perth - purchased on basis of Education Department system requirements as may not be able to purchase locally
- As a regional office has some ability for local preference in purchasing materials for metal and wood work classes locally, however specialised equipment comes from Perth
- Uses a local company and local staff where possible. Cleaning company uses local workers. Gardening equipment, top dressing, weeding etc. on sports grounds locally sourced. Canteen and home economic classes purchase locally from supermarkets. Where possible will go to local company for building repairs maintenance. Stationary from local company fro small items. Bulk purchase of stationary online or from Perth
- School Books purchased from Perth as no local bookshop any more
- Bulk printing– Now purchase yearbooks, diary, letterheads etc. from Perth as local business closed down.
- During boom many companies were overpriced, did not bother to quote and offered poor service. So we stick with those companies that were loyal and gave good service then, even if those companies are now slightly more expensive than the other competitors. It's a reward for previous service loyalty
- For smaller jobs able to get three quotes themselves and decide locally, for larger jobs (more $50,000) quotes are handled by Department of Building Management and Works who put things out to tender - best price decisions will dominate in those situations.

Gaps:

[30] Source: NERA ICA report

Well-educated, trained and skilled regional populations are fundamental to social and economic development. There are new opportunities across a spectrum of education and training:

- There is a need to maintain strong viable schools with a hub and spoke model that combines boarding away from home and transport options to ensure sustainable student populations at all district high schools;
- Vocational, technical and tertiary education services, that are industry integrated, need to be accessible;
- Virtual learning will become more prevalent and will require adequate support systems

The Council needs to strongly and urgently engage with tertiary education suppliers (universities and the TAFE) to ensure that courses are being developed and offered that meet the demands of industry and support the Karratha industrial landscape.

There is a proposal to develop a university facility in collaboration with Geraldton Universities Centre, which is a collaborative approach to offering university level study. [31]

Community interview observation:

> "Need to attract a tertiary education centre i.e. University or TAFE as this will support students once they finish High School - there is nothing here except low-level jobs. City could promote idea of Tertiary Hub to tertiary education institutions to develop a place that people can come together and study online, this would be for school leavers and anyone else wanting to study. Local experts can also support and provide tutoring support. Important to be an interactive place. Try and bring up graduate interns, and encourage students to move here, maybe some will stay longer"
>
> "Despite downturn enrolments have not dropped; has one of the highest numbers of children and **they are employing more teachers and more teaching support staff -** the latter is sourced locally. More families are staying in the area, and not sending their children to Perth schools. Changes with the TAFE impacted negatively as a school requires all Year 11 students to do a Certificate course – no longer easily supplied due you TAFE restructure. Have limited choice of topics from TAFE now."

[31] The University of Western Australia, Curtin University of Technology and Edith Cowan University formed a consortium to bid for the Geraldton university places, with the University of Western Australia taking the role of Administering University. In November 2001, the Geraldton Universities Centre was established. In 2006 the Hon Wilson Tuckey officially opened the Mid West's own purpose built facility in Geraldton. The GUC became the independent, not for profit, incorporated body in 2010. This gave GUC the flexibility to negotiate with universities throughout Australia to expand the range of locally supported university courses available. Two significant Royalties for Regions grants helped the GUC to expand.

4.6 Community Services

The Karratha Leisureplex with its state-of-the–art facilities has been a very significant development in the daily life of many residents. It is also a significant contributor to the local economy through its expenditure on employing local staff, cleaning and maintenance, catering, and the like. It makes a concerted effort to support local services to the extent of tailoring procurement contracts to meet local capacity. It maintains a panel of approved suppliers. Areas where more competitive local supply would be useful are in the provision of sporting equipment and equipment maintenance.

The Leisureplex provides a useful case of the multiplier effects of such a facility through increased local employment, increased health and fitness for all age groups, diverse recreation opportunities and supporting the growth of sporting excellence.

Gaps were identified in the community interviews as follows:

- Childcare, after-care not enough available places to have sufficient choice; after hours/outside school care is fiercely contested. There is not much choice and would be good to have another option - they have a Montessori school at Dampier. There are 2-3 One Tree childcare businesses in Karratha but demand outstrips supply.
- There is a gap with children of all ages in terms of broad entertainment. The Youth Shed caters for those up to 12-years old but otherwise there's not much to do and prices are high at the Youth Shed.
- For youths really nothing to do even though there are a lot of teenagers; need additional indoor recreation centre for example Ten Pin Bowling, Bounce etc

4.7 Online Shopping and Retail Sector

The local post office was interviewed with regard to the impact of online shopping and the observations were of considerable interest as follows:

- Between 2006/7 and 2009/10 there was a massive increase in online sales. Online shopping every year during the boom there was a 30% increase in the volume of parcels. Karratha is one of the towns that tops Australian eBay statistics – with over 8000 parcels a week being delivered.
- On line sales reached plateau over the last few years but still have a steady 3-5% increase and that is slowly creeping up again
  For the post office over a week they will receive between 5500 parcels to 6000, still one of biggest towns for percentage of online shopping in WA
- About 30% of customers account for 50-55% of the online shopping
- This is resulting from the higher mark-up of prices in the boom, and competitive online shopping strategies, including flat rates for postage making it competitive
- In the past people were cash rich/time poor. Now it's a matter of habit (people purchase now when they see something on their screen) also

catching new products. Now it's a habit – some people don't even look locally before they shop on-line
- Families doing on-line shopping will equate to have a much greater volume of sales going out of the economy compared to FIFO workers
- Enormous variety of products purchased on-line - Dan Murphy, Flat screen TVs, wine, pet food etc. Even includes products available in town.
- Recognise the on-line shopping trend is here to stay, customer foot traffic is in decline.

The review of the Retail sector in Karratha raised numerous, often contradictory viewpoints from the community interviews and the industry.

Broadly speaking the retail sector in Karratha is well covered with most day-to-day requirements being provided.

Overall retail sales have been estimated to be down by about 10% on last year with increased pressure on landlords to negotiate better deals for tenants. This tends to mean that rents are beginning to "normalise" and longer term arrangements will be able to negotiate better terms.

There are also more options for tenants with space available in The Quarter, Pelago, Centro and Karratha Village, where annual rents vary from about $300/sq.m to $1,000 sq.m depending on location, consumer traffic, space footprint etc.

With the retail space of about 6,000 sq. m at The Quarter coming to market, combined with what is on offer at the Pelago development, there now appears to be adequate retail space offerings for the foreseeable future in Karratha.

Gaps

There have been some consistent messages about the gaps in the existing retail offering in Karratha. Some are quite obvious such as a lack of an independent butcher, fishmonger and limited fresh fruit and vegetable outlets. There is also no laundry service.

Other gaps tend to be in terms of limited choice as opposed to no supplier and here the list is quite long but tends to focus on:

- Speciality or boutique clothing
- Bookstore
- Pharmacy
- Sports goods
- Bakery
- Bulk Chain stores (nearly all the big brands but in particular Bunnings and Department Stores)
- Chain Fast food outlets
- Specialty foods (health, delicatessen, etc)
- Printing and stationery

- Footwear

Normalisation of business operating costs (lower rentals, staff accommodation, etc) should encourage national and local businesses to assess (or reassess) the viability of opening outlets in the above areas. The normalisation of the workforce is also a positive as business cases can be done on more stable demographic and disposable income scenarios than during the boom time.

4.8 Local Government Purchasing Programmes

The issue of providing preferential purchasing arrangements to local suppliers is considered contentious in its broadest economic impacts but is widely adhered to by both national, state and local governments. The goal is to encourage local business growth while not distorting the open market, or facing the risk of not getting value for money.

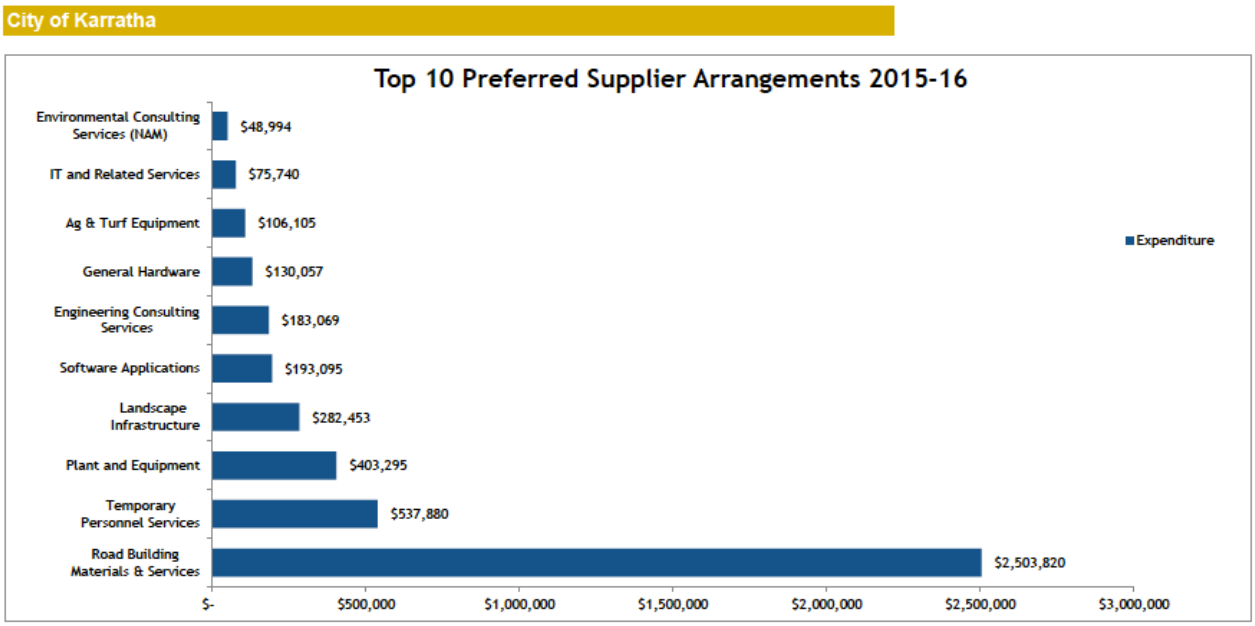
Local Government Preferred Supplier

WALGA operates a preferred supplier programme, which is accessible to all local government's in WA. Karratha utilises this scheme and in the 2-year period from 2014/15 to 2015/16 the City achieved conservative savings (as calculated by WALGA) of close to $1 million, on purchases valued at $9,009,612.

In general the programme negotiates preferential discounted prices from companies that join the scheme and it also provides, in effect, a preferred supplier panel which council's can use to speed up procurement processes including a tender exemption. Suppliers go through a vetting process by WALGA procurement specialists.

Karratha made purchases from 59 companies that are members of the programme of which only 13 had operations in Karratha. Purchases ranged from under $100 to $1,032,000.

The sector spread of purchases was as follows for 2015/16:



City of Karratha

The City of Karratha will encourage local industry to do business with Council through the adoption of a regional price preference advantage in conjunction with standard tender considerations. This policy applies to all City of Karratha tenders, unless Council resolves that this policy does not apply to a specific tender.

In this policy the following words have the following meanings:
Local Industry is a business within the City of Karratha which conforms to the definition of a '*regional tenderer*' under this policy.
Price Preference is defined as the willingness to pay a higher price for the procurement of goods and/or services that are supplied by a '*regional tenderer'.*
Regional Tenderer is a supplier that has been operating a business continuously out of premises within the City of Karratha for at least six (6) months and submits a tender for the supply of goods and/or services.
For the purchase of goods and/or services outside of the tender process the mandatory price preference requirements contained in Council's CG-12 Purchasing Policy and Purchasing Guidelines must to be observed (see below).

Price Preference

A preference will be given to a regional tenderer by assessing their tender submission as if the price bids were reduced by:
a) 10% (up to a maximum price reduction of $50,000) for goods and/or services; or
b) 5% (up to a maximum price reduction of $50,000) for construction (building) services; or
c) 10% (up to a maximum price reduction of $500,000) for goods and/or services (including construction (building) services) if tenders are being sought for the first time for goods or services currently undertaken by Council.

Competitive Purchasing

Whilst price is a competitive consideration in the provision of goods and/or services via tender, it is only one aspect of the tender evaluation process. Value for money principles, as described within CG-12 Purchasing Policy and the Purchasing Guidelines, will be employed by assessing the price component in conjunction with the tender selection criteria and requirements.
The tender that is determined to be both cost effective and advantageous to the City of Karratha will be the most likely to be accepted.

Buying Local
The City shall seek to maximise the use of competitive local businesses in goods and/or services purchased or contracted on behalf of Council, by applying a price preference advantage to quotations received by regional respondents. A 'regional respondent' is a supplier that has been operating a business continuously out of premises within the City of Karratha for at least six (6) months immediately prior to the quotation deadline and submits a quotation for the supply of goods and/or services.

This price preference applies to all City quotations between $5,001 and $150,000 (excluding GST), with the exception of quotations obtained from suppliers under an Internal Preferred Supplier Contract, or suppliers who are tender exempt under regulation 11(2) of the Local Government (Functions and General) Regulations 1996.

Those tender exempt suppliers are WALGA Preferred Suppliers, Pre-Qualified Suppliers appointed by the City to a Panel, suppliers registered on the Aboriginal Business Directory WA, Australian Disability Enterprises, Common Use Arrangement suppliers, the Commonwealth Government, the State Government, Regional Local Government or another Local Government.

Local Preference
A preference will be given to a regional respondent by assessing the quotation submission as if the price bid were reduced by 10% for goods and/or services, or 5% for construction (building) services.

Competitive Purchasing
Whilst price is a competitive consideration in the provision of goods and/or services via quotation, it is only one aspect of the quotation evaluation process. Value for money principles as described in this policy, will be employed by assessing the price component in conjunction with the quotation selection criteria and requirements. The quotation that is determined to be both cost effective and advantageous to the City will be the most likely to be accepted.

Purchasing Thresholds
The below table identifies the requirements for each purchasing threshold. When determining which threshold to observe, the value of procurement (ex GST) is to include the full term of the contract, including extension options where applicable.
Amount of Purchase (ex-GST)

Requirements

Up to $5,000	A minimum of one quotation is required. The quotation may be requested verbally, but it must be received in writing.
$5,001 - $50,000	A minimum of three quotations are required. The quotations may be requested verbally, but must be received in writing.
$50,001 - $150,000	A minimum of three quotations are required. The quotations must be requested in writing and must be received in writing.
Above $150,000	Conduct a public tender process UNLESS a tender exemption applies.

City of Karratha Case Studies

The Tambrey Pavilion, Dampier Community Hub and Karratha Airport Terminal projects were three recent projects that were undertaken by the City of Karratha. The projects were analysed as to the degree to which there was local purchasing and the findings were as follows:

Tambrey Pavilion: Project cost $2,307,733 of which approx. 48% local.

Section A: Materials	Materials (Goods)	Percentage of Project Sum
	Concrete supply	4.0
	Reinforcement	1.0
	Site Huts	0.4
	Plant hire	0.4
	Housekeeping/Labour hire	0.3
	White goods	0.1
Section B: Subcontractors	Services (including subcontractors	
	Tiling & flooring	4.0
	Electrical	11.0
	Landscaping	3.0
	Hydraulic	5.0
	Fencing	1.0
	Painting	2.0
	Earthworks	3.0
	Site Survey	1.0
	Steel rigging & sheeting installation	2.0
	Cabinets	2.0
	Ceilings and Wall framing	4.0
	Carpentry	1.0
	Blocklayer	3.0

Total		**48.2**

Dampier Community Hub: Project cost $13,447,331 of which approx. 49% local.

Section A: Materials	Materials (Goods)	Percentage of Project Sum
	Concrete supply	2.4
	Site Huts	0.1
	Plant hire	0.4
	Housekeeping/Labour hire	0.1
	White goods	0.1
Section B: Subcontractors	Services (including subcontractors	
	Tiling & flooring	3.0
	Electrical	9.7
	Concrete works	3.7
	Hydraulic	5.0
	Fencing	0.3
	Painting	2.0
	Earthworks	5.0
	Site Survey	0.7
	Mechanical	13.0
	Carpentry	0.7
	Blocklayer	3.0
Total		**49.2**

Karratha Airport Terminal Project: Building Works $27,261,810 of which approx. 66% local.

TRADE	PROJECT	KARRATHA
BUILDING WORKS		
Preliminaries	$3,587,960.00	**$3,408,562.00**
Demolition	$829,027.00	**$704,672.95**
External Works	$78,917.00	**$78,917.00**
Landscaping & Irrigation	$697,797.00	**$697,797.00**
Earthworks	$167,041.00	**$167,041.00**
Concrete, Formwork & Reinforcement	$2,659,670.00	**$2,633,073.30**
Masonry	$534,268.00	**$534,268.00**
Structural Steel	$1,804,900.00	**$721,960.00**
Toilet & Shower Cubicles	$27,606.00	**$2,760.60**

Metalwork	$761,803.00	**$167,596.66**
Joinery & Stainless Steel	$435,393.00	**$413,623.35**
Roofing & Metal Claddings	$742,209.00	**$333,994.05**
Ceilings	$1,757,409.00	**$1,757,409.00**
Aluminium & Glazing	$1,031,065.00	**$257,766.25**
Doors, Frames and Hardware	$248,907.00	**$126,942.57**
Rendering	$50,558.00	**$50,558.00**
Internal Partitions & Linings	$1,233,747.00	**$1,233,747.00**
Ceramic Tiling	$1,047,547.00	**$1,016,120.59**
Vinyl, Carpet & Mats	$135,578.00	**$135,578.00**
Painting	$367,010.00	**$367,010.00**
Vertical Transport	$100,580.00	**$100,580.00**
Mechanical Services	$3,135,844.00	**$940,753.20**
Electrical Services	$3,220,700.00	**$1,127,245.00**
Hydraulic Services	$1,261,274.00	**$693,700.70**
Provisional Sums		
Supply of Appliances to Bar	$40,000.00	**$-**
Installation of Public Art	$40,000.00	**$40,000.00**
Baggage Handling System - Builders work	$40,000.00	**$40,000.00**
Baggage Handling System	$1,225,000.00	**$306,250.00**
	$27,261,810.00	**$18,057,926.22**
		KARRATHA: 66%
GST excluded from all figures		

5. Investment Opportunities

There has been a considerable body of work in recent years studying and reporting on new investment opportunities for the Pilbara region in general and Karratha in particular. This study will only highlight some of the "low-hanging fruit". These are considered as such because they align with the economic diversification strategies of

the City of Karratha and are supported by the economic analysis of value chains and multiplier effects.

Resource Sector Supply Chains

Opportunities exist to leverage the Karratha region's industrial activity, advancements in technology, existing local skills and infrastructure base and growing population to promote and encourage globally competitive logistics, engineering and supply chain common-user facilities, hubs or centres of excellence to service onshore and offshore industry needs. Greater levels of locally provided services to the existing minerals and energy supply chains will improve the local capacity in the supply of services, equipment and materials fabrication, assembly and technologies.

Opportunities:

A diverse range of opportunities exist in supporting the supply chains of large mining operations and LNG and energy projects. Services include, but are not limited to:

- Machinery and equipment installation and maintenance;
- Pipe, beam and metal fabrication;
- Facilities management;
- Communication installation, maintenance and systems management;
- Water storage and treatment services and facilities;
- Safety and environment control systems;
- Engineering and land survey;
- Diving and underwater equipment installation;
- Offshore transport;
- Environment monitoring, management and assessment;
- Worker camp production, installation and decommissioning;
- Commercial cleaning and laundry
- New disruptive and innovation technologies i.e. remote sensing, automation systems, 3-D printing

Aquaculture

The Western Australian Government is committed to the development of sustainable marine aquaculture in Western Australia. To facilitate this commitment, the Minister for Fisheries announced a funding package to enable the establishment of regional zones. These zones will create large-scale opportunities for existing and future aquaculture operations through a streamlined assessment and regulation process and increased licence volume driving investment in aquaculture and downstream industries such as transport, logistics, ice works and technical operations. In August 2014 the Kimberley Aquaculture Development Zone was created. Located in Cone Bay, this is the first aquaculture development zone to be established in Western Australia. A similar zone is currently being planned in the mid west off the coast of Geraldton within the Abrolhos Island area, and proposed zones both offshore and onshore in the Pilbara-Gascoyne regions is currently being investigated by the Department of Fisheries. These are highly significant developments that have the potential to transform the aquaculture industry into a major new sector for the regions.

Opportunities exist for Karratha as follows:

- Partner with Department of Fisheries, Challenger Institute of Technology School of Maritime Studies and Durack Institute of Technology's Batavia Coast Maritime Institute (BCMI) to develop a research and study facility within Karratha for aquaculture and marine studies
- Engage with Pilbara Port Authority and their Dampier Port Management to proactively consider enhanced facilities for prospective aquaculture investments
- Monitor the progress towards the creation of Pilbara Aquaculture Development Zone and when appropriate actively promote Karratha as the hub for the Zone.

Tourism

The Pilbara is a region of contrasts with many natural attractions to explore. Home to island reserves, a marine park and stunning landscapes, the Pilbara also offers world-class diving, snorkelling and fishing with amazing marine diversity. Within the greater Karratha catchment area the outstanding attractions are as follows, which lend themselves to ecotourism investment, tours and destination marketing:

Karijini National Park is Western Australia's second largest park. It Covers 627,000ha just north of the Tropic of Capricorn in the Hamersley Range

The Dampier Archipelago is a chain of 42 coastal islands, islets and rocks, where divers may explore coral reefs, while other visitors swim or relax on the beach.

The Montebello Islands Marine Park has more than 58,000ha of ocean surrounding 265 low-lying islands and islets that are fringed by coral reefs populated with colourful tropical fish.

Millstream Chichester National Park is an oasis in the desert nestled within the chocolate brown rocks of the Chichester Range dotted with spinifex and snappy gums.

Murujuga National Park has the distinction of being the 100th National Park declared in Western Australia. It hosts the largest concentration of rock art in the world.

Barrow Island Marine Park is a significant breeding and nesting area for threatened sea turtles and its waters support important coral reefs and a diversity of tropical marine animals. The 4,100ha park, on the western side of Barrow Island, contains Biggada Reef, one of only two significant fringing reefs in the Montebello/Barrow Island reserve system.

Opportunities are diverse including:

- A range of eco-related accommodation and amenity services,
- Supporting infrastructure,
- Construction and maintenance services.

Agriculture

There are two major state-supported agriculture initiatives that could impact on Karratha over time. These are as follows:

Pilbara Hinterland Agricultural Development Initiative (PHADI)

Irrigated agriculture has the potential to expand the economic base of the Pilbara and attract major capital investment. DAFWA is planning for the future of irrigated agriculture development in the Pilbara through the $12.5m Pilbara Hinterland Agricultural Development Initiative (PHADI) funded by Royalties for Regions over four years.

PHADI will assess the potential of irrigated agriculture in the Pilbara and will deliver high-impact research outcomes to assist future development decisions by government and industry. PHADI will investigate and share key information on agronomics, land tenure, supply chain and markets, economic viability, cultural and environmental areas of significance, and stakeholder aspirations. Project findings will be packaged in a suite of online user-friendly, information products, and extended to clients through project consultation, updates and events.

There are four water sources:

- Groundwater;
- Mine dewater surplus;
- Surface water; and
- Dams and Managed Aquifer Recharge (MAR).

Irrigated crops may be used for fodder, food and fuel production, and have the potential to bolster the existing pastoral industry and complement mining operations. There are two pilot projects: the Woodie Woodie pilot project, a 38ha irrigation trial in the east Pilbara, using surplus dewater, and a second pilot project, a 38ha irrigation trial site. Lucerne, Rhodes grass, oats, sorghum and maize are the first species to be trialled, with a range of other grain and fodder species recently approved for inclusion in the experimental trials.

Research and identification of water sources is over a three year period 2014-17. An interim report on opportunities will be available in December 2016.

Opportunities:

The potential to irrigate up to 25,000ha of land in the areas will create significant investment and job opportunities and will add significantly to the quantity of marketable produce in the Pilbara. Specific irrigation projects in the future in the

Pilbara will include irrigation sourced from mine dewatering; groundwater and surface water and will require:

- Agricultural production;
- Agri-processing; and
- Support services.

Northern Beef Futures Project

Northern Beef Futures (NBF) is a four-year $15m project, funded by the State Government's Royalties for Regions programme, to transform Western Australia's northern beef industry through market diversity and improved business models and integrated export supply chains.

NBF is an export supply chain focused, market-driven project to enable the Western Australia beef industry to boost capabilities, build value and strengthen relationships within new and existing supply chains and diversify and align products to suit new and expanding markets identified by the project.

As an example, research is underway to identify opportunities for new facilities to meet the projected growth in the beef export market such as feedlots, holding yards, wash down facilities and possibly a palletisation plant in close proximity to the Port in Port Hedland with an estimated cost of about $2.5m.

NBF commenced in August 2014 with the project delivering seven integrated components to:

- Increase the value of production from the Pilbara and Kimberley beef industry;
- Reduce reliance on current markets, through the establishment of alternate, economically viable export markets for beef and live cattle;
- Boost employment in the northern cattle industry through increasing profitability; and
- Provide greater opportunities for regional and Indigenous participation in the northern beef industry.

Under NBF's investment and capital component, the project is identifying and establishing new business models that are integrated and aligned with new markets and supply chains to attract new investment to grow the beef industry in Western Australia.

NBF is working to attract domestic and international investment into the Western Australia beef industry and convert investor interest into integrated investment that has a market pull effect from ASEAN and north Asian markets to benefit the Western Australia beef industry.

Opportunities include:

- Infrastructure;
- Integrated export supply chains;
- Bilateral joint venture investment; and

- Livestock production and genetics.

Annexes

1. Aboriginal Corporation Viewpoints

Interviews with Aboriginal Corporation representatives provided a range of views and observations within the context of the Map and Gap Study. The key comments are presented below:

General Context

- Aboriginal Corporations have various degrees of business interests and can talk amongst themselves; question whether anyone facilitating this is worth the effort
- Have a strong focus on protecting cultural heritage, interested in self-sufficiency and how to maintain their services and reduce reliance on government money
- Their policy is to balance commercial with community and cultural interests
- Resource companies and some commercial operations have commitment to support Aboriginal business as part of Corporate Social Responsibility but loose definition of local aboriginals – people could live in Perth and have distant connection and still be seen as Pilbara based Aboriginals - the City could advocate for integrity in the definition of Pilbara Aboriginal
- City to facilitate traditional owners to come together and identify their specialities so that they complement each other rather than unnecessary competition
- Advocate or pressure others to provide support for Aboriginal businesses - for example help identify capacity partners so that Aboriginal businesses can win contracts by getting to the right standard; this could be a win-win through exchange of learning about culture and customs and reflect a genuine social contribution for the company - can be simple like local cleaning company that has an Aboriginal branch
- How to get in front of others and demonstrate local traditional owners involved? Enhance visibility and showcase Aboriginal companies and assist them to network with other businesses
- City to have discussions with Aboriginal businesses about meaningful opportunities, test ideas with the City & provides insights; provide local context & not just business environment strategy or 'rules of the game'
- They want the businesses to be sustainable– cost neutral is okay.

Business Environment

- Economic downturn a major challenge for most businesses, and cannot make profit since purchased a business in 2014 - despite many attempts to improve. Previously 11 businesses in the field, 19 in 2014, about seven or eight now – hoping the attrition will cut competition

- Overall lack of economic activity from mining companies' with construction down and it means they are focusing on efficiencies over next one to 3 years
- Expect business to remain tight. No benefits from the downturn. Competition is tough. There are no real major construction contractors; now get 60% of turnover compared to 3 years ago, but still same operating costs
- Decline in population has impacted on activity broadly
- Has been a difficult time as the local community has been too slow to react and get benefit, now things are tough and home prices have dropped, and businesses are struggling
- Government policies can have negative impact. For example HomesWest moving residents from Roebourne to Karratha reduces the local population (25 empty houses) and mining companies taking people out of the town after completing their training program and taking them to Karratha - impacts negatively on business
- Boom really hurt Aboriginal people who did not receive higher wages, no one has learned from this and it's not really empowering local businesses to be ready for the next wave.

Role for City of Karratha and Government Agencies

- Aside from improving its tendering & in local preferences, the City could improve:
    - Signage to highlight the businesses, centre of town to encourage tourists to stop
    - Parking for heavy vehicles and caravans – City currently fining patrons for parking offences; improved parking could fix this problem
    - Public toilet facilities to attract tourists– Should the City provide this or does it come from community funds? Upgrade Information bay
    - Transparent and speedy decision making in the City will help. Signs - City just needs to make a decision and speed up its processes and implementation - they just want the same as other parts of the City
    - Consider accessibility of services within the City boundaries (i.e. equity for small towns like Roebourne and Wickham etc.) rather than just total provision of services in Karratha
- What the government agencies can do is introduce them to potential partners and investors in the Asian markets
- The City could do some training in indigenous culture awareness – especially given turnover of its staff
- Encourage mining company's not to build camps for their own people in isolated suburbs – why not use existing stock? Local government planning approvals could prevent mining camps and provide income for Aboriginal Corporations that own rental properties
- Tendering processes. Landscaping five-year contract by City went to Perth based company, which was disappointing as the next project on horizon is needed to keep the business afloat. They would have employed indigenous as well as non-indigenous people.

- The City has a huge vehicle fleet so there are possible opportunities for business – check out the Reconciliation Action Plan - nice words but does this result in business for Aboriginal Corporations?
- Some mining companies positively discriminate in favour Aboriginal businesses because of corporate social responsibility obligations. The City's words are good (Reconciliation Action Plan) but is the practice there? - the counter argument is they need to spend money across the broad community businesses. So there is no advantage for indigenous corporations.
- Tendering process is fine and not too difficult for them, they know the system and have a strong procurement background and understanding of what is needed.
- They up against everyone and need to have a foot in the door. Could there be role for the City or the Chamber of Commerce of Industry to facilitate a meeting for Aboriginal organisations to come together and work out ways that they can collaborate with each other. Acknowledges local politics and the impact of this on business decisions so have a facilitated forum to kick off the discussions.
- Need to know what the City's vision for Roebourne is?

Limitations and Opportunities

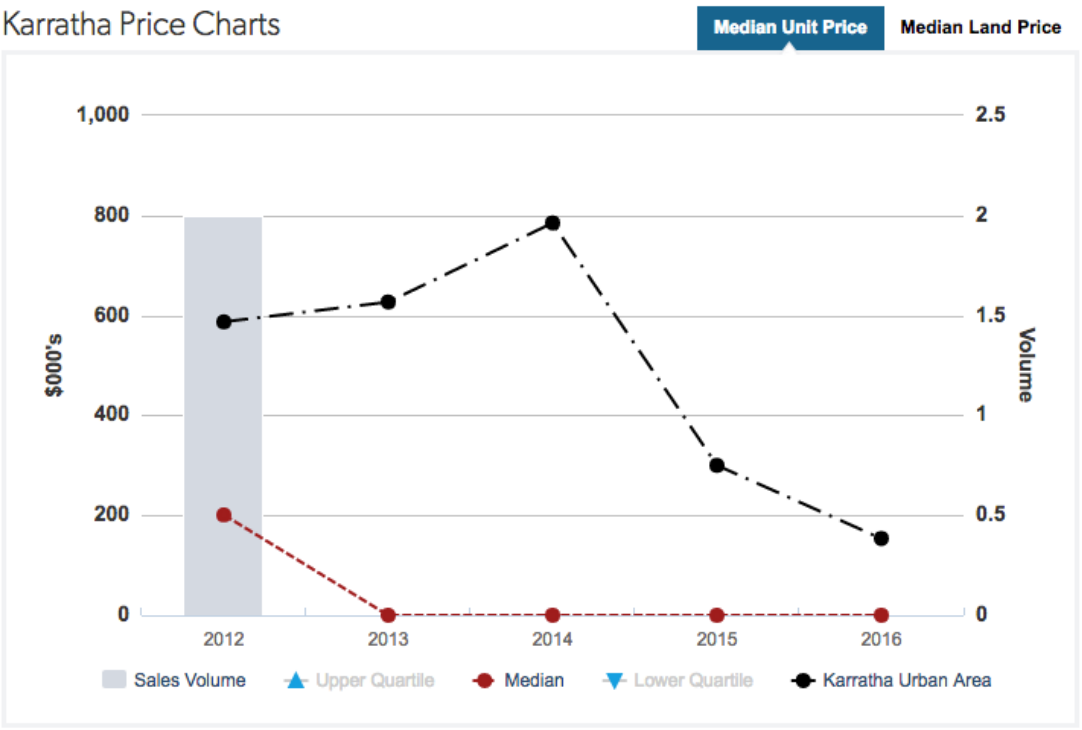
- Would like to do more work for the City for example streetscaping, maintenance of City facilities, parks and gardens including the swimming pool; staff want to do more than pick up litter
- However, rules of tendering are complicated and not fully understood, they feel like they are 'going in blind' sometimes and would appreciate more feedback
- Not aware of local preference rules. Would like to see a 5 to 10% local preference, and 5% local indigenous preference. Tendering does not favour local companies. Would be good to know how many local indigenous businesses win contracts.
- Still cultural barriers for employing Aboriginal people for example cleaning gardens or private houses; private individuals are sceptical or uncertain, sometimes rude; also raised the issue of no driving licenses as a barrier limiting employment opportunities
- Still have plans to open up new businesses as want to create jobs for young people.
- Not aware of the indigenous tourism conference, but they are aware that the ecotourism is a real potential now and has momentum given the Premier's support for tourism
- Sees the business incubator model filling a real need. Aboriginal Boards with local members have some professional experience but do not recognise their weaknesses. Often decide on business opportunities opportunistically, they want a particular business that may not be the best financial decision.
- Most Aboriginal Corporations purchase professional administrative services individually; there is a possibility in cost sharing of consultants/professional

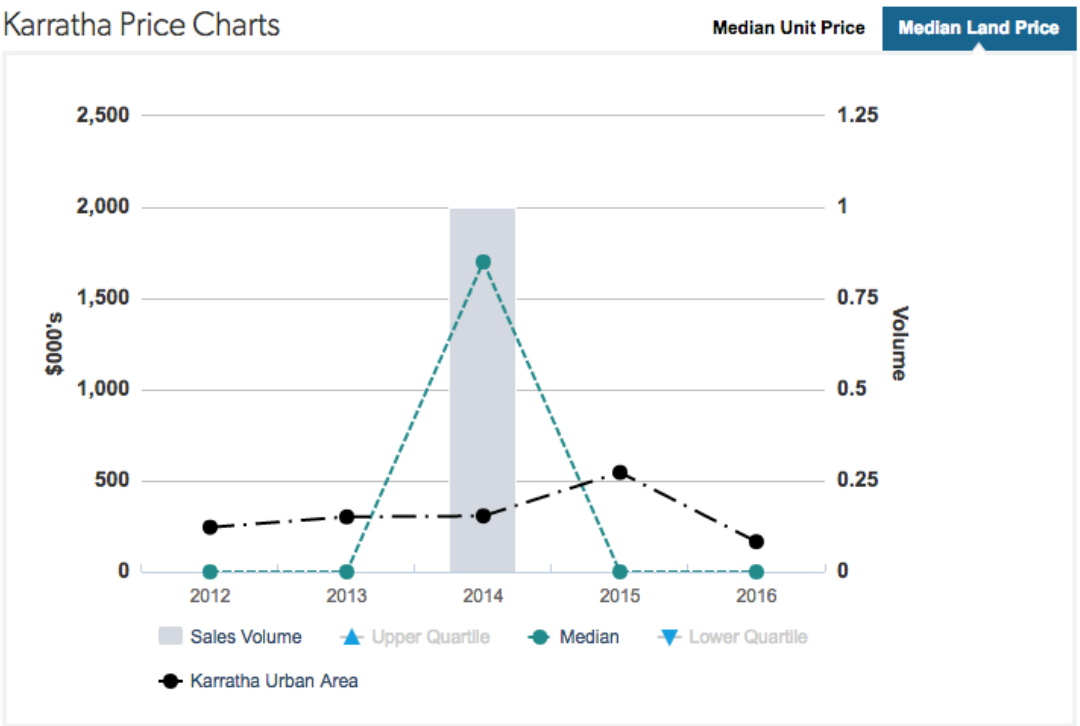
advice. This may stop unnecessary competition for developing and investing in the same sort of businesses

- Need to think of strategic business decisions and develop investment strategies.
- Not much happening from a local business point of view and projects that come from government or not-for-profits are all run-of-the-mill and need something more creative
- Three real business opportunities for Aboriginal communities – mining, agriculture and aquaculture. Didn't know of PDC proposal for aquaculture.
- Have contracts in Karratha for landscaping gardens and facilities management. Also do construction, shutdown scaffolding, rail security gates, buildings infrastructure
- Have done some cross-cultural awareness training for government, companies and schools.
- More children enrolling in Senior High School than ever before so need to cater for the teenagers coming onto the job market.
- Biggest issue to help local Aboriginals is to help youth get their driver's licenses - lack of it means unpaid fines, jail and difficulty in getting work.

2. Karratha Housing Price Trends

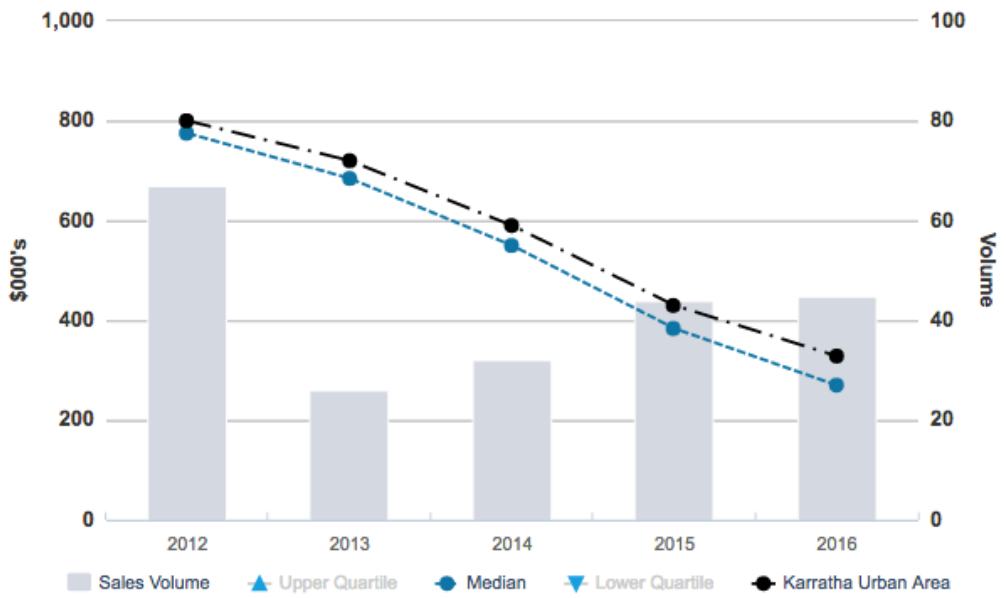
Karratha Town Centre





Bulgarra Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

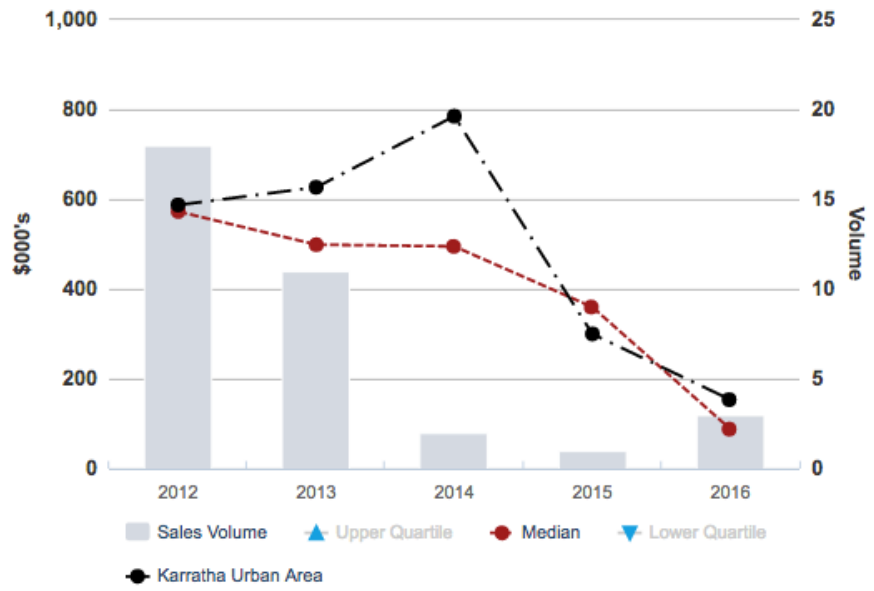
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$330,000	$270,000	$230,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Bulgarra	-16.9%	-29.6%	-18.4%	-4.3%
Karratha Urban Area	-7.5%	-23.6%	-16.0%	-3.0%
CPI		-24.5%	-3.8%	-0.4%

Bulgarra Price Charts

Median House Price | **Median Unit Price** | Median Land Price



Based on Settled Sales as at 7 November, 2016

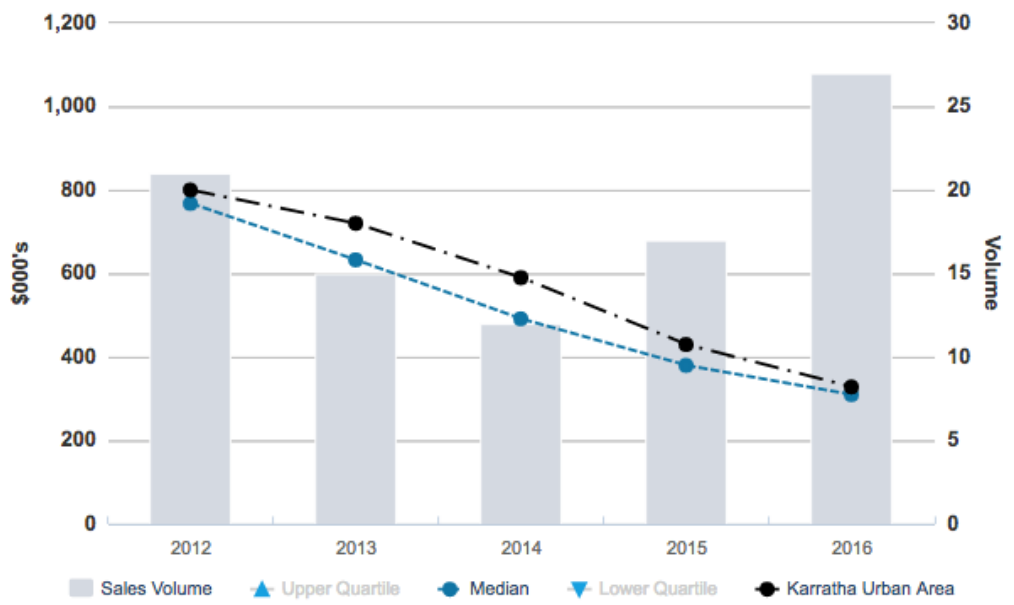
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$124,000	$88,000	$76,500

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Bulgarra	15.0%	-75.6%	-29.0%	-8.8%
Karratha Urban Area	-3.2%	-48.8%	-23.7%	-6.2%
CPI		-24.5%	-3.8%	-0.4%

Millars Well Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

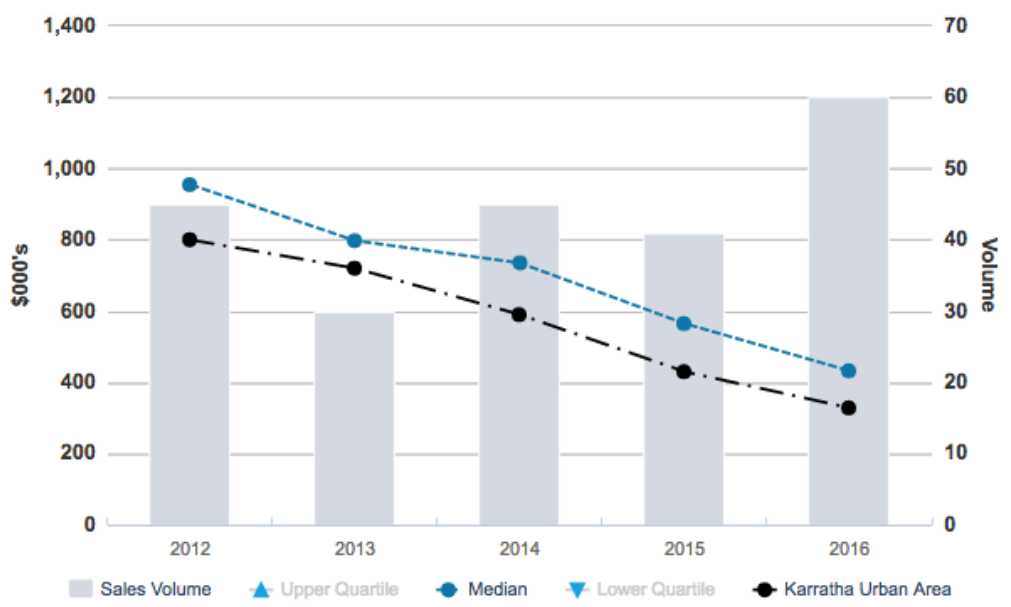
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$376,375	$310,000	$236,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Millars Well	-1.6%	-18.4%	-16.6%	-3.6%
Karratha Urban Area	-7.5%	-23.6%	-16.0%	-3.0%
CPI		-24.5%	-3.8%	-0.4%

Baynton Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

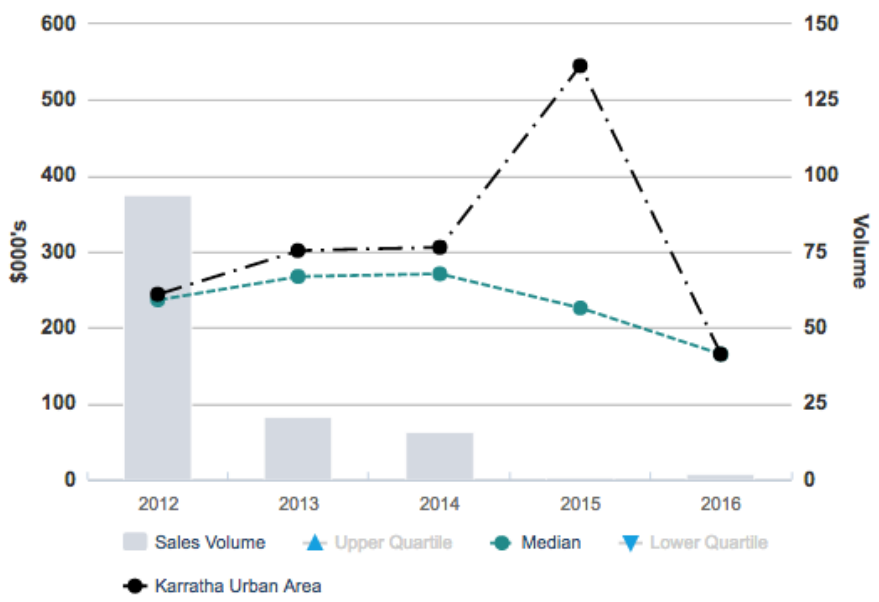
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$498,500	$432,500	$355,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Baynton	-2.3%	-23.5%	-14.7%	-2.2%
Karratha Urban Area	-7.5%	-23.6%	-16.0%	-3.0%
CPI		-24.5%	-3.8%	-0.4%

Baynton Price Charts

Median House Price | Median Unit Price | **Median Land Price**



Based on Settled Sales as at 7 November, 2016

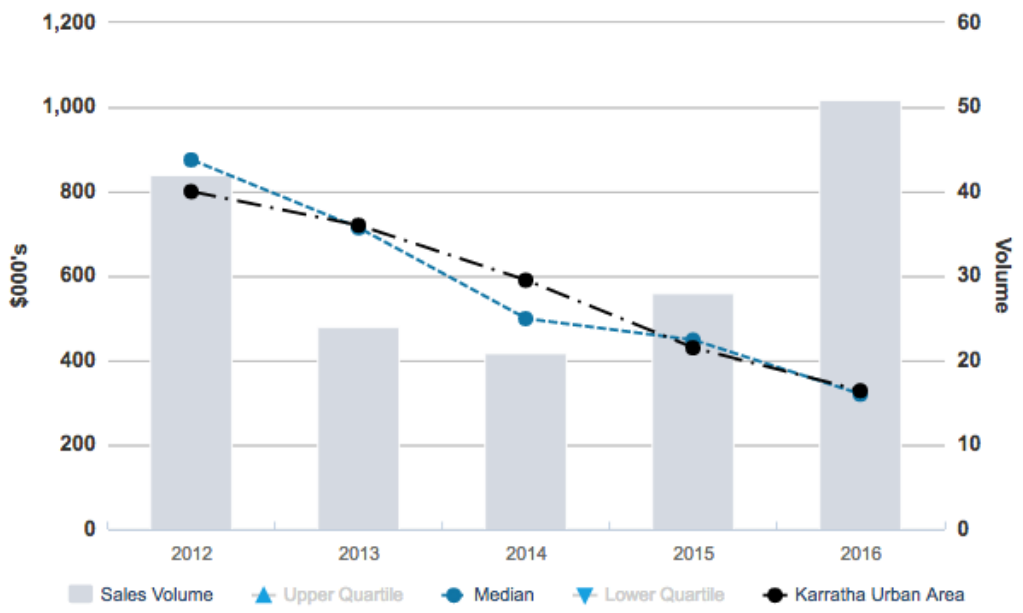
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$253,000	$165,250	$77,500

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Baynton	113.2%	-26.9%	-5.6%	-1.9%
Karratha Urban Area	-74.3%	-69.7%	-5.7%	0.9%
CPI		-24.5%	-3.8%	-0.4%

Nickol Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

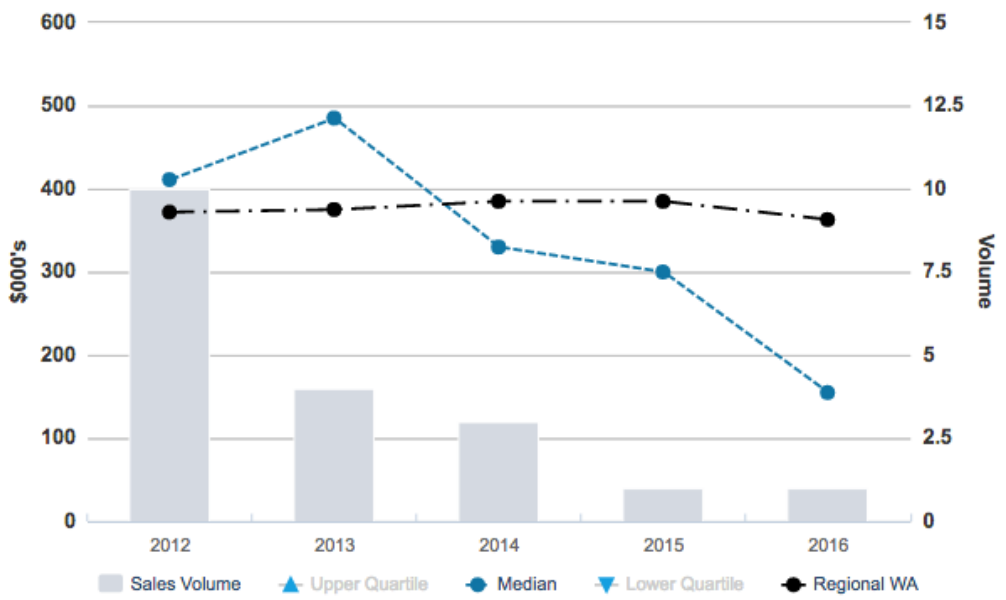
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$413,500	$320,000	$260,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Nickol	-18.0%	-28.7%	-19.0%	-3.9%
Karratha Urban Area	-7.5%	-23.6%	-16.0%	-3.0%
CPI		-24.5%	-3.8%	-0.4%

Roebourne Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

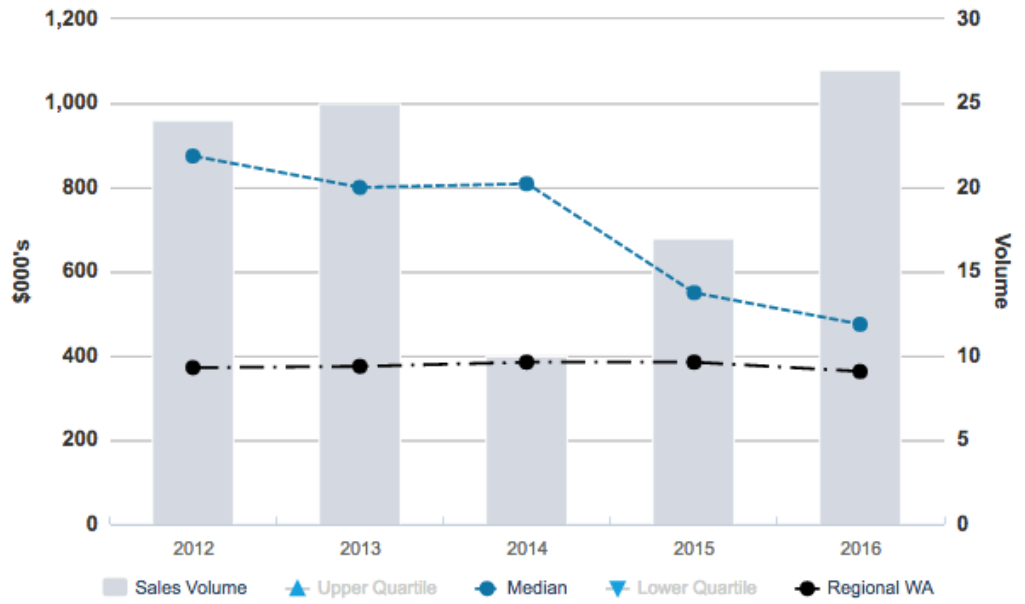
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$155,000	$155,000	$155,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Roebourne	0.0%	-48.3%	-10.0%	7.1%
Regional WA	-1.9%	-5.7%	-0.6%	2.2%
CPI		-24.5%	-3.8%	-0.4%

Dampier Price Charts

Median House Price | Median Unit Price | Median Land Price



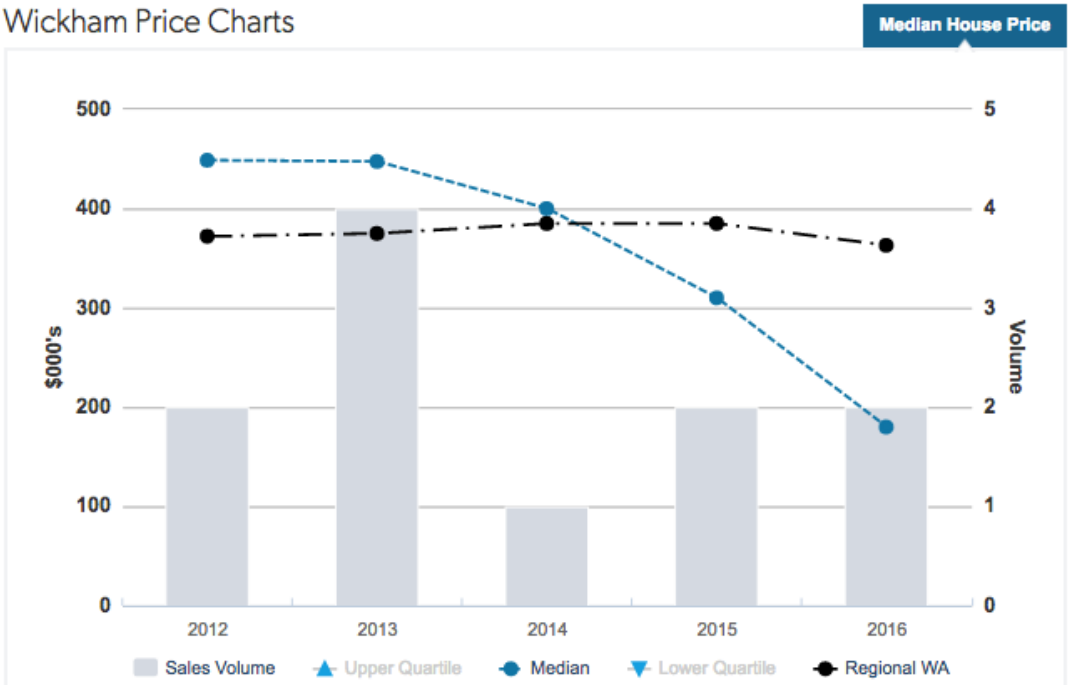
Based on Settled Sales as at 7 November, 2016

1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$506,000	$475,000	$400,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Dampier	5.0%	-13.6%	-11.1%	-0.8%
Regional WA	-1.9%	-5.7%	-0.6%	2.2%
CPI		-24.5%	-3.8%	-0.4%

Wickham Price Charts



Based on Settled Sales as at 7 November, 2016

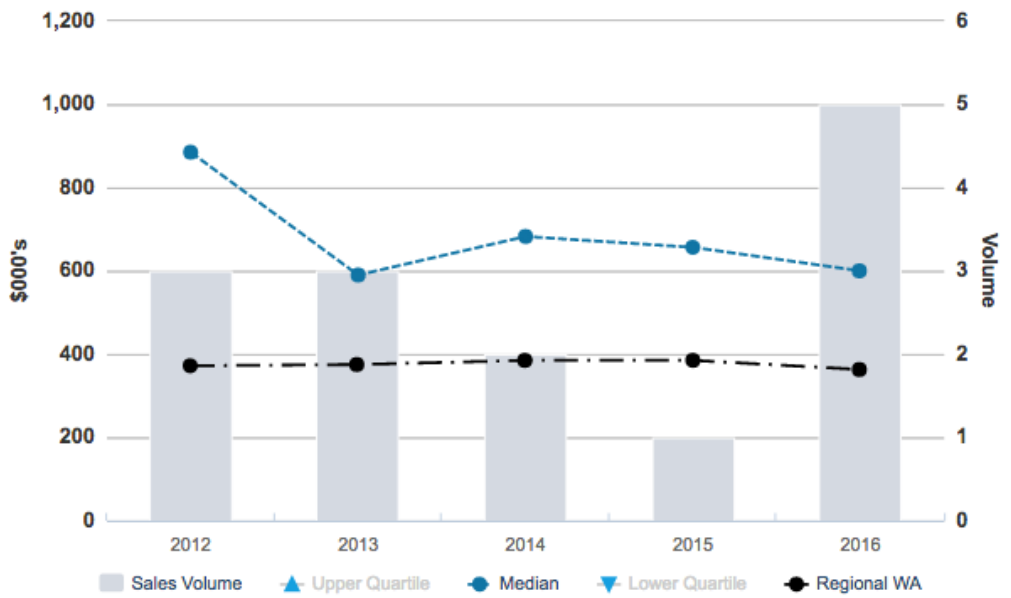
1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$180,000	$180,000	$180,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Wickham	-21.7%	-41.9%	-18.0%	0.0%
Regional WA	-1.9%	-5.7%	-0.6%	2.2%
CPI		-24.5%	-3.8%	-0.4%

Point Samson Price Charts

Median House Price | Median Unit Price | Median Land Price



Based on Settled Sales as at 7 November, 2016

1 October 2015 - 30 September 2016

UPPER QUARTILE	MEDIAN	LOWER QUARTILE
$746,500	$600,000	$550,000

GROWTH RATES	YTD QTR	1 YEAR	5 YEARS	10 YEARS
Point Samson	0.0%	-8.6%	-7.0%	1.0%
Regional WA	-1.9%	-5.7%	-0.6%	2.2%
CPI		-24.5%	-3.8%	-0.4%